

A Report
on
The Status, Current Activities and Future Plans
of
Department of Civil Engineering, IIT Delhi

Prepared for
Review Committee



**Department of Civil Engineering,
Indian Institute of Technology (IIT) Delhi,
New Delhi - 110 016, India.**

February 2014

REVIEW OF LAST FIVE YEARS (2008-2013)

21st and 22nd February 2014

The review of the Department of Civil Engineering, Indian Institute of Technology (IIT) Delhi is being carried out to receive inputs from the leaders in the profession, to improve our performance. Incidentally, this also forms a part of Ministry of Human Resource Development (MHRD) requirement to review the performance of all IITs during the last five years. This report documents the current activities, achievements and future plans of the Civil Engineering Department of IIT Delhi. The information included here is for the last five academic years: 2008-2009 to 2012-2013.

PREAMBLE

The Civil Engineering Department at IIT Delhi is one of the oldest departments of the Institute and was established along with the inception of the Institute in 1961. Starting with a regular five year bachelor's degree in Civil Engineering, the Department has grown leaps and bounds in offering seven different specialized Institute M.Tech programs along with a host of industry sponsored M.Tech/PG Diploma programs. The Department also offers M.S (Research) and Ph.D programs in different frontier areas of research in Civil Engineering. The Department which housed in a tiny shed in 1961, moved through the corridors of Block I, before finally settling in its present location at Block IV and V occupying nearly 4,150 m² (44,670 ft²) of covered area on the campus.

The Department has always been able to attract and nurture faculty that is equivalent to the best as per international standards. They have always been engaged with the cutting edge research in their respective areas and contributed not only at the national but also international level. They have always been deeply involved in moulding our young bright undergraduate and graduate students into technologists, technocrats and researchers who are capable of providing best of the solutions to the societal problems. As Head of the Department, I can vouch on behalf of my faculty colleagues and staff that we will continue to strive for greater heights in teaching and research that is state-of-the-art, relevant and shall help in nation building at large.

In 2011, we celebrated the Golden Jubilee Celebrations of the Institute, with a sense of achievement and accomplishment. The Civil Engineering Department has all along contributed not only in providing the academic excellence but also in building the basic infrastructure of this great Institute. In the latest ranking released by the QS World University Survey, IIT Delhi has been placed at 52nd position in institute-wise rankings and our Department is placed at 51-100 in subject-wise rankings. There would not be a better time to engage in introspection and put together our achievements as well as our resolve to engage with the challenges of future in view of rapidly changing needs and environment of our society.

This report first covers the introduction about the Department, details of faculty, staff and students, and then subsequently describes aspects which include: curriculum, teaching environment, research activities, innovation, design and development, R&D environment and placement details, outreach activities, governance, benchmarking and vision for next 5-10 years etc. of the Department.

This report is being submitted to the Review Committee to assess our activities. We look forward to receiving fruitful suggestions and recommendations to further improve ourselves in the future.

February, 2014

(Prof. A. K. Jain)
Professor and Head

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I About the Department

The Civil Engineering Department is one of the oldest departments of the Institute and was established along with the inception of the Institute in 1961. The department has pioneered not only in academics but also given to IIT, some of its most renowned and respected Wardens-Deans-Directors and Chairmen of various Institute Committees. Starting with a regular 5-year bachelor's degree in Civil Engineering, the Department has gone leaps and bounds in offering 8 different specialized institute M.Tech programs along with a host of industry sponsored M.Tech/PG Diploma programs and Ph.D program in different frontier areas of research in Civil Engineering. The Department also excels in industry sponsored research and consultancy activities. In early developmental phase (1961-70), which began with then Head of Department Prof. R. J. Cornish with five professors sent from U.K. on deputation, gave emphasis on teaching the students various elements of Civil Engineering. With no laboratories around at that time the teaching largely emphasized on practical engineering drawing exercises and workshop practices coupled with field visits every alternate weekends. The early work in the Department was all about setting up of state-of-the-art facilities for use by both the faculty as well as the students. Senior faculties were sent to U.K. for the procurement of laboratory equipments which were then housed in a specially commissioned spaces and strong floor laboratory for large scale structural testing was developed. The Department first started Master of Technology (M.Tech) in Soil Mechanics and Foundation engineering in 1964. M.Tech in Structural Engineering and M.Tech Water Resources Engineering started around 1967-68 and 1972, respectively. The details of various academic program offered by the department is discussed in Section-1. An innovative two-way video conference mode Masters Program in Construction Engineering & Management started in the year 2009-10, through a memorandum of understanding (MOU) signed between IIT Delhi and Ministry of Education, Govt. of Ethiopia. The Department also has been giving equal emphasis on research since 1970 in addition to research, and started developing the research facilities in various areas of Civil Engineering. The sub-research areas of different research groups have been revisited and revised based on the needs of the industry and societal problems and the faculty. The Department has been excelling in delivering the solutions to problems of industry through consultancy as well. This journey, however, has not been overnight; it's been a result of hard work put in by the faculty, the laboratory staff, the students and has thoroughly been backed by the administration at all levels through the times. This report however, gives the achievements and accomplishments of the Department in the last five years (2008-2009 to 2012-2013).

II Vision of the Department

The Department of Civil Engineering at IIT Delhi strives to become a leader in imparting quality education rooted in engineering basics and performing cutting edge interdisciplinary research in Infrastructure and Built Environment, to improve and maintain the quality of life in safe and sustainable manner.

Section-1

Curriculum

1. Curriculum

1.1 Degree programs offered

Bachelor of Technology (B.Tech) in Civil Engineering

The Department offers B.Tech degree to eligible candidates, which is a four year undergraduate (UG) program. The students have a wide variety of core and elective courses to choose from. After completing the broad based core courses, each student chooses elective courses in his / her area of special interest from amongst the streams of Construction Engineering and Management, Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering and Water Resources Engineering. The students undergo field trips, industry oriented practical training and colloquium, and final year project as a part of the undergraduate program. Each year more than 120 students join this prestigious program.

Master of Technology (M.Tech)

The Department offers eight postgraduate (PG) programs to eligible candidates, which are of two year duration each leading to M.Tech degree in a specialized field (as given in the table on the next page). In each program, students acquire knowledge in broad-based core courses followed by elective courses which provide in-depth and specialized knowledge in areas of special interest to them. Like the undergraduate students, they also undergo field trips and industry oriented practical training. A major project is also to be undertaken as a part of the curriculum in the final two semesters, which involves research or design and development. Around 250 students are enrolled for these M.Tech programs every year. The Department also offers M.Tech in Construction Technology and Management sponsored by the Larsen & Toubro (L&T) and one year PG Diploma in Metro Rail Transport: Technology and Management sponsored by Delhi Metro Rail Corporation (DMRC) which is open to industry sponsored candidates only. The Department also offers one M.Tech program to Addis Ababa Institute of Technology (AAiT), Addis Ababa University in Ethiopia through the two-way video conferencing mode since 2009 in Construction Technology and Management. Another similar two-way video conferencing mode M.Tech program for AAiT in Geotechnical and Rock Engineering specialization will start since 2014.

Research Programs (Doctor of Philosophy, Master of Science)

The department offers Ph.D degree to postgraduate students who have attained M.Tech / M.E. degree and also to a few exceptionally bright B.Tech students. At any instance, we have more than 150 students who are full-time, faculty who pursue their Ph.D under the QIP (Quality Improvement Program), part-time students who are basically from industry or nearby engineering colleges. The Department also offers M.S(R) in all the areas of Civil Engineering to bright undergraduate students.

Timeline of Various Academic Programs of Civil Engineering

• B.Tech in Civil Engineering	1961
• M.Tech in Soil Mechanics and Foundation Engineering (Revised and Upgraded in 2004: Geotechnical and Geoenvironmental Engineering)	1964
• Ph.D Program	1964
• M.Tech in Structural Engineering	1967
• M.Tech in Water Resources Engineering	1972
• M.Tech in Rock Mechanics (Revised and Upgraded in 2004: Rock Engineering and Underground Structures)	1977
• M.Tech in Construction Engineering and Management	1980
• M.Tech in Environmental Engineering and Management	1997
• M.S by Research	1997
• M.Tech in Construction Technology and Management	1999
• M.Tech in Transportation Engineering	2005
• PG Diploma in Metro Rail Transport: Technology and Management	2008

1.2 Consistency of curricula with academic vision of the Department

The curriculum gets updated every ten years with the future vision of the activities being undertaken by the Department. The UG curriculum takes care of all broad areas of Civil Engineering. As far as PG curriculum is concerned, it gets modified based upon frequent inputs from industry, alumni and faculty. Also, the Department offers several new pre-Ph.D courses commensurate with new research areas undertaken.

1.3 Quality of programs:

(a) Periodicity of curriculum review UG and PG.

The curricula of UG and PG programs are reviewed every ten years at the Institute level. In the year 2014 both UG and PG curricula are being reviewed.

- (b) Mechanism for review at UG and PG level.

Institute, Department, and Section - level workshops are organized and feedbacks are sought from students, faculties, alumni and employers, and then all are incorporated to reflect upon strengths and areas needing additions. Subsequently, suggested improvements are discussed and incorporated. This also reflects the vision of the Department as far as PG courses are concerned.

- (c) Coursework for each UG, PG and Ph.D program - Core / Elective.

Information is available in the Courses of Study for each program, however summary is presented in *Annexure-1*.

- (d) Pre- Ph.D courses offered (*in last 5 yrs*).

All courses with levels above 700 are offered as Pre-Ph.D courses.

- (f) Overlap between courses (c) and (d) & (e), including opening letter to UG.

Courses are approved only if they have less than 20% overlap. Opening courses to UG students is as per the Institute policy.

- (i) Relevance of UG programs to recruiters, potential and on-campus recruiters.

UG programs are offered in concert with the need of the discipline and requirements of the society and industry. Feedbacks from employers and alumni are also considered in this process.

Section-2

Teaching Environment

2. Teaching Environment

2.1 Student-teacher ratio

(UG: 450 + PG: 300 + PhD: 160)/43 = 21* → in position faculty strength

* Based on gross numbers and on class size.

2.2 Details of students graduated

Program	No. of Students Graduated				
	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
B.Tech	72	70	75	78	78
M.Tech	100	109	98	104	113
PG Diploma (Metro) & DITT	22	23	20	20	21
Ph.D	16	9	10	10	14

2.3 Student teaching assistantship

Average of 8 hours per week is spent by the Student in teaching assistantship works.

2.4 Skilled technical staff

Total Staffs: 24

No. of Skilled Staff: 18

List of staff and their details is given in *Annexure-2*.

2.5 Gross laboratory space and its distribution

The total floor area of the Department is 44,558 ft², located in Block-IV and Block-V of the Institute's academic area. The break of total area is given below:

Description	Area (m ²)	Area (ft ²)
Faculty Office	648	6,976
Staff Office and Research Scholar room	292	3,144
Office/Committee Rooms/Seminar Room/Pantry etc.	331	3,568
Laboratory	2,868	30,870

There are various laboratories in the Department catering UG, PG and PhD students. The details of area of these laboratories and their use various programs are given below:

Sl. No.	Name of the Lab.	Area (m ²)	Area (ft ²)	Use by Students of UG/PG/PhD
1	Computational Laboratory	155	1,664	UG/PG/PhD
2	Concrete Laboratory	304	3,270	UG/PG/PhD
3	Computational Geotechnical Laboratory	58	624	PG/PhD
4	Highway Laboratory	120	1,296	UG/PG/PhD
5	GIS Laboratory	37	400	UG/PG/PhD
6	Transportation Laboratory	149	1,600	UG/PG/PhD
7	Environmental Laboratory	279	3,008	UG/PG/PhD
8	Engineering Geology Laboratory	187	2,016	UG/PG
9	Surveying Laboratory	73	784	UG
10	Building Materials Laboratory	137	1,472	UG/PG/PhD
11	Strong Floor Laboratory	317	3,408	UG/PG/PhD
12	Rock Mechanics Laboratory	232	2,496	UG/PG/PhD
13	Construction Tech. Laboratory	37	400	PG/PhD
14	Geosynthetics and Geoenvironmental Laboratory	101	1,088	PG/PhD
15	Construction Simulation Laboratory	37	400	PG
16	Smart Structures and Dynamics Laboratory	56	600	UG/PG/PhD
17	Structural Analysis Laboratory	102	1,096	UG/PG/PhD
18	Soil Engineering Laboratory	211	2,272	UG/PG/PhD
19	Water Resources Simulation Laboratory	268	2,880	UG/PG/PhD

2.6 Laboratory modernization (UG/PG Core teaching) (last 5 years)

Computational Laboratory

- 32 nos. of Dell Desktop Computers with Intel Core 2 Duo Processor and 4 GB RAM, preloaded with Windows Vista 32 bit for UG/PG students.
- 10 nos. of HP DX 2480 Desktop Computers with Intel Core 2 Quad Processor and 4 GB RAM preloaded with Windows Vista 32 bit for Ph.D students.
- Dell Studio XPS 16 Intel Core i7, 6 GB RAM Laptop for heavy duty computing requirement for faculty and Ph.D students.
- Dell Power Edge T610 Server with Intel Xeon Quad Core Processor, 8 GB RAM and 8 X 1 TB HDD with RAID controller for CCTV IP Cameras video recording.
- Motorized Glass Beaded Screen for Projector for use in UG/PG classes.
- Up-gradation of RAM from 2 GB to 4 GB of existing 17 nos. of HP DC7700 Desktop Computers placed for UG/PG students.
- Seagate Network Attached Storage (NAS) server raw capacity of 12 TB.
- Casio Interactive Hybrid LED-Laser.

9. Projector of 3000 Lumens with 20,000 hours of expected lamp life for reducing lamp replacement in next 10 years.
10. Purchase of Handheld 3M made 30 Lumens Pocket Projector with remote for faculty use.
11. SAP2000 Ultimate Version 15 software with 25 no. of licenses for UG/PG students.
12. ETABS Version 9.7.4 software with 25 no. of licenses for UG/PG students.
13. SAFE P/T Version 12.3.2 software with 10 no. of research licenses for UG/PG students.

Geotechnical Engineering Laboratories

1. Computerized triaxial test apparatus (imported)
2. Vane shear test apparatus (imported)
3. Automated compactor for proctor and CBR test (imported)
4. Permeability apparatus(constant and falling head)
5. Liquid limit apparatus (Casagrande and cone penetration)
6. Field density test apparatus
7. Field CBR test apparatus
8. Stereoscope
9. Digital magnetic sieve shaker
10. Strain indicator (10 channel)
11. Roughness profilogram
12. Ultra sonic wave velocity apparatus
13. Slake durability apparatus
14. Specimen grinder
15. LVDTs (10, 50, 75 and 100) mm for measuring displacement under cyclic/ dynamic loads
16. Swelling pressure apparatus
17. Digital pressure controllers and confining pressure units for triaxial test setup
18. Direct shear apparatus-imported
19. Rocking cutting machine
20. Lapping machine
21. Soil pulverizer
22. Pore pressure transducers
23. Minerals for geology lab
24. Optical microscope
25. Accelerometers (6 nos.) and 8-channel universal data acquisition system
26. MIDAS GTS Software
27. Hand operated SCPT for demonstration
28. Block vibration test setup
29. Schmidt hammer
30. Miniature in-situ vane shear apparatus

Structural Engineering Laboratories

Heavy Structures Laboratory (HSL)

1. Complete renovation of HSL for carrying our research in the field of earthquake engineering and structural dynamics

2. Installation of chiller for providing cooled water supply to hydraulic power system of large capacity
3. Installation of Hydraulic Service Manifold (HSM) to facilitate the operation of servo-controlled hydraulic actuators independently
4. Procurement of a MTS (high-stroke) servo-controlled hydraulic actuator of 250 kN capacity
5. In-house fabrication of self-centering reaction frame of 2,000 kN capacity
6. Installation of 1,000 kN double-acting loading jack
7. Procurement of post-tensioning double-acting 600 kN loading jack system
8. Installation of pneumatic-type air compressor and distribution system
9. Procurement of 8-channel acoustic emission sensors and data acquisition system
10. Installation of electro-dynamic mass shaker from frequency measurements
11. Upgradation of Vishay Data Acquisition system for pseudo-static test measurements
12. Upgradation of National Instrument Data acquisition system for dynamic measurements
13. Modification of controller system to equip with the real earthquake data for shake table
14. Procurement of several displacement, acceleration and load measurement sensors
15. Upgradation of micro-profiler controller system for hydraulic actuators
16. Advanced Dynamics Laboratory (ADL) upgradation

Multi-Hazard Protective Structures Laboratory (MHPSL)

1. A complete new laboratory developed for research in the field of blast and fire engineering
2. 600 kN strain-controlled dynamic Universal Testing Machine (UTM) for high strain rate characterization of advanced materials
3. 1,000 kN capacity UTM with fire furnace (1,300°C) for thermo-mechanical material characterization
4. Large fire furnace for simultaneous mechanical and fire load application, elevated temperatures of about 1,300°C with ascent and descent control
5. Gas pressure welding apparatus setup (imported from Japan)
6. Hydrogen gas generation on-site for gas pressure welding of steel reinforcing bars using hydro-oxygen flame
7. Installation of high-computing workstations for simulation purposes

Structural Analysis Laboratory (SAL)

1. Procurement of automatic real-time data acquisition system
2. Installation of high-precision “Truss” system for teaching of Structural Analysis course

Concrete Structures Testing Laboratory (CSTL)

1. Procurement of thermo-controlled curing chamber
2. Strain-controlled compression testing machine
3. 3,000 kN capacity forklift
4. Hydraulic trolleys for heavy material handling
5. Development of proper storage space for cement, sand, aggregate and other materials

6. Pre-tensioning (4×150 kN) apparatuses for pre-stressed concrete elements by long-line (Hoyer) method

Surveying Laboratory

1. Modern electronic equipments in CEL271: Total stations, GPS and digital levels

Transportation Laboratory

1. Asphalt pavement density gauge
2. Lidar speed gun
3. Brock field viscometer
4. GPS based speed/journey time measurement devices/receivers
5. Thin film oven
6. Aggregate crushing testing machine
7. NCAT asphalt furnace transferred from TRIPP project
8. Digital softening point apparatus
9. Dip stick
10. Software: CUBE software, SIDRA software, TRAZER software, NLOGIT software, VISSIM software

2.7 Courses taught and study materials prepared (for last 5 years)

Faculty Name	Courses Taught (/Coordinator)	Course File Available	Monographs, Notes, Books, Videos, Web-Based Materials etc.
A.K. Jain	CEL719, CEL778	Yes	Yes
B.J. Alappat	CEL140, CEL311, CET410, CEC410, CEL411, CEL794, CEL889, CEL891,	Yes	Yes
B. Bhattacharjee	CEL232, CEL768, CEL774, CEP775, CEL776, CEL777	Yes	Yes
B.R. Chahar	CEN110, CEP200, CEL351, CEL739	No	Yes
M. Datta	On Lien 2008-2013		
A.K. Gosain	NEN100, CEL455, CEL747	Yes	Yes
Ashok Gupta	CEL231, CEL724	Yes	Yes
K.C. Iyer	CEL338, CEL362, CEL464, CEC760, CEL767, CEL772, CEC773, CEL866, SML740	Yes	Yes
A.K. Keshari	CEP200, CEL451, CEL737, CEL744, CEL748	Yes	Yes
M. Khare	CEL120, CED310, CEL411, CED411, CED412, CEL793,	Yes	Yes

	CEL892		
A. Madan	CEL432, CEL433	Yes	Yes
S. Mathur	CEL251, CEL738, CEL741	Yes	Yes
G.V. Ramana	CEL222, CEC410, CEL422, CEL423, CEL701, CEL704, CEL705, CEL707	Yes (Except 423)	Yes
K.S. Rao	CEL222, CEL321, CEP751, CEP752, CEL753, CEL756, CEL761, CED851, CED852	Yes	Yes
J.T. Shahu	CEN110, CEP200, CEL222, CEL321, CED701, CEL702, CEP702, CEL703, CEL706, CEL754, CED811, CED812	Yes	Yes
K.G. Sharma	CEL751, CEP751, CEL752, CEL753, CEL758, CEL760	No	Yes
G. Tewari	CEL241, CEL442, CEL781, CEL785, CEL786, CEL788, CEL844	Yes	Yes
R. Ayothiraman	CEL421, CEL423, CEP702, CEL707, CEL708, CEL757, CED851, CED852	Yes	Yes
G.S. Benipal	CEL718, CEL721, CEL722, CEL734	No	Yes
S. Bhalla	CEL232, CEL331, CEL727, CEP726	Yes	Yes
R.R. Kalaga	CEL241, CEL341, CEL782, CEL783, CEL784, CEL786, CEL843	Yes	Yes
D.R. Kaushal	CEL251, CED310, CEL351, CEL459, CED411, CED412, CED841, CED842	No	Yes
V. Matsagar	CEN110, CEL231, CEL232, CEL331, CEL332, CEL431, CEL718, CEL731, CEL734, CES820, CED821, CED822, CES870, CED871, CED872	Yes	Yes
S. Bishnoi	CEL232, CEL768, CEL771, CEP770	Yes	Yes
S. Chakma	New Faculty (Joined in January 2014)		
T. Chakraborty	CEN110, CEP200, CEL222, CEL321, CED701, CEL703, CEP752, CEL754, CEL762, CEL763, CEL801, CED811, CED812, CEU850	Yes	Yes

C.T. Dhanya	CEL251, CEL453, CEL745	Yes	Yes
A. Ganguli	CEL231, CEL722, CEL734, CEP775	Yes	Yes
Gazala Habib	CEL271, CEL311, CEL892	No	Yes
S. Gupta	CEP200, CEL231, CEL332, CED411, CED412, CEP726, CEL729, CEL771, CED821, CED822, CES870, CED875, CED876	No	Yes
Arun Kumar	CEL212, CEL795, CEL899	Yes	Yes
Uma J. Maheswari	CEL362, CET760, CEC760, CEL767, CEL769, CEP770, CEL773, CEP775	Yes	Yes
B. Manna	CEN110, CEP200, CEL222, CEL321, CEL610, CEP701, CEL702, CEP702	Yes	Yes
D.R. Sahoo	CEL718, CEP726	Yes	Yes
A.K. Swamy	CEL341, CEL782, CEL784	Yes	Yes

2.8 Research and innovations in teaching-learning processes

- Interactive engineering mechanics course has been developed.
- Field trips in research and innovation are organized frequently.
- Project based laboratory sessions are conducted.

2.9 IIT Delhi students had internship outside (overseas or India)

Program	2008-09	2009-10	2010-11	2011-12	2012-13
UG	1	1	5	1	4
PG	9	3	1	3	8

2.10 Overseas students had internship at IIT Delhi

Program	2008-09	2009-10	2010-11	2011-12	2012-13
UG	7	7	7	4	8
PG	-	-	2	2	-

2.11 Course feedback

Course feedback is available online with the Institute as well as best teacher awards have been conferred on the faculty members of the Department.

2.12 Lectures delivered by industry experts

Industry experts who have delivered lecture(s), seminars, discussions as part of a core/elective course - UG and PG are provided below separately.

UG	CEL338
PG	CEL753, CEL756, CEL758, CEL788, CEL794, CEL843, CEL889, CEL844, CED852, CEL866

2.13 Industry exposure to students

Course-related visits to factories, sites, industry exhibitions, field trips, etc. - UG and PG are provided below separately.

UG	CEL271, CEL311, CEP200, CEL241, CEL332, CET410, CEL423
PG	CEL708, CEL717, CEP726, CEL744, CEP751, CEL752, CEP752, CEL753, CEL756, CEL758, CEL768, CEL771, CEL774, CEL778, CEL788, CEL794

Section-3

Research

3. Research

3.1 Masters and Ph.D students support - (i) by institute assistantship, (ii) on sponsored projects/consultancies, (iii) others sources and (iv) sponsored by external organizations

Year	2008-2009		2009-2010		2010-2011		2011-2012		2012-2013	
	M.Tech	Ph.D	M.Tech	Ph.D	M.Tech	Ph.D	M.Tech	Ph.D	M.Tech	Ph.D
Institute assistantship	120	20	117	27	164	39	174	47	170	47
Sponsored projects/consultancies	0	1	0	1	0	3	0	1	0	2
Other sources (QIPs)	1	6	1	8	0	7	0	9	0	7
Sponsored by external organizations (UGC, CSIR, AICTE, CPHEE, DAE, ADB)	3	3	3	4	2	3	1	7	2	3
Total	124	30	121	40	166	52	175	64	172	59

3.2 Ph.D students: enrollment and graduation per faculty (for last 5 years)

Year	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Total enrolled	30	40	52	64	59
Total graduated	16	9	10	10	14

Total no. of Ph.Ds on roll **203**

Total no. of Ph.D student per faculty **4.7**

3.3 Areas of research

Environmental Engineering : Urban air quality management; Indoor air pollution; Water and waste water treatment; Nano particles, antibiotics; Emerging water contaminants; Urban water management; Non-point source of pollution; Membrane process; Modeling, simulation and optimization of environmental systems; Environmental impact assessment; Human health risk assessment; Solid waste management; Incineration; Circulating fluidized bed operations; Landfill management; Carbon sequestration; Sustainable development (urban cities/ growth centers); Environmental risk analysis, GIS and remote sensing applications for environmental management; Aerosol characterization, local air quality, climate change and health impact.

Geotechnical Engineering : Soil mechanics; Rock mechanics; Rock engineering; Foundation engineering; Slope stability and dams; Ground improvement: geosynthetics; reinforced soil; Geoenvironmental engineering; Offshore geotechnology; Underground structures; Constitutive modeling; Ash ponds and ash utilization; Landfills; Expansive soils; geophysical methods; Engineering geology; Soil dynamics and earthquake geotechnics; Ground response, Site specific studies, Hazard analysis, seismic microzonation; Geotechnology for tracks and pavements; Computational methods; Risk and reliability in geotechnical and geoenvironmental engineering; Blast and impact analysis; Energy geotechnology; Non-linear soil-pile interaction; Pile dynamics, dynamic behavior of tunnels and slopes, landslides and man movement.

Structural Engineering : Analysis and design of structures; Tall buildings; Bridges; Earthquake engineering; Wind engineering; Blast engineering; Offshore structures; Masonry, RCC and steel structures; Construction management; Construction technology; Concrete technology; Structural dynamics; Structural control; Uncertainly quantification and chaos; Constitutive modeling; Computational methods, mechanics; Modeling of damage, plasticity and creep of concrete; Durability of concrete; Rebar corrosion; Modeling of cements; Supplementary cementitious materials; Composites; High performance concrete; Self-compacting concrete; Financial analysis; Contract administration, quantitative methods in construction management; Structural health monitoring; Smart materials and structures; Tensegrity structures; Biomechanics; Engineered bamboo structures; Artificial intelligence (AI); Damage assessment and strengthening; Microstructural modeling; Mechanics of composite materials; Non-destructive testing and evaluation using ultrasound; Subsurface imaging using ultrasonic wave propagation; Energy harvesting from structures.

Transportation Engineering : Transport planning; Transport policy; Transportation safety; Construction work zone safety; Heterogeneous traffic flow modeling; Traffic safety and capacity of hill roads; Mass transportation planning; Fuzzy systems; Urban transport infrastructure planning and design; Expert systems in transportation engineering; Environmental impact assessment; Non-motorized transport planning; Modeling of pedestrian behavior; Geometric design of transportation infrastructure; Characterization of pavement materials; Pavement design (flexible and rigid); Damage modeling of bitumen and bituminous mixtures; Constitutive modeling of pavement materials; Recycling of civil infrastructure materials; Rheology of asphaltic materials; Condition assessment of highway infrastructure; Pavement management systems; Highway engineering; Airport infrastructure.

Water Resources Engineering : Hydrology in natural and urban environment; Hydrological modeling and simulation; Stochastic processes; Data mining in hydrology; Flood forecasting and modeling; Snow dynamics; Hydro-climatology; Climate change effects in water resources; Watershed modeling; Large river basin modeling; water resources systems, planning and management; Water allocation; Water resources conflicts; Irrigation management; Flow through porous media; Groundwater modeling; Ground water contamination; Contaminant transport modeling; Leachate pollution; Bioremediation; River water quality modeling; Environmental impact assessment of water resources projects; Surface and subsurface drainage; Hydraulic structures; Sediment transport; Application of numerical methods, CAD, CFD, AEM, GIS, and Remote sensing in Water Resources Engineering.

3.4 Publications per faculty in journals

Total publications in last five years (2008-2013): 400 (approx.)

Total publications in last five years per faculty: 9.5

3.5 Publications (journal and conference) total and per student (M.Tech and Ph.D)

Year-wise publications in Journals (J) and Conferences (C)	2008-09		2009-10		2010-11		2011-12		2012-13	
	J	C	J	C	J	C	J	C	J	C
Individual	21	23	19	35	27	37	29	38	44	36
With Ph.D	35	48	41	42	49	44	46	45	45	55
With M.Tech	4	5	5	4	3	5	5	12	7	12
With UG	0	2	1	0	0	3	1	4	0	0
Total	60	78	66	81	79	89	81	99	96	103

List of Publications in Journal and Conferences in the last five years (2008-2013) is enclosed in *Annexure-3 and Annexure-4*, respectively.

3.6 Best papers in last 5 years: (i) individual best 3, (ii) department/ center best 10; and brief justifications from faculty and department

Faculty	Individual Best 3	Justifications
A.K. Jain	<ol style="list-style-type: none"> 1. Srinivasan Chandrasekaran, Gaurav and Jain, A.K. (2010). Ringing response of offshore compliant structures, International Journal of Ocean and Climate Systems, Multi-Science Publishing, Vol. 1, No. 3-4, pp. 133-144 2. Devgan, S., Jain, A. K. and Bhattacharjee, B. (2010). Predetermined overall thermal transfer value coefficients for Composite, Hot- Dry and Warm- Humid climates. Energy and Buildings, Vol. 42, pp. 1841-1861. 3. Srinivasan Chandrasekaran, Seeram Madhuri and A.K. Jain (2011). "Aerodynamic Response Behavior of Offshore Triceratops", Journal of Ship and Offshore Structures, Taylor & Francis. 	

<p>B.J. Alappat</p>	<ol style="list-style-type: none"> 1. Atul Sharma, Dinesh Kumar, SrikanthMeesa, Somali Pant and Babu J. Alappat (2008), Formulation of a Landfill pollution potential index to quantify overall pollution potential of municipal land-dumps, Waste Management & Research, 26, pp. 474 - 483. 2. Varghese G.K. and B. J. Alappat, (2012), The National Green Tribunal Act: Harbinger for the Days of Environmental Forensics in India?, Environmental Forensics Journal, 13 (3), pp. 209-215. 3. Raman Sharma, Arnaud Delebarre and B. J. Alappat, Cold model testing of a recirculating fluidized bed reactor working in alternate aeration-fuel burning cycles for chemical looping, Canadian Journal of Chemical Engineering, Vol. 92, 2014, pp 156-167. 	
<p>B. Bhattacharjee</p>	<ol style="list-style-type: none"> 1. Rakesh Kumar and B. Bhattacharjee. Porosity pore size distribution and in situ strength of concrete. Cement and Concrete Research. Vol. 33, No. 1. pp. 155-164. Jan. 2003. 2. Nagesh M and B. Bhattacharjee. Modeling of chloride diffusion in concrete and determination of diffusion coefficients. ACI Material Journals Vol. 95, No. 2. pp. 113-120, Mar-April 1998 3. Kamal K Jain and B. Bhattacharjee. "Application of fuzzy concepts to the visual assessment of deteriorating reinforced concrete structures", Journal of Construction Engineering and Management, ASCE. Vol. 138, No. 3. March 2012. pp.: 399-408. 	<p>This paper relates microstructure of concrete to strength, well cited (citations 78 in SCI journals, 96 in Scopus and 111 in Google Scholar)</p> <p>This paper provides a model for chloride ingress in unsaturated considering coupled ingress in solution phase and ionic diffusion</p> <p>It is recent paper deals with decision making in case of distressed structure</p>
<p>B.R. Chahar</p>	<ol style="list-style-type: none"> 1. Chahar, B.R. (2009). "Seepage from a Special Class of a Curved Channel with Drainage Layer at Shallow Depth." Water Resource Research, Vol. 45(9), W09423, doi:10.1029/2009WR007899. 2. Gaur S., Chahar B.R., and Graillet D. (2011) "Analytic elements method and particle swarm optimization based simulation-optimization model for groundwater management." Journal of Hydrology Vol. 402(3-4), 217-227 3. Chahar, B.R. (2006). "Analytical solution to seepage problem from a soil channel with a curvilinear bottom." Water Resource Research, Vol. 42, W01403, doi:10.1029/2005WR004140 	

<p style="text-align: center;">Manoj Datta</p>	<ol style="list-style-type: none"> 1. Singh, R.K., Datta, M. and Nema, A.K. (2009), “A New System for Ground Water Contamination Hazard Rating of Landfills” Journal of Environmental Management, Springer, Vol. 91, pp. 344 - 357. 2. Jakka, Ravi S., Datta, M., and Ramana, G.V., (2010), “Liquefaction Behavior of Loose and Compacted Pond Ash”, Soil Dynamics and Earthquake Engineering, Elsevier, Vol. 30, pp. 580 - 590 3. Datta, M., (2012) , “Geotechnology for Environmental Control at Waste Disposal Sites”, Indian Geotechnical Journal, Springer, Vol. 42, No. 1, pp. 1-36 	<p style="text-align: center;">Invited Annual Lecture of Indian Geotechnical Society</p>
<p style="text-align: center;">T.K. Datta</p>	<ol style="list-style-type: none"> 1. R.S. Jangid, T.K. Datta (1995) "Seismic Behavior of Base-Isolated Buildings: A State-of-the-Art-Review", Structures and Buildings, 110(2), 186-203. 2. R.S. Jangid, T.K. Datta (1997) "Performance of Multiple Tuned Mass Dampers for Torsionally Coupled System" Earthquake Engineering & Structural Dynamics, 26(3), 307-317. 3. R.S. Jangid, T.K. Datta (1994) "Nonlinear Response of Torsionally Coupled Base Isolated Structure", Journal of Structural Engineering, 120(1), 1-22. 	<p style="text-align: center;">Cited by 129 in Google Scholar</p> <p style="text-align: center;">Cited by 55 in Google Scholar</p> <p style="text-align: center;">Cited by 50 in Google Scholar</p>
<p style="text-align: center;">N.K. Garg</p>	<ol style="list-style-type: none"> 1. H.P. Pandit, N.M. Shakya, H. Stole, N.K. Garg, Hydraulic and sediment removal performance of a modified hydrocyclone, Minerals Engineering, Volume 22, Issue 4, March 2009, Pages 412-414, ISSN 0892-6875. 2. Manika Gupta, N.K. Garg, Himanshu Joshi, M.P. Sharma, Persistence and mobility of 2,4-D in unsaturated soil zone under winter wheat crop in sub-tropical region of India, Agriculture, Ecosystems & Environment, Volume 146, Issue 1, 1 January 2012, Pages 60-72, ISSN 0167-8809 3. Gupta M, Garg NK, Joshi H, Sharma MP., Assessing the impact of irrigation treatments on thiram residual trends: Correspondence with numerical modeling and field-scale experiments, Environ Monit Assess. 2014 Mar; 186(3):1639-54. 	

<p style="text-align: center;">A.K. Gosain</p>	<ol style="list-style-type: none"> 1. K. P. Sudheer, A. K. Gosain, K. S. Ramasastri (2002) "A Data-Driven Algorithm for Constructing Artificial Neural Network Rainfall-Runoff Models", Hydrological Processes, 16(6), 1325 - 1330. 2. K. P. Sudheer, A. K. Gosain, K. S. Ramasastri (2003) "Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique", Journal of Irrigation and Drainage Engineering, ASCE, 129(3), 0733-9437. 3. K. P. Sudheer, A. K. Gosain, D. Mohana Rangan, S. M. Saheb (2002) "Modeling Evaporation Using an Artificial Neural Network Algorithm", Hydrological Processes, 16(16), 3189 - 3202. 	<p>Impact Factor: 2.5; 89 Citations in ResearchGate</p> <p>77 Citations in ResearchGate</p> <p>Impact Factor: 2.5; 44 Citations in ResearchGate</p>
<p style="text-align: center;">K.C. Iyer</p>	<ol style="list-style-type: none"> 1. Iyer, K.C. and Jha, K.N. (2005). Factors Affecting Cost Performance: Evidence from Indian Construction Projects. International Journal of Project Management, 23(4), Pp. 283-295. 2. Iyer, K.C. and Saggher M. (2005). Hierarchical Structuring of PPP Risks Using Interpretative Structural Modeling. ASCE Journal of Construction Engineering and Management. 136(2), Pp. 151-159. 3. Iyer, K.C., Chaphalkar, N.B. Joshi G.A. (2008). Understanding time delay disputes in construction contracts. International Journal of Project Management, 26(2), Pp. 174-184. 	<p>It was first of its kind and has large citations among all my papers. 96 citations.</p> <p>It was one of the first papers in PPP projects from India. 31 citations.</p> <p>It was first of its kind. It helped development of DSS for construction disputes. 22 citations.</p>

<p>A.K. Keshari</p>	<ol style="list-style-type: none"> <li data-bbox="225 159 1074 360">1. Manish Kumar, AL Ramanathan and Ashok K. Keshari (2008) Understanding the extent of interactions between groundwater and surface water through major ion chemistry and multivariate statistical techniques. Hydrological Processes, DOI: 10.1002/hyp.7149. <li data-bbox="225 725 1074 927">2. S.K. Ambast, Ashok K. Keshari and A. K. Gosain (2008) Estimating regional evapotranspiration using remote sensing: Application to Sone low level canal system, India. Journal of Irrigation and Drainage Engineering, ASCE, Vol. 134(1), 13-25. <li data-bbox="225 1449 1074 1606">3. Ashok K. Keshari, D. P. Satapathy and Amod Kumar (2010) The influence of vertical density and velocity distributions on snow avalanche runout. Annals of Glaciology, 51(54), 200-206. 	<p data-bbox="1098 159 1461 618">Development of methodological tool using principal component analysis for identifying hydrochemical facies groups which is very useful in prognosis/assessing linkages between streams and groundwater and its influence on water quality dynamics; Useful in water resources planning & management and pollution control measures; Published in internationally reputed Journal having Impact Factor of 2.49; High citation: 27</p> <p data-bbox="1098 663 1461 1357">Development of methodology to estimate actual evapotranspiration using satellite remote sensing - pixel wise as a raster data output and application to the Sone canal system to demonstrate the developed methodology; Useful in irrigation scheduling, identifying water stressed cropped areas, assessing crop production, and hydrological water balance; Published in internationally reputed Journal of American Society of Civil Engineers having Impact Factor of 1.02 and currently has citation of 3 for this paper, but its main part of the paper dealing with concepts and approach got published in the Irrigation and Drainage Journal which got citation of 35.</p> <p data-bbox="1098 1402 1461 2051">Development of density varying Non-Newtonian fluid model with a new snow rheology for understanding avalanche dynamics; Calibrated and validated with field based snow chute experiments carried out at high altitude in snowy catchment of Himalaya; Useful in avalanche control for military movement and civilian inhabitants, avalanche protection for infrastructure development in snowy mountainous areas; Brought Indian recognition in scientific community dominated by European countries - Switzerland and Norway; Published in internationally reputed Journal having Impact Factor of 1.80</p>
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A.K. Mittal	<ol style="list-style-type: none"> 1. N.S. Maurya, A.K. Mittal, P. Cornel, E. Rother; Biosorption of dyes using dead macro fungi: effect of dye structure, ionic strength and pH, <i>Bioresource Technology</i>, 97(3), 512-521, 2006. 2. A.K. Mittal, S.K. Gupta; Biosorption of cationic dyes by dead macro fungus <i>Fomitopsis carnea</i>: Batch studies, <i>Water Science and Technology</i> 34 (10), 81-87, 1996. 3. A. Agarwal, A. Singhmar, M. Kulshrestha, A.K. Mittal; Municipal solid waste recycling and associated markets in Delhi, India, <i>Resources, Conservation and Recycling</i>, 44(1), 73-90, 2005. 	<p>Google Citations = 178</p> <p>Google Citations = 101</p> <p>Google Citations = 84</p>
A. K. Nagpal	<ol style="list-style-type: none"> 4. Chaudhary, S., Pendharkar, U., and Nagpal, A. K. (2009). "Control of creep and shrinkage effects in steel concrete composite bridges with precast decks." <i>Journal of Bridge Engineering</i>, ASCE, 14(5), 336-345. 5. Chaudhary, S., Pendharkar, U., and Nagpal, A. K. (2007). "Hybrid procedure for cracking and time-dependent effects in composite frames at service load." <i>Journal of Structural Engineering</i>, ASCE, 133(2), 166-175. 6. Sharma, R. K., Maru, S., and Nagpal, A.K.(2004). "Simplified procedure for creep and shrinkage in reinforced concrete frames." <i>Journal of Structural Engineering</i>, ASCE, 130(10), 1545-1552. 	ASCE Journal Publications
A.K. Nema	<ol style="list-style-type: none"> 1. Chabukdhara M. and Nema A.K. (2012). Heavy Metals in Water, Sediments and Aquatic Macrophytes: A Case Study in River Hindon, India. <i>Journal of Hazardous, Toxic and Radioactive Waste</i>, ASCE, Vol. 16, pp. 273-281. 2. Singh R.K., Datta M. and Nema A.K. (2011). Factoring Site Age in Evaluation of Groundwater- Contamination Hazard Rating of Abandoned Municipal Solid-Waste Landfill Sites. <i>Journal of Environmental Engineering</i>, ASCE, Vol. 137, No. 11, pp. 1092-1098. 3. Srivastava A.K. and Nema A.K. (2011). Fuzzy Parametric Programming Model for Integrated Solid Waste Management under Uncertainty. <i>Journal of Environmental Engineering</i>, ASCE, Vol. 131, No. 1, 69-73. 	ASCE Journal Publications.

M. Khare	<ol style="list-style-type: none"> 1. Radha Goyal and Mukesh Khare (2009), “Indoor-Outdoor Concentrations of RSPM in Classroom of a Naturally Ventilated School Building near an Urban Traffic Roadway”, Atmospheric Environment, vol. 43 (38), pp 6026-6038. 2. Kulshrestha Priyanka, Khare Mukesh and Seetharaman Premavathy (2008), “Indoor Air Quality Assessment in and around the Urban Slums of Delhi City, India”, J. Indoor Air, Vol. 18 (6), pp 488-99, Blackwell, UK 3. Suresh Jain and Mukesh Khare (2008), “Urban Air Quality in Mega Cities: A Case Study of Delhi City using Vulnerability Analysis”, J. Environmental Monitoring & Assessment, Vol. 136 1-3), Springer. 	<p>33 citations</p> <p>14 citations</p> <p>12 citations</p>
A. Madan	<ol style="list-style-type: none"> 1. Madan, A; Reinhorn, AM; Mander, JB, Modeling of masonry infill panels for structural analysis, Journal of Structural Engineering, ASCE, Volume: 123 Issue: 10 Pages: 1295-1302 Published: Oct 1997 2. Madan, A Vibration control of building structures using self-organizing and self-learning neural networks, Journal of Sound and Vibration, Volume: 287 Issue: 4-5 Pages: 759-784 Published: Nov 4 2005 3. Das, U; Morrison, S; Centurioni, E; Madan A, Thin film silicon materials and solar cells grown by pulsed PECVD technique, IEE Proceedings-Circuits Devices and Systems, Volume: 150 Issue: 4 Pages: 282-286 Published: Aug 2003 	<p>Times Cited: 45</p> <p>Times Cited: 26</p> <p>Times Cited: 14</p>
S. Mathur	<ol style="list-style-type: none"> 1. Modeling water uptake by plant roots, Journal of irrigation and drainage engineering 125 (3), 159-165, 1999. 2. Soil moisture dynamics modeling considering the root compensation mechanism for water uptake by plants, 14(9), 913-922, 1999, Journal of Hydrologic Engineering. 3. Modeling heavy metal (cadmium) uptake by soil-plant root system. 120 (1), 89-96, 1994, Journal of irrigation and drainage engineering. 	<p>Maximum cited paper because this was one of the first available numerical model</p> <p>Highly cited paper, took into account root mechanism in numerical model</p> <p>1st available numerical model to predict heavy metal uptake by plants</p>

K.S. Rao	<ol style="list-style-type: none"> 1. Tiwari, R.P. and Rao, K.S. (2008), "Response of an Anisotropic Rock Mass Under Polyaxial Stress State", <i>J. Materials in Civil Engineering</i>, ASCE, vol. 19, No. 5, pp. 393-403. 2. Rathod, G.W. and Rao, K.S. (2012), "Finite Element and Reliability Analyses for Slope Stability of Subansri Lower Hydroelectric Project: A Case Study", <i>Journal of Geotechnical and Geological Engineering</i> (Springer), vol. 30(1), pp. 233-252. 3. Shrivastava, A.K. and Rao, K. S. (2013) "Development of a Large-Scale Direct Shear Testing Machine for Unfilled and Infilled Rock Joints Under Constant Normal Stiffness Conditions", <i>Geotechnical Testing Journal</i>, ASTM International, vol. 36(5), pp. 670-679 	
J.T. Shahu	<ol style="list-style-type: none"> 1. Patra, S, and Shahu, J.T. (2012). Pasternak model for oblique pullout of inextensible reinforcement", <i>Journal of Geotechnical and Geoenvironmental Engineering</i>, ASCE, 138(12), pp. 1503-1513. 2. Shahu, J.T. and Reddy, Y.R. (2011), "Clayey soil reinforced with stone column group: model tests and analysis." <i>Journal of Geotechnical and Geoenvironmental Engineering</i>, ASCE. 137 (12), December. pp. 1265-74. 3. Shahu, J.T. and Hayashi, S. (2009), "Analysis of extensible reinforcement subject to oblique pull." <i>Journal of Geotechnical and Geoenvironmental Engineering</i>, ASCE. Vol. 135, No. 5, May, pp. 623-634. 	
K.G. Sharma	<ol style="list-style-type: none"> 1. Rakesh Kumar, Sharma, K.G. and Varadarajan, A. (2010). "Post-peak response of some metamorphic rocks of India under high confining pressures", <i>Int. J. Rock Mech. Min. Sci.</i>, Vol. 47, pp. 1357-1362. 2. Usmani, A., Ramana, G.V. and Sharma, K.G. (2011). "Experimental evaluation of shear-strength behavior of Delhi silt under static loading conditions", <i>J. of Materials in Civil Engg.</i> ASCE, Vol. 23, No. 5, pp. 533-541. 3. Ali, Kausar, Shahu, J.T. and Sharma, K.G. (2012). "Model tests on geosynthetic reinforced stone columns: A comparative study", <i>Geosynthetics International</i>, Vo. 19, No. 4 (August), pp. 292-305. 	

<p>G. Tiwari</p>	<ol style="list-style-type: none"> 1. J Woodcock, P Edwards, C Tonne, BG Armstrong, O Ashiru, D Banister, , 2009, Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport The Lancet 374 (9705), 1930-1943 2. AK Sen, G Tiwari, V Upadhyay, 2010, Estimating marginal external costs of transport in Delhi, Transport Policy 17 (1), 27-37 3. M Thynell, D Mohan, G Tiwari, 2010, Sustainable transport and the modernization of urban transport in Delhi and Stockholm Cities 27 (6), 421-429 	
<p>R. Ayothiraman</p>	<ol style="list-style-type: none"> 1. Ayothiraman, R. and Reddy, K. M. 2012. Experimental studies on behavior of single pile under combined uplift and lateral loads. 37th Annual Conference on Deep Foundations, October 16-19, 2012, Houston, TX. 2. Pillai, R. R. and Ayothiraman R. 2012. An innovative technique of improving the soil using human hair fibers. Third International Conference on Construction in Developing Countries (ICCIDC-III), Bangkok, Thailand, 428-434. 3. Ayothiraman, R. and Chandra Prakash, G. Pile diameter effect on bending behavior of piles in clay under earthquake loads. Geotechnical Special Publication No.: 205, ASCE, 2010, 119 - 128. 	<p>(last 5 years)</p> <p>Ph.D student work: reviewers rated the originality of the concept in the paper as very good/excellent.</p> <p>M.Tech student work: innovative technique for soil stabilization</p> <p>M.Tech Student work: Proposed an equation for estimating the depth of fixity of pile under earthquake loads.</p>
<p>G.S. Benipal</p>	<ol style="list-style-type: none"> 1. Pandey, Umesh K. and Benipal, Gurmail S. Bilinear Elastodynamical Models of Cracked Concrete Beams, Structural Engineering and Mechanics, Vol. 39, No. 4, 2011, pp. 465-498 2. Raveendra Babu, R., Benipal, Gurmail S. and Singh, Arvind K. Constitutive Model for Bimodular Elastic Damage of Concrete Latin American J. of Solids and Structures, Vol. 7, No. 2, 2010, pp. 143-166 3. Suter, Milan and Benipal, Gurmail S., Constitutive Model for Aging Thermoviscoelasticity of Reacting Concrete I: Theoretical Formulation Mechanics of Time-Dependent Materials Vol. 14, No 3, 2010, pp. 277-290 II: Results and Discussion Mechanics of Time-Dependent Materials Vol. 14, No 3, 2010, pp. 291-305 	

<p style="text-align: center;">S. Bhalla</p>	<ol style="list-style-type: none"> 1. Bhalla, S., Gupta, A., Bansal, S. and Garg, T. (2009), “Ultra Low Cost Adaptations of Electro-Mechanical Impedance Technique for Structural Health Monitoring”, Journal of Intelligent Material Systems and Structures, Vol. 20, No. 8 (May), pp. 991-999. DOI: 10.1177/ 1045389X08100384 2. Bhalla, S., Vittal, A. P. R and Veljkovic, M. (2012), “Piezo-Impedance Transducers for Residual Fatigue Life Assessment of Bolted Steel Joints”, Structural Health Monitoring, An International Journal, Vol. 11, No 6 (Nov), pp. 733-750. DOI: 10.1177/1475921712458708 3. Moharana, S. and Bhalla, S. (2014), “A Continuum Based Modeling Approach for Adhesively Bonded Piezo-Transducers for EMI Technique” International Journal of Solids and Structures, Vol. 51, No. 6 (Mar), pp. 1299-1310. DOI: 10.1016/ j.ijsolstr.2013.12.022 	<p>This paper was a significant experimental breakthrough in low-cost structural health monitoring)</p> <p>This paper presents a new effective approach to monitor fatigue induced damage</p> <p>This paper is presents an improved modeling approach useful for structural health monitoring</p>
<p style="text-align: center;">R.R. Kalaga</p>	<ol style="list-style-type: none"> 1. Ch. Mallikarjuna and K. RamachandraRao, Heterogeneous Traffic Modeling: A Complete Methodology”, Transportmetrica, Vol. 7, No. 5, pp 321-345, 2011. 2. A. Mohan Rao and K. RamachandraRao, “Measuring Urban Traffic Congestion - A Review”, International Journal for Traffic and Transport Engineering, Vol. 2, No. 4, pp 286-305, 2012 3. Ch. Mallikarjuna and K. RamachandraRao, Cellular Automata model for Heterogeneous Traffic”, Journal of Advanced Transportation, Vol. 43, No. 3, pp 321-345, 2009 	<p>This method presents a comprehensive modeling paradigm for the urban mid-block heterogeneous traffic using Cellular Automata methodology - which is quite unique at that point of time</p> <p>This work presents an overview of urban traffic congestion measurements</p> <p>This is the first paper to identify the new traffic flow characteristic and a methodology for heterogeneous traffic</p>

<p style="text-align: center;">D.R. Kaushal</p>	<ol style="list-style-type: none"> 1. Kaushal, D.R. and Tomita, Y. (2002), Solids Concentration Profiles and Pressure Drop in Pipeline Flow of Multisized Particulate Slurries, International Journal of Multiphase Flow, Elsevier Publications, Volume 28, Issue 10, October 2002, pp 1697-1717. 2. Kaushal, D.R., Sato, K., Toyota, T., Funatsu, K. and Tomita, Y. (2005), Effect of particle size distribution on pressure drop and concentration profile in pipeline flow of highly concentrated slurry, International Journal of Multiphase Flow, Elsevier Publications, Volume 31, Issue 7, July 2005, pp. 809-823. 3. Kaushal, D.R., Tomita, Y. and Dighade, R.R. (2002), Concentration at the Pipe Bottom at Deposition Velocity for Transportation of Commercial Slurries through Pipeline, Powder Technology, An International Journal, Elsevier Publications, Volume 125, Issue 1, May 2002, pp 89-101. 	<p>2011 JCR Impact Factor: 2.23, Web of Science Citations: 41</p> <p>2011 JCR Impact Factor: 2.23, Web of Science Citations: 28) (rated 6th among top 25 papers by Elsevier</p> <p>2011 JCR Impact Factor: 2.08, Web of Science Citations: 28</p>
<p style="text-align: center;">V. Matsagar</p>	<ol style="list-style-type: none"> 1. Manmohan Dass Goel, Marco Peroni, George Solomos, Dehi Pada Mondal, Vasant A. Matsagar, Anil K. Gupta, Martin Larcher and Steffen Marburg, "Dynamic Compression Behavior of Cenosphere Aluminum Alloy Syntactic Foam", Materials and Design, Volume 42, 2012 pp: 418 - 423. 2. M. D. Goel, Vasant A. Matsagar, Steffen Marburg and Anil K. Gupta, "Comparative Performance of Stiffened Sandwich Foam Panels under Impulsive Loading ", Journal of Performance of Constructed Facilities, American Society of Civil Engineers (ASCE), Volume 23, No. 5, 2013, pp: 540-549. 3. Influence of isolator characteristics on the response of base-isolated structures, VA Matsagar, RS Jangid, Engineering structures, 26(12), 1735-1749, 2004. 	<p>In new high-strain rate characterization area in IITD stint, paper from international collaboration work in three countries, in an Elsevier journal having Web of Science (SCI) impact factor of 2.913 (2012), already cited 6 times in Google Scholar.</p> <p>In new blast engineering area in IITD stint, paper from international collaborative work, in American Society of Civil Engineers (ASCE) journal having Web of Science (SCI) impact factor of 0.45 (2012), already cited once in Google Scholar.</p> <p>79 citations, highest from papers published earlier to IITD stint.</p>

S. Bishnoi	<ol style="list-style-type: none"> 1. Thomas J.J., Biernacki J.J., Bullard J.W., Bishnoi S., Dolado J.S., Scherer G.W. and Luttge A., "Modeling and simulation of cement hydration kinetics and microstructure development", Cement and Concrete Research, Vol. 41(12), pp. 1257-1278, 2011 2. Bishnoi S., "Geometric Limitations of Nucleation and Growth Models: Revisiting the Impingement Assumption", Cement and Concrete Research, Vol. 46, pp. 30-40, 2013 3. Do Q.H., Bishnoi S. and Scrivener K.L., "Numerical simulation of porosity in cements", Transport in Porous Media, Vol. 99, pp. 101-117, 2013 	<p>Received 46 citations. Required special effort in bringing together the top names in the area in a single article.</p> <p>This article shows that a widely accepted hypothesis does not work for cements.</p> <p>This article uses some of the most advanced computational techniques in the area.</p>
T. Chakraborty	<ol style="list-style-type: none"> 1. Tanusree Chakraborty, Rodrigo Salgado, Prasenjit Basu, Monica Prezzi, 2012. Shaft capacity of drilled shafts in clay. Journal of Geotechnical and Geoenvironmental Engineering, ASCE, 139(4): 548-563. 2. William Higgins, Tanusree Chakraborty, Dipanjan Basu, 2012. A high strain-rate constitutive model for sand and its application in finite element analysis of tunnels subjected to blast. International Journal for Numerical and Analytical Methods in Geomechanics, 37(15): 2590-2610. 3. Tanusree Chakraborty, Rodrigo Salgado, 2009. Dilatancy and shear strength of sand at low confining pressures. Journal of Geotechnical and Geoenvironmental Engineering, ASCE, 136(3): 527-532. 	
Dhanya C.T.	<ol style="list-style-type: none"> 1. C.T. Dhanya and D. Nagesh Kumar (2009), Data Mining for Evolution of Association Rules for Droughts and Floods in India using Climate Inputs, Journal of Geophysical Research -Atmospheres, American Geophysical Union, vol. 114, D02102 2. C.T. Dhanya and D. Nagesh Kumar (2010), Nonlinear Ensemble Prediction of a Chaotic Daily Rainfall, Advances in Water Resources, Elsevier, vol. 33, no. 3, pp. 327-347. 3. C.T. Dhanya and D. Nagesh Kumar (2011), Predictive uncertainty of chaotic daily stream flow using wavelet networks, Water Resources Research, doi: 10.1029/2010WR010173 	<p>Citations : 14</p> <p>Citations : 5</p> <p>Citations : 5</p>

<p style="text-align: center;">A. Ganguli</p>	<ol style="list-style-type: none"> 1. A. Ganguli, A. Deraemaekar, A. Preumont, Regenerative chatter reduction by active damping control, <i>Journal of Sound and Vibration</i>, vol 300, 2007. 2. A. Ganguli, A. Deraemaekar, I. Romanescu, M. Horodincea, A. Preumont. Simulation and active control of chatter in milling via a mechatronic simulator, <i>Journal of Vibration and Control</i>, vol. 12(8), 817-848, 2006. 3. A. Ganguli, C. M. Rappaport, D. Abramo, S. Wadia-Fascetti, Synthetic Aperture Imaging for Flaw Detection in a Concrete Medium, <i>NDT&E International</i>, vol 45, no. 1, 2012. 	
<p style="text-align: center;">Arun Kumar</p>	<ol style="list-style-type: none"> 1. Kumar, A. and I. Xagorarakis. "Pharmaceuticals, Personal Care Products and Endocrine-disrupting Chemicals in U.S. Surface and Finished Drinking Waters: A Proposed Ranking System". <i>Sci. Tot. Environ.</i> (doi:10.1016/j.scitotenv.2010.08.048)(2010). 2. Kumar, A. and I. Xagorarakis. "Human Health Risk Assessment of Pharmaceuticals in Water: An Uncertainty Analysis for Meprobamate, Carbamazepine, and Phenytoin". <i>Regul. Toxicol. Pharmacol.</i>, 57: 146-156 (2010). 3. Kumar, A. "Making a Case for Human Health Risk-based Ranking Nanoparticles in Water for Monitoring Purposes". <i>Environ. Sci. Technol. Viewpoint</i>. DOI: 10.1021/es301507j (2012) 	
<p style="text-align: center;">B. Manna</p>	<ol style="list-style-type: none"> 1. Manna, B., and Baidya, D. K. (2009), Vertical Vibration of Full-Scale Pile - an Analytical and Experimental Study, <i>Journal of Geotechnical and Geoenvironmental Engineering</i>, ASCE, Vol. 135, No. 10, pp. 1452 - 1461. 2. Manna, B., and Baidya, D. K. (2010), Nonlinear Dynamic Response of Piles under Horizontal Excitation, <i>Journal of Geotechnical and Geoenvironmental Engineering</i>, ASCE, Vol. 136, No. 12, pp. 1600 - 1609. 3. Manna, B., and Baidya, D. K. (2012), Effect of Horizontal Excitation acting at Different Location of Pile Cap-Loading System on the Nonlinear Coupled Response of Pile Foundations, <i>Geotechnical Testing Journal</i>, ASTM International, USA, Vol. 35, Issue 6, pp. 1 -15. 	

D.R. Sahoo	<ol style="list-style-type: none"> 1. Sahoo, D. R., and Rai, D. C., (2013), "Design and evaluation of seismic strengthening techniques for RC buildings with soft-story", <i>Engineering Structures</i>, 56(11):1933-1944. 2. Chao, S. -H., Karki, N. B., and Sahoo, D. R.,(2013), "Seismic Behavior of Steel Buildings with Hybrid Braced Frames", <i>Journal of Structural Engineering (ASCE)</i>, 139(6):1019-1032. 3. Sahoo, D. R., and Chao, S. -H., (2010), "Performance-based Plastic Design of Buckling-restrained Braced Frames", <i>Engineering Structures</i>, Vol. 32, No. 9, pp. 2950-2958 	
A.K. Swamy	<ol style="list-style-type: none"> 1. Swamy, A.K., and Daniel, J.S. Evaluating the Effect of Mode of Loading on Viscoelastic and Damage Properties of Asphalt Concrete." <i>Transportation Research Record</i>. 2296(1), 144-152, 2012. 2. Swamy, A.K., Mitchell, L.F., Hall, S.J., and Daniel, J.S. "The Impact of RAP on the Volumetric, Stiffness, Strength and Low Temperature Properties of HMA." <i>Journal of Materials in Civil Engineering</i>, ASCE, 23(11), 1490-1497, 2011. 3. Bhattacharjee, S., Swamy, A.K., and Daniel, J. S. "Application of the Elastic-Viscoelastic Correspondence Principle to Determine the Fatigue Endurance Limit of Hot Mix Asphalt." <i>Transportation Research Record</i>. 2126(1), 12-18, 2009. 	

3.7 Average citation per faculty

Average citation per faculty: $7,893 / 42 = 190$ (approx.)

3.8 Changes, modifications, etc. done to improve the quality of (i) M.Tech, and (ii) Ph.D graduates

The M.Tech and Ph.D programs are modified and improved over time through regular curriculum reviews. New courses and laboratories which provide in-depth and specialized knowledge in areas of special interest are introduced over time. Primary attention is given to the new relevant areas of research as per research vision of the Department.

3.9 Sponsored research projects

Because of the proficiency of the department in civil engineering, various government divisions, public sector units (PSUs) and industries in the private sector have provided funding to the learned faculty for undertaking research works in frontier areas of civil engineering. These sponsored research projects help in developing new design methods, technologies, software and innovative products for the industry. The funds so received enable setting up of new laboratories in the department. The sponsoring agencies include, among

others, Ministry of Human Resource Development (MHRD), Ministry of Water Resources, Ministry of Environment and Forests, Ministry of Earth Sciences, Ministry of Science and Technology, CSIR, ONGC, EIL, CWC etc. The summary of research projects is presented in the table given below.

Details of sponsored projects for the period 2008 - 2013 are given in *Annexure-5*.

Summary of Research Projects

Financial Year	IRD Research Projects		FITT Research Projects	
	No. of Projects	Total Value (in Crores)	No. of Projects	Total Value (in Crores)
2008-2009	6	1.73	8	2.67
2009-2010	5	6.67	13	4.67
2010-2011	8	3.12	4	1.55
2011-2012	18	2.98	9	0.86
2012-2013	15	5.01	9	1.22
Total	52	17.78	43	10.97

Total research projects = 95

Total value = 28.75 Crores

Details of Breakup of PI and/or Co-PI of Research Projects

Sponsored Projects			
Individually	With another faculty of the group/ section of the department	With another faculty of the department but from another group/ section of the department	With another faculty of another dept./ center
24	44	6	3

3.10 Industry consultancies

Complex design, construction and maintenance problems of the infrastructure sector are resolved through the intervention of the expert faculty of the Civil Engineering Department. The consultancy projects are undertaken for problems of special nature for arriving at practical solutions. Proof checking of design works are also undertaken to ensure flawless design and safety of the projects. To name a few organizations which took consultancy services on various projects from the department include DDA, DJB, NDMC, MCD, Northern Railways, NTPC, BSES, Power Grid Corporation, Unitech, Grasim, L&T, IOCL, IRCON, RITES, RVNL and others.

Financial Year	IRD Consultancy Projects	
	No. of Projects	Total Value (in Crores)
2008-2009	461	16.38
2009-2010	446	15.71
2010-2011	341	17.57
2011-2012	296	14.47
2012-2013	326	19.11
Total	1,870	83.24

3.11 New areas of research (other than Ph.D area of faculty)

Faculty name	New areas of research other than their Ph.D thesis area
A.K. Jain	Earthquake engineering; Wind engineering.
B.J. Alappat	Pollution potential of landfills, Environmental forensics, Regeneration of spent adsorbents, Chemical looping combustion.
B. Bhattacharjee	Microstructure studies on concrete and development of relationship of microstructure to properties at macro level; Corrosion of rebar embedded in concrete and service life prediction; Application of Genetic algorithm in optimal thermal design of building; Material research of concrete with pozzolana addition; Application of Fuzzy mathematic in decision making related to repair; Wetting and drying of concrete: Modeling and application to service life prediction in tropical climate.
B.R. Chahar	Analytical solutions to seepage and subsurface drainage problems, Groundwater Modeling.
Manoj Datta	Environmental Geotechnics, Landfills, Ash Ponds.
T.K. Datta	Earthquake Engineering, Wind Engineering, Offshore Dynamics, Structural Control.
N.K. Garg	Terrain and watershed modeling; Integrated irrigation and management models; sediment handling for turbines; geo-environmental pollution; sustainable development of water resources of India.
A.K. Gosain	Integrated Watershed Modeling, GIS, Irrigation Management, Climate Change, Environmental Impact Assessment.
Ashok Gupta	Online health monitoring; earthquake engineering; e-learning.
K.C. Iyer	Construction Project Management; and Infrastructure Development Issues and their Management in the areas of Time and Cost Management, Financial Management, Risk Management, Strategy Management; Building Information Modeling; Information and Communication Technology in Construction.
A.K. Keshari	Remote Sensing & GIS; Rainwater Harvesting and Water & Wastewater Management; Environmental Impact Assessment & Sustainable Development; Snow Hydrology & Avalanche Dynamics.
M. Khare	Indoor air quality monitoring and modeling, Sustainability index of the growing cit. Indoor Air quality: This is a new area of Research

	Undersigned. The research is mainly targeted towards developing of a protocol for indoor air quality monitoring and modeling in collaboration with central pollution control board, New Delhi. Sustainable Coefficients for Growing Cities: This area of research is targeted towards investigating the impact of land use changes on environmental components. The main emphasis is to develop a protocol for sustainability measurements in growing cities.
A. Madan	Active and semi-active control; Artificial intelligence in structural control; Computing in Civil Engineering.
S. Mathur	Phytoremediation of soils, Bioremediation of soils, Settlement and gas generation in MSW landfills, Optimization and uncertainty analysis in groundwater management problems, Permeable reactive barriers.
A.K. Mittal	Environmental Management in Construction Projects.
A.K. Nagpal	Tall Buildings, Bridges, Earthquake Engineering.
A.K. Nema	Integrated Waste Management, Environmental Impact Assessment.
G.V. Ramana	Currently pursuing experimental research where as my Ph.D was numerical analysis. Pursuing research in waste material characterization and soil dynamics.
K.S. Rao	Shear strength behavior of Jointed rocks under CNL and CNS loads; Physico-Mechanical Behavior of Oil Shales; Static and Dynamic Stability of Natural Slopes and Landslides; Seismic Hazard Analysis and Microzonation of Mega cities; Geotechnical Characterization and Stability of Coal Mine Dumps; Analysis of Underground Structures under Blast Loads; Geological and Hydrogeological Influences on Underground Structures in Himalayas.
J.T. Shahu	Ground Improvement, Soil Reinforced Structures, Waste Utilization.
K.G. Sharma	Modeling of Geomaterials: Testing and modeling of materials like rockfill, Delhi silt, Yamuna sand, rock materials including post peak softening. Analysis of Dams and Underground Structures: Numerical analysis of dams founded on jointed rocks, rocks with shear seams, Numerical analysis of tunnels, Metro tunnels, underground powerhouses. Railway Tracks on Compacted Subgrade: Model testing, numerical modeling of the tracks.
G. Tiwari	Traffic Safety including highway safety , highway work zone safety, pedestrian safety, Design of bicycle, pedestrian and public transport facilities, Environment and health impact of transport systems.
R. Ayothiraman	Deep excavations and tunneling in soils, ground improvement, Solid waste utilization in geotechnical engineering.
G.S. Benipal	Constitutive Modeling: Damage Elastoplasticity and Chemoviscoelasticity of Concrete; Nonlinear Dynamics and Stability of Concrete Structures; Nonlinear Dynamics of Cables.
S. Bhalla	Bio-Mechanics, Engineered Bamboo Structures.
S.K. Deb	Sustainable development; Image processing; Application of sensors.
K.N. Jha	Schedule Cost, Quality and Safety.
R.R. Kalaga	Heterogeneous Traffic flow modeling; Road Safety; Low carbon

	mobility.
D.R. Kaushal	Hydrodynamic modeling of drainage systems of big cities; CFD modeling of desilting hydraulic structures; Morphological studies of rivers.
R. Khosa	Conflict Resolution and Hydrologic Modeling of Large River Basin.
V. Matsagar	Blast Engineering; Fire Engineering; Wind Engineering; Bridge Engineering; Fiber Reinforced Concrete (FRC); Carbon Fiber Reinforced Polymers (CFRP); Uncertainty/ Chaos Assessment; Construction Management: Design; Structure Matrix and Shoring/ Reshoring in Tall Buildings.
S. Bishnoi	Supplementary cementitious materials, sustainability, durability and repair of concrete structures.
S. Chakma	Bioreactor Landfill, Infiltration Characteristics of Different Vegetation and Landuse.
T. Chakraborty	Analysis of geothermal piles in soil: The main objective of the research is to investigate the load transfer mechanism and soil-structure interaction of energy piles through finite element analysis procedure. Characterization of soil and rock under high loading rate in SHPB test: Development of split Hopkinson pressure bar (SHPB) setup, SHPB tests on soil, rock and to develop high strain rate constitutive models for soils and rocks. Analysis of structures subjected to blast loading: Finite element analysis of underground tunnels and protective structures under blast loading, proposition of blast resistant design specifications. Analysis of offshore wind turbines and Analysis of CAES storage caverns: Finite element analysis of offshore wind turbine foundations and compressed wind energy storage caverns.
Dhanya C.T.	Impact of climate change in water resources; Regional climate modeling; Water quality modeling.
A. Ganguli	Solid Mechanics, Wave Propagation, NDT.
Gazala Habib	Source Apportionment, Climate.
S. Gupta	Utilization of Marble and Granite Powder as Green Building Materials in Concrete; Bamcrete wall panel; Implications of Cement and Fly Ash Limits in Indian Standards and Practices Thereof; Durability Properties of Concrete.
Arun Kumar	Nanoparticles exposure-related risk assessment.
Uma J. Maheswari	Design Management; Matrix-based Design Tools. Automation in Design and Construction.
B. Manna	Seismic Response and Deformation Characteristics of Nailed Soil Slopes - Shaking Table Testing and Analysis : Prediction of failure pattern of nailed soil slope and distribution of nail forces for various slope angles under different peak ground accelerations using Shaking Table test and finite element analysis. Dynamic Response of Pile Foundations in Nonlinear Soil Media with Non-Reflective Boundary under Vertical Excitation of Rotating Machine: Development of a new model of the boundary zone with a non-reflective boundary to compute

	the impedances of soil-pile system considering different boundary zone parameters.
D.R. Sahoo	Performance-based plastic design; Hybrid metallic damping devices; Fiber-reinforced concrete (FRC); Derailing of beam-column joints with FRC.
A.K. Swamy	Rheology; Airport engineering and systems; Optimization issues in pavement engineering.

Methodology for (i) identifying obsolescence in research areas, and (ii) identification of new areas for future research.

(i) Identifying obsolescence in research areas:

This is undertaken periodically by conducting interaction with the research organizations and academia, industry, both national and international levels.

(ii) Identification of new areas for future research:

New areas are identified based on the societal requirements, emerging trends and demands and individual interests of the faculty and following the vision of the Department.

3.12 Interdisciplinary projects

Summary of year-wise large interdisciplinary projects is given below. Details of some the projects are given in *Annexure-6*.

	Year-wise				
	2008-09	2009-10	2010-11	2011-12	2012-13
Within department	8	5	8	6	6
Across the Inst.	4	2	7	5	3

Section-4

Innovation, Design and Development

4. Innovation, Design and Development

4.1 New courses developed

Prof. B. Bhattacharjee	CEL867: Sustainable Materials in Green Building
Prof. K.C. Iyer	CEL338: Infrastructure Planning and Management
	CEL866: Infrastructure Development and Management
Dr. Suresh Bhalla	CEL836: Structural Health Monitoring
Dr. Gazala Habib	CEL887: Aerosol
Dr. K. N. Jha	CEL780: Formwork for Concrete Structures
Dr. Aravind K. Swamy	CEL846: Airport Planning and Design
	CEL847: Viscoelastic Behavior of Bituminous Materials
	CEL848: Transportation Infrastructure Management

4.2 Students who have been funded - No. of students who have been funded for innovating (TePP, PRISM, etc.).

- 1 group of 7 students in TBIU (Technology Business Incubation Unit, IIT Delhi)
- 1 group of 5 students in TBIU (Technology Business Incubation Unit, IIT Delhi)
- 4 individual students under four different Technopreneur Promotion Program (TePP) projects
- 1 student under Ministry of Micro, Small and Medium Enterprises (MSME) scheme

4.3 Technology developed (*give list and brief information*).

Prof. A.K. Keshari	<ol style="list-style-type: none"> 1. Potable roof top rainwater harvesting system 2. Wastewater management for zero liquid discharge 3. Construction dewatering design
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Prof. K. S. Rao	<p>1. Designed and developed two major equipment to test the jointed rock mass under polyaxial stress state ($\sigma_1, \sigma_2, \sigma_3$) and to assess shear strength behavior under constant normal stiffness and constant normal load conditions were designed and fabricated.</p> <p>(i) Poly-axial testing facility (ii) Large scale direct shear machine</p> <p>2. Seismic Microzonation Studies: Seismic microzonation studies are very important mitigation measure to minimize losses due to future earthquakes. Major studies for the last 11 years have been conducted for the following regions and produced valuable resource for the country.</p> <p>(i) NCR of Delhi (ii) Ahmedabad (iii) Surat</p> <p>3. Professional expertise has been provided to solve the major problems to several hydel, tunnel and slope projects. The most significant projects are as follows:</p> <p>(i) Static and Dynamic Stability of Chenab and Anjikhad Bridge Abutments for Railways. (ii) Stability Analysis and Support Measures for Subansri Hydel Project. (iii) Stability Assessment of Chuzachen Head Race Tunnel. (iv) Foundation Treatment Procedure for Singoli-Batwara Hydel Project. (v) Pier Foundations on rock for Rani Jhansibai Flyover.</p>
Dr. Supratic Gupta	<p>1. Bamcrete wall 2. Use of marble and granite powder in concrete</p>
Dr. Vasant Matsagar	<p>1. Sacrificial blast wall/ layer using syntactic foam materials 2. Oblate spheroid base isolator (Patent filed)</p>

4.4 Technology transferred (*give list and brief information*).

- A low-cost dynamic force measurement system (Dr. Suresh Bhalla)
- Sacrificial blast wall/ layer using syntactic foam materials technology to defense setup (Dr. Vasant Matsagar)

4.5 Patents filed and patent granted as a fraction of patents filed.

Basu, S. and Prof. Chahar, B. R.: "A Method and System for Ground Pollution Free and Minimum Oil Burning Oil Storage Tank Farm." Application No PCT/IN2012/000090, Filed on Feb 10, 2012 with priority date Feb 10, 2011, International Bureau of WIPO, Geneva. International Publication Date August 16, 2012; International Publication Number WO 2012/107938 A2.

Basu, S. and Prof. Chahar, B. R.: "A Method and System for Ground Pollution Free and Minimum Oil Burning Oil Storage Tank Farm." Application No 345/DEL/2011, Filed on Feb 10, 2011 with CBR No 1294, Indian Patent Office. Publication Date 23/11/2012, Journal No. - 47/2012.

Prof. A. Madan and Dr. S. Bhalla: A new hybrid passive energy dissipation device for multi-purpose vibration control of tall buildings.

Dr. S. Bhalla and Prof. A. Gupta: A low cost piezo-composite vibration sensor for health monitoring of concrete structures.

Dr. Vasant Matsagar, Naseef Ummer, Aruna Rawat: Oblate spheroid base isolator.

4.6 Innovations of products, processes, designs etc. in the Department.

The Department has been involved in variety of sponsored research and consultancy projects. In general, these projects are funded by various Govt. ministries, public sector companies and private entities. Typically these projects involve development of new design methods, technologies, software and innovative designs that are useful to industry and general public. (this applies to items 4.2 through 4.5). Over the past five years, the Department has undertaken 95 major sponsored research projects worth approximately 28.75 Crores. During the same time, the Department has undertaken several consultancy projects approximately 83.24 Crores.

4.7 Facilitating infrastructure for student's innovation - Availability and access to students' workshops, "tinkering laboratories" so that they may pursue their own ideas.

The Department houses 24 laboratories (among 5 sections) that are used for conducting research and teaching UG/PG students. Laboratory space accounts for about three-fourth of the Department area. The facilities available for students range from latest software's to state-of-the-art experimental facilities. These facilities are freely accessible to students during regular office hours. Also, these facilities are made available to students beyond office hours on case-to-case basis (with consent of concerned student advisor and lab-in-charge). Ph.D students are permitted to work beyond office hours.

As such students are exposed to various experimental facilities through laboratory component in curriculum. Also, students are allowed to use any facility available with the Department for their project requirements. This includes (i) mini-project, and final year project (for B.Tech students), and (ii) research projects (for M.Tech, M.S, Ph.D students).

4.8 Students/teams who have competed in national / international competitions, and outcome.

Faculty Mentor	Details
Prof. B. Bhattacharjee	Adjudged for best paper in Proceedings of the 5 th Asia and Pacific Young Researchers and Graduates Symposium on Current Challenges in Structural Engineering (YRGS 2013). Kaustav Sarkar and B. Bhattacharjee. Analysis of Moisture Ingress in Concrete Subjected to Rainfall Exposure in a Composite Tropical Climate. (2013)
Prof. Mukesh Khare	Best Volunteer Award for NSS (Sumanth Chinthala) (2011-12)
	Best Poster Award "Indoor Air Quality: Monitoring, Modeling and Mitigation Strategies" at IIT Madras (Praveen Babu) (2012-13)
Prof. A. K. Keshari	Hem Prabha - S N Gupta Prize for the best paper by The Institution of Engineers (India) Poonam Binjolkar, Ph.D Student (2008)
Prof. K. S. Rao	IGS-AFCONS Biennial Award for Best Research Paper "3D Stability Analysis of Chenab Bridge Abutments", by A. Varughese, G.W. Rathod and K.S. Rao (2012)
	IGS-H.C.Verma Diamond Jubilee Award for Innovative instrumentation Award "Design and Development of Large Scale Direct Shear Testing Machine for Rock mass under CNL and CNS Conditions" by A.K. Shrivastava, Jattinder Singh, K.S. Rao (2012)
Prof. J. T. Shahu	Best paper award in International Conference on "Ground Improvement and Ground Control (ICGI 2012)" sponsored by "Australian Research Council's Centre of Excellence for Geotechnical Engineering". (L.S. Sowmiya) (2012)
	Best paper award in Third Indian Young Geotechnical Engineers Conference (3IYGEC 2011), New Delhi. (L.S. Sowmiya) (2011)
	Received the student paper award in Geosynthetics India 2011 Conference, held at IIT Madras from 23 to 24 September 2011. She received the award from Prof. Jorge G. Zornberg, (President, International Geosynthetics Society). The award was sponsored by Indian chapter of International Geosynthetics Society.(L.S. Sowmiya) (2011)
Dr. R. Ayothiraman	Mr. and Mrs. Prem Sheel Bhatnagar Memorial Award for Best B.Tech Project (G. Shilpa, 2013)
Dr. Suresh Bhalla	Boss award for B.Tech project "Traffic Monitoring using Smart Materials" (Sushant Maheshwari) (2010-11)
	Boss award for B.Tech project "Development of Low-Cost Static and Dynamic Force Sensors" (Rahul Aggarwal) (2009-10)
	FITT award for industry relevance "Study of Fatigue Behavior of Bolted Steel Lap Joints using Smart Sensors" (A.P.R. Vittal)

	(2008-09)
	Boss award for B.Tech project "Simulation of Bone-PZT Structural Interaction" (Anil Mittal) (2008-09)
	Best B. Tech. Project Award "Damage Detection in Tensegrity Structures: Modeling and Experimentation" (Vivek Kumar) (2007-08)
Dr. K. Ramachandra Rao	DAAD fellowship for M.Tech student - TU Berlin (Amit Agarwal) (2012)
Dr. Vasant Matsagar	Innovative student project award of Doctoral level awarded by the Indian National Academy of Engineering (INAE) to Dr. Manmohan Dass Goel for his Ph.D Thesis titled "Blast Response of Structures and its Mitigation using Advanced Lightweight Materials.
	Best M.Tech Thesis award awarded by the Indian Society for Wind Engineering (ISWE) to Major Alok Dua for his M.Tech thesis titled "Structural Behavior of Transmission Lines under Gust Loading."
	Fast-Track-Projects under Department of Atomic Energy (DAE) Graduate Fellowship Scheme (DGFS) is awarded to Mr. Alok Pradhan with research grant of Rs. 4,00,000 (Indian Rupees Four Lakh Only) on the research project titled "Floor Response Spectra Considering Soil-Structure Interaction for Design of Secondary Structures" by the Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy, Government of India.
	B. Tech. Project (BTP), "Analysis of Construction Loads on Slabs with Shored Formwork in Multi-Storey RC Building Construction" is awarded Mr. and Mrs. Prem Sheel Bhatnagar Memorial Award for best thesis.
	A project, "Investigating Seismic Performance of Ellipsoidal Balls for Base Isolation" received an award a Project Development Grant of Rs. 50,000 (Indian Rupees Fifty Thousand Only) for technology development and transfer by the Alumni Association of Indian Institute of Technology (IIT) Delhi (IITDAA).
	Deutscher Akademischer Austausch Dienst (DAAD) award to Manmohan Dass Goel for Ph. D. sandwich program in the Universität der Bundeswehr München (UniBW) with Prof. Dr. Steffen Marburg. (2010).
	Deutscher Akademischer Austausch Dienst (DAAD)-STIBET III award to Sandip Saha for Ph.D sandwich program in the Universität der Bundeswehr München (UniBW) with Prof. Dr. Steffen Marburg. (2013).
	Deutscher Akademischer Austausch Dienst (DAAD) award to Anoop K. for Masters sandwich program in the Technische

	Universität München with Prof. Dr. Fabian Duddeck. (2013).
	Deutscher Akademischer Austausch Dienst (DAAD) award to Sameer Khan for Masters sandwich program in the Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen University) with Prof. Dr. Benno Hoffmeister. (2013).
	Deutscher Akademischer Austausch Dienst (DAAD) award to Nadeem Mohammad for Masters sandwich program in the Karlsruhe Institute of Technology (KIT) with Lothar Stempniewski. (2012)
	Deutscher Akademischer Austausch Dienst (DAAD) award to S. D. Sukanya for Masters sandwich program in the Technische Universität Braunschweig with Prof. Dr. Mathias Clobes. (2011)
	Deutscher Akademischer Austausch Dienst (DAAD) award to Major Alok Dua for Masters sandwich program in the Technische Universität Braunschweig with Prof. Dr. Mathias Clobes. (2011)
	Deutscher Akademischer Austausch Dienst (DAAD) award to Rajkumar K. for Masters sandwich program in the Karlsruhe Institute of Technology (KIT) with Lothar Stempniewski. (2010)
	Deutscher Akademischer Austausch Dienst (DAAD) award to Cibi Jacob for Masters sandwich program in the Technische Universität in Dresden (TUD) with Prof. Dr. Steffen Marburg. (2009)
Dr. Aravind K. Swamy	IIT Delhi-Alumni Award at I ² Tech-Open House 2013 (2 nd position with cash prize of INR 10,000.00 in undergraduate category) (Apekshit Solanki; Sameera; Vishakha Shankar) (2013).
	IITD class of 89: SPS Memorial Award with seed money of INR 50,000.00 (Apekshit Solanki; Sameera; Vishakha Shankar) (2013).
	2 nd position in Civil Engineering Society awards among CEP200 projects category (Apekshit Solanki; Sameera; Vishakha Shankar) (2013).
	Summer Undergraduate Research Award by IIT Delhi (Vikash Kumar) (2013).

Section-5

R & D Environment

5. R & D Environment

5.1 Post-doctoral research

The post-doctoral scheme has been started in the year 2013-14 and it is expected that post-doctoral fellows will be recruited to the Department soon. This scheme is expected to strengthen the research output of the Department.

5.2 Foreign students enrolled Masters and Ph.D programs

Program	2008-09	2009-10	2010-11	2011-12	2012-13
M.Tech	1	-	5	11	19
Ph.D	1	-	2	1	5

5.3 Indian and foreign faculty/researchers who have spent a sabbatical at IIT Delhi

1. Dr. Roger West, Trinity College Dublin
2. Dr. Brijesh Kumar Yadav, Ramanujan Fellow
3. Prof. Srinivas, University of Texas A&M

5.4 Sabbatical taken by IITD faculty

Dr. S. K. Deb, 2012-13, India and U.K. (for book writing).

5.5 Seminars (education and research) given by the faculty

Year	2008-09	2009-10	2010-11	2011-12	2012-13
In the Department	15	11	9	15	20
In other Departments	2	3	3	4	3
At other institutions	34	36	41	40	71

5.6 Outside faculty/researchers/scholars invited by the Department

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Number of invitees	11	17	19	31	34

5.7 Outside faculty/ researchers who visited the Department on their initiative

Although this information is not available with the Department, several researchers, industry experts, alumnus and external faculty members related to Civil Engineering frequently visit our Department on their own. Our Department positively encourages the visitors and arranges lectures through Civil Engineering Society (CES) for the benefit of our students and faculty, or arranges interactive sessions with faculty and/or students.

5.8 Adequacy of research infrastructure

The research infrastructure needs upgradation so as to achieve better research opportunities. The space and high-end equipment are needed in-house for opening research to frontier areas.

5.9 Adequacy of technical staff

The present staff strength needs to be enhanced in number. The restriction of hiring trained staff should be relooked into by the administration. We need staff for running UG/PG teaching as well as research activities.

Existing number: 23 (17 technical + 6 attendants)

Competency areas: Please see staff list in *Annexure-2*

Shortage in these competency areas: There is shortage of staff in all laboratories. At least about 8 to 10 staffs are to be recruited at the earliest for smooth functioning of the practical courses (UG and PG) and Ph.D scholars work.

5.10 Work space available for students

Out of the total space of 44,657 ft² available with the Department, approximately 3,144 ft² is available for seating of staff and Ph.D students. Although there is a separate room for Research Scholars, due to a shortage of space, separate areas are not designated for Masters Students and Post-doctoral scholars. A total of 6,840 ft² area is available in the Department as Computational Laboratories which are also being used by research students and staff. A list of these areas is given below.

Sl. No.	Name of the Lab	Area (ft ²)	Use by students of UG/PG/PhD
1	Computational Laboratory	1,664	UG/PG/PhD
2	GIS Laboratory	400	UG/PG/PhD
3	Construction Tech Laboratory	400	PG/PhD
4	Construction Simulation Laboratory	400	PG
5	Structural Analysis Laboratory	1,096	UG/PG/PhD
6	Water resources simulation Laboratory	2,880	UG/PG/PhD

5.11 National conferences/ workshops/ seminars attended by Ph.D students

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Total attended	17	21	17	27	37

5.12 International overseas conferences/workshops/seminars attended by Ph.D students

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Total attended	8	8	9	13	22

5.13 Students who have continued to Ph.D (from B.Tech/M.Tech)

This data is not available with the Department. Although several students go for higher studies including Ph.D every year, the Department has felt a need to further encourage its students to take up research within the Department.

5.14 Projects with co-guide from industry

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Number	2	2	1	4	7

5.15 Students who have spent time in industry as part of thesis/ project work

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Number	0	1	0	0	0

5.16 Self-assessment reports of the Department

There is no practice of preparation of self-assessment reports of the Department. However, individual faculty members submit annual self-assessment reports. These reports contain the details of all activities carried out by the faculty members in the Department. These reports are confidential and all of them are kept by the Dean (Faculty) office.

5.17 Placement of M.Tech. and Ph.D graduates in technical careers

Year	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
B.Tech	51	58	49	58	58
Masters Programs					
Structural Engg.	7	10	7	9	1
Construction Engg.	5	9	9	11	6
Geotechnical Engg.	3	6	1	-	2
Rock Engg.	3	4		3	1
Environmental Engg.	3	4	4	3	-
Water Resources Engg.	1	1	4	-	3
Transportation Engg.	-	1	2	-	-

In addition to the above, the Department has been successfully running an M.Tech program with 25 to 27 students every years sponsored by L&T. All candidates join L&T after the completion of the program. In addition, for the Department has been running a PG diploma

program for the Delhi Metro Rail Corporation (DMRC), with 21 candidates who join DMRC after the completion of the 1 year program.

5.18 Inter-disciplinary work

Part (i): joint thesis guidance by faculty across groups within a Department, or across Departments/ centers

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Within Department	3	10	16	19	33
Across Department	10	9	14	10	8
Outside Institute	5	3	3	6	7
Total Ph.D Awarded	7	5	7	7	8

Part (ii): Proposals submitted and funded - PI/Co-PI and their group/department affiliations

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Submitted	7	8	13	17	20
Ongoing	0	4	13	17	24
Finished	13	4	3	10	7

Section-6

Outreach / External Stakeholder Engagement

6. Outreach / External Stakeholder Engagement

6.1 Educational

- (a) Workshops/short term courses - topical research for disseminating research of IITD.
- (b) Workshops/short term courses - educational methods (teaching, learning resources, pedagogy).
- (c) Learning, research material on the website.
- (d) Science and technology for public information - on website.
- (e) Courses taught to students of other IITs/NITs/Other institutions.
- (f) Courses taught via NKN.
- (g) Courses developed for NPTEL.
- (h) Books, monographs, study material made available outside IITD.
- (i) Experiments developed and made available to other institutions.
- (j) Seminars live/via NKN, web to other institutions in India/abroad.
- (k) Reach out to schools, NCERT, KVs, etc. (e.g. K-12 programs).

The Department actively participates in the I²Tech Open House, every year. I²Tech Open House is an annual event of the IIT Delhi (IITD) – traditionally organized on the third Saturday of April each year - to throw its laboratories and facilities open to the general public. It presents a fascinating opportunity for the IITD community, to interact with interested people, with inquisitive students from neighboring educational Institutions and colleagues from other technical Institutes and industries. We consider ourselves privileged to be able to showcase and demonstrate some of the path-breaking research work, the student projects and advanced facilities which are available in IITD.

Our B.Tech/M.Tech/Ph.D students make models and posters and present it on this day. The models and posters of our department students have won best projects awards presented by Alumni Association on few years.

- (l) Mentoring of other institutions, e.g. new IITs, NITs, universities, etc. including faculty mentoring, curriculum development, laboratory development, etc.

Year-wise	2008-09	2009-10	2010-11	2011-12	2012-13	Remk.
Workshops/short term courses - topical research for disseminating - educational methods (teaching, learning resources research pedagogy) are listed below.						6.1(a) 6.1(b)
Learning, research material on the website	3	3	3	3	2	6.1(c) 6.1(d)
Courses taught via NKN on the website	-	-	-	-	1	6.1(f)
Courses developed for NPTEL	1 ^{*1}	1	-	1 ^{*2}	4 ^{*3}	6.1(g)
Books, monographs, study material made available outside IITD	6	6	5	6	5	6.1(h)
Experiments developed and	1	2	1	2 ^{*4}	1	6.1(i)

made available to other institutions						
Seminars live/ via NKN, web to other institutions in India/abroad	2 ^{*5}	3 ^{*5}	2 ^{*5}	2 ^{*5}	6 ^{*5}	6.1(j)
Mentoring of other institutions, e.g. new IITs, NITs, universities, etc. including faculty mentoring, curriculum development, laboratory development, etc.	2	2	6 ^{*6}	3	5 ^{*7}	6.1(l)

*1 Building Materials and Construction

*2 Introduction to Earthquake Engineering; and NPTEL courses reviewed

*3 Concrete Technology; and NPTEL courses reviewed

*4 A new laboratory Multi Hazard Protective Structures (MHPS) is developed

*5 Live-video classes for the Masters Students in Construction Engineering and Management from Addis Ababa University in Ethiopia, Africa through Continuing Education Program (CEP) at Indian Institute of Technology (IIT) Delhi

*6 Summer faculty research fellows

*7 IIT Ropar, IIT Jodhpur infrastructure development

6.2 Industry collaboration

- (a) No. of students (PhD/Masters) directly linked to industry funded projects.
- (b) No. of industry staff/engineers who have taken a regular course(s) for entire semester.
- (c) Technology transfer to companies, entrepreneurs, local and other governments/government agencies, NGOs (separately).
- (d) Continuing education/courses for industry.
- (e) Faculty secondment to industry.
- (f) Research projects undertaken with industry as partner.
- (g) Laboratories, equipment, etc. provided by industry for use in UG/PG teaching.

L&T and DMRC have funded some computational facilities.

- (h) Seminars/workshops held with industry by the department.

Year-wise	2008-09	2009-10	2010-11	2011-12	2012-13	Remk.
Students (PhD/ M.Tech.) directly linked to industry funded projects	5	4	9	9	16	6.2(a)
Research projects undertaken with industry as partner	4	3	3	-	4	6.2(f)
Seminars/ workshops held with industry by the department	4	3	6	4	16	6.2(h)

List of seminars/ workshops/ training programs/ courses; quality improvement program (QIP) and continuing education program (CEP) for technical teachers and industry held by the Department in the last five years

1. National Workshop on GPS and RWC-PRISM, 12th to 15th July, 2004, Prof. A. K. Gosain, Sponsored by Rice-Wheat Consortium, for the Indo-Gangetic Plains, New Delhi.
2. Landfills-Design, Construction and Operation, 16th to 18th July, 2004, Prof. Manoj Datta, Prof. G. V. Rao, Sponsored by Mumbai Waste Management Ltd., Maharashtra.
3. NATCOM Consultative Meeting on Impacts of Climate Change on Water Resources, 22nd July, 2005, Prof. A. K. Gosain, Sponsored by Winrock International, India, New Delhi.
4. 2nd Global Land Cover Network Workshop, 3rd April, 2006, Prof. A. K. Gosain, Sponsored by the Food and Agriculture Organization of the UN, New Delhi.
5. Construction Practices and Management-1, 24th-26th April, 2007, Dr. K. N. Jha, Prof. B. Bhattacharjee, Sponsored by Nagarjuna Construction Company Ltd., Hyderabad.
6. Construction Management for Operational Efficiencies, 19th to 21st June, 2007, Dr. K. N. Jha, Prof. B. Bhattacharjee, Sponsored by Nagarjuna Construction Company Ltd., Hyderabad.
7. SWAT/ADAPT Modeling for Integrated Water Resource Management in India, 20th-30th August, 2007, Prof. A. K. Gosain, Sponsored by INDO-US Science and Technology Forum, New Delhi.
8. Training on Water Pollution and Waterborne Diseases for CPCB, 30th August to 1st September, 2007, Prof. A. K. Mittal, Sponsored by Central Pollution Control Board, New Delhi.
9. Training Program on GIS and Its Application in Civil Engineering, 27th November to 11th December, 2007, Prof. A. K. Gosain, Sponsored by L. D. College of Engineering, Ahmadabad.
10. Short course on Analysis, Design and Construction of Structures, 23rd December, 2007, Dr. S. Bhalla, Prof. B. Bhattacharjee.
11. Computer Aided Scheduling Resource Leveling, Tracking and Reporting for a Construction Project, 14th to 15th March, 2008, Dr. K. N. Jha, Dr. S. K. Deb.
12. Management of Construction for Enhanced Operational Efficiency, 22nd to 24th April, 2008, Dr. K. N. Jha, Sponsored by Nagarjuna Construction Company Ltd., Hyderabad.
13. Remote Sensing and GIS Applications in Hydroelectric Projects, 19th to 22nd August, 2008, Prof. A. K. Gosain, Prof. A. K. Keshari, Sponsored by People Enhancement Solutions, New Delhi.
14. Training of Indian Railways Services of Engineers (IRSE Officers), 18th to 29th May, 2009, Dr. K. N. Jha, Sponsored by Indian Railways Institute of Civil Engineering, Pune.
15. CPCB Residential Training Program on Environment Monitoring and Latest Trends and Guidelines for Environmental Impact Assessment Studies 15th to 17th January, 2010, Dr. A. K. Nema, Sponsored by CPCB, New Delhi.
16. Supervisory Development Program, 18th to 24th April, 2010, Dr. K. N. Jha, Sponsored by L&T Ltd., Chennai.

17. Improving Project Performance using Virtual Design and Construction, 1st May, 2010, Prof. K. C. Iyer, Prof. Anil Sawhney.
18. Short Course on Advanced Sensing Technology for Civil Engineers, 17th to 19th July, 2009 and 14th to 16th May, 2010, Dr. S. Bhalla.
19. Short Term Course on Slurry Pipeline Design, 28th to 31st May, 2010, Dr. Deo Raj Kaushal, Sponsored by Sociedade De Fomrnto Industrial Pvt. Ltd., Goa.
20. SWAT Workshops in India, 12th to 16th July, 2010, Prof. A. K. Gosain.
21. Training Program for Civil Engineers on IS 800 (2007) for L&T, 1st and 2nd April, 2011, Dr. Vasant Matsagar, Sponsored by L&T, Faridabad.
22. 20 II I-BIM Student Competition, 1st August to 14th October, 2011, Prof. K. C. Iyer, Prof. Anil Sawhney, Sponsored by Autodesk India Pvt. Ltd., Bangalore.
23. Short Course on Advances in Earthquake Engineering, (1) 30th to 31st July, 2010, Dr. Vasant Matsagar, (2) 28th to 29th October, 2011, Dr. Dipti Ranjan Sahoo.
24. Fire Performance of Steel and Concrete Structures, 28th June, 2010 and 13th December, 2011, Dr. Vasant Matsagar.
25. Short Course on Artificial Neural Networks in Seismic Control of Structures, 17th - 18th February, 2012, Dr. M. M. Rao.
26. UKIERI Concrete Congress, 8th to 10th March, 2012, Dr. Shashank Bishnoi, Dr. S. Bhalla and Prof. B. Bhattacharjee.
27. One Day Seminar on Urban Challenges in the Context of Climate Change 20th April, 2012, Dr. A. K. Nema and Dr. Arun Kumar Sponsored by Liberty Institute, New Delhi.
28. One week QIP - CEP (Quality Improvement Program - Continuing Education Program) short - term course on "Soil Mechanics and Foundation Engineering - Principles and Practices", 21st - 25th May, 2012, Dr. Bappaditya Manna and Dr. Tanusree Chakraborty, Indian Institute of Technology (IIT) Delhi, India.
29. QIP - CEP Program on, "Water Ingress, Implications and Water Proofing of Buildings and Structures", 16th July - 20th July 2012, Prof. B. Bhattacharjee, Indian Institute of Technology (IIT) Delhi, India.
30. 2012 International SWAT Conference and Workshops, July 16th - 20th, 2012, India Habitat Centre, New Delhi, India.
31. One week QIP - CEP (Quality Improvement Program - Continuing Education Program) course on "Finite Element Analysis of Structures with MATLAB and ABAQUS Based Simulations", 23rd - 27th July, 2012, Dr. Vasant Matsagar, Indian Institute of Technology (IIT) Delhi, India.
32. Training program on "Modern Formwork and Scaffolding", 4th - 6th October, 2012, Dr. K. N. Jha, Indian Institute of Technology (IIT) Delhi, India.
33. 3rd IGS Ferroco Terzaghi Oration 2012 on "Design and Construction of Barrier System to Minimize Environmental Impacts Due to MSW Leachate and Gas" by Prof. Kerry Rowe, Queens University, Canada on 5th October 2012, at Seminar Hall, IIT Delhi.
34. One week QIP - CEP (Quality Improvement Program - Continuing Education Program) course on "Advanced Steel Design", 8th - 12th October, 2012, Dr. Dipti Ranjan Sahoo and Dr. Vasant Matsagar, Indian Institute of Technology (IIT) Delhi, India.
35. Curriculum Development (CD) Workshop on "Identification of Issues for Sustainable Urban Built - Environment", 29th - 31st October, 2012 under the aegis of Quality

Improvement Program (QIP), Dr. Arun Kumar and Dr. Vasant Matsagar, Indian Institute of Technology (IIT) Delhi, India.

36. Indian Geotechnical Conference (IGC-2012) Advances in Geotechnical Engineering, December, 13th - 15th, 2012, New Delhi, India.
37. Workshop on Experimental Structural Dynamics, Structural Health Monitoring and Non-Destructive Evaluation on March 9, 2013, Dr. S. Bhalla, Indian Institute of Technology (IIT) Delhi, India.
38. Workshops On: Quality Control of Concrete And Construction Materials Through Testing AND Experimental Structural Dynamics, Health Monitoring And Non-Destructive Evaluation Using Smart Materials, 14th June, 2013, Dr. S. Bhalla, Indian Institute of Technology (IIT) Delhi, India.

6.3 Professional

- (a) Service as Board, Senate, selection committee member at other IITs, NITs, and Universities.
- (b) Service as PhD thesis examiner at other institutions.
- (c) Service as technical expert on committees - MHRD, DST, DSIR, DRDO, Pan-IIT initiatives, other ministries, state and local governments.
- (d) Technical expert on policy, regulatory, laws, standards committees.
- (e) Member of Board/Advisory Board of public and private sector corporations.
- (f) Positions (e.g. Director, Vice Chancellor, etc.) held by faculty on lien.

Year-wise	2008-09	2009-10	2010-11	2011-12	2012-13	Remk.
Service as board, senate, selection committee member at other IITs, NITs, and universities	15	16	25	24	36	6.3(a)
Service as PhD thesis examiner at other institutions	16	19	18	17	24	6.3(b)
Service as technical expert on committees - MHRD, DST, DSIR, DRDO, Pan-IIT initiatives, other ministries, state and local governments	19	21	22	26	23	6.3(c)
Technical expert on policy, regulatory, laws, standards committees	8	7	14	16	17	6.3(d)
Member of board/ advisory board of public and private sector corporations	7	8	11	13	13	6.3(e)
Positions (e.g. director, vice chancellor, etc.) held by faculty on lien	2	1	4	5	1	6.3(f)

6.4 Contribution to national development goals

(a) Projects undertaken.

Year-wise	2008-09	2009-10	2010-11	2011-12	2012-13	Remk.
Projects undertaken	6	6	6	4	8	6.4(a)

(b) Policy inputs - implications, visible impact on society: The Department faculty are involved in several policy making committees at State and National levels, and provide technical inputs.

(c) Entrepreneurship development: Managed by the Technology Business Incubation Unit, IIT Delhi

6.5 Alumni engagement

(a) Regular interactions / engagement with alumni and outcomes.

Alumni meets are conducted in the Department from time to time wherein faculty members interact with the alumni. Moreover, during annual Civil Engineering Society (CES) festival, Dimensions, alumni interact with the current students of the Department.

(b) Contributions from alumni.

Civil Engg society regularly conducts interaction with Alumni for various activities related to knowledge enhancement, job scenario, etc.

6.6 Recognitions and awards

(a) Awards to faculty (complete data)

1. 15th Khwarizmi International Award, awarded to Prof. Datta T. K.
2. Adlerbretska Guest Professorship in Sustainable Transport at the Chalmers University of Technology (2007 to Present), awarded to Prof. Geetam Tewari.
3. AICTE Career Award for Young Teacher, awarded to Prof. B. R. Chahar.
4. Best Paper Award in 3rd Indian Young Geotechnical Engineers Conference (3IYGEC 2011), New Delhi, awarded to Prof. J. T. Shahu in 2011.
5. Best Paper Award in International Conference on "Ground Improvement and Ground Control (ICGI 2012)" sponsored by "Australian Research Council's Centre of Excellence for Geotechnical Engineering" awarded to Prof. J. T. Shahu in 2012.
6. Best Paper Award in the Area of Deep Foundation for the Year 2011 sponsored by Indian Geotechnical Society (IGS), during Indian Geotechnical Conference 2012, New Delhi, India, Dr. B. Manna in 2012.

7. Best Paper Award, 2012, during CORCON 2012, for paper “Early Detection of Corrosion in RC Structures Using EMI Technique”, by T. Visalakshi and S. Bhalla, 26-29 September, 2012.
8. Best Poster, Indian Association of Aerosol Science and Technology, awarded to Dr. G. Habib, 2004.
9. Best Technical Paper, Institution of Naval Architects, awarded to Prof. K. C. Iyer, 2009.
10. Certificate of Merit from the Institution of Engineers (India) for a technical paper in their Journal, Prof. K. C. Iyer in 1995.
11. Certificate of Merit from the National Institute of Construction Management and Research for a technical paper in their Journal, Prof. K. C. Iyer in 2002.
12. Commendation Certificate from the Ministry of Defense, Government of India for significant contribution to India’s Missile Development Program, Prof. K. C. Iyer in 1989.
13. DAAD Award for mentor visit program to Leibniz Universität Hannover, Germany, awarded to Dr. Tanusree Chakraborty in December, 2013.
14. DAAD Award for study visits to German universities such as, Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen University); Universität der Bundeswehr München (UniBW); Technische Universität in Dresden (TUD), Darmstadt, and München (TUM), under faculty exchange programme by the Deutscher Akademischer Austausch Dienst, German Academic Exchange Program, awarded to Dr. Vasant Matsagar in 2009 and 2012.
15. DAAD Award for study visits to Universität der Bundeswehr München (UniBW), Germany under faculty exchange programme by the Deutscher Akademischer Austausch Dienst, German Academic Exchange Program, awarded to Dr. Tanusree Chakraborty in June-July, 2012.
16. DAAD Fellowship for "Research Stay" at Technical University of Dresden, Dresden, Germany, Dr. B. Manna in 2012.
17. DAAD Mentor Visit Program to Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen University), Universität der Bundeswehr München (UniBW); Technische Universität in München (TUM), Germany awarded to Dr. Vasant Matsagar in 2013.
18. DAAD Research Ambassador by German Academic Exchange Services, awarded to Dr. Vasant Matsagar.
19. DAE Young Scientist Award by the Board of Research in Nuclear Sciences (BRNS) at Bhabha Atomic Research Centre (BARC), Department of Atomic Energy (DAE), Government of India, awarded to Dr. Vasant Matsagar (2011), Dr. B. Manna (2012), Dr. Dipti Ranjan Sahoo (2012), Dr. Tanusree Chakraborty (2013).
20. Distinguished Capital IRTE and Prince Michael International Road Safety Award, awarded to Prof. Geetam Tewari.
21. DST Young Scientist Award by the Science and Engineering Research Council (SERC), Department of Science and Technology (DST), Ministry of Science and Technology, Government of India, awarded to Dr. Bishnoi S., Prof. B. R. Chahar, Dr. Tanusree Chakraborty, Dr. Ganguli A., Dr. R. R. Kalaga, Dr. Arun Kumar, Dr. B. Manna, Dr. Vasant Matsagar, Dr. Dipti Ranjan Sahoo.

22. Earthquake Engineering Research Institute (EERI) travel award in the 100th Anniversary Earthquake Conference held at San Francisco, California, USA, awarded to Dr. Vasant Matsagar.
23. Endeavour Research Fellowship, Post-Doctoral Research, University of Wollongong, Australia, Dr. B. Manna in 2010.
24. Erasmus Mundus Award under the Action 2 project India4EU II programme of the European Commission to conduct research in Civil Engineering at Ecole Centrale de Nantes (ECN), France, awarded to Dr. Vasant Matsagar in 2013.
25. Golden Jubilee Mentorship Award, IIT Delhi, awarded to Prof. T. K. Datta.
26. HEICO Gold Medal for Best Paper in Rock Mechanics, awarded to Prof. K. S. Rao, 1981.
27. Hem Prabha - S. N. Gupta Prize for the best paper by The Institution of Engineers (India), Prof. A. K. Keshari, 2008.
28. Honorary Doctor of Technology from Chalmers University of Technology, Dr. Geetam Tewari in May 2012.
29. IBC Award of Excellence in Built Environment by Indian Building Congress, awarded to Dr. Vasant Matsagar in 2010.
30. IEI Young Engineer Award by the Institution of Engineers (India) in Civil Engineering Discipline awarded to Dr. Vasant Matsagar (2009), Dr. R. Ayothiraman (2010), Dr. Dipti Ranjan Sahoo (2012), Dr. B. Manna (2012).
31. IGS Annual Lecture Award - one Geotechnical Engineer invited to deliver Annual Lecture by the Society, awarded to Prof. M. Datta, 2011.
32. IGS Annual Lecture Award, Indian Geotechnical Society (IGS), awarded to Prof. K. G. Sharma, 2008.
33. IGS Delhi Chapter Leadership Award, awarded to Prof. J. T. Shahu, 2011.
34. IGS Delhi Chapter, Life Time Achievement Award awarded to Prof. K. G. Sharma, September 2012.
35. IGS- Outstanding Contribution Award, awarded to Prof. K. S. Rao, 1997-2006.
36. IGS-AFCONS Biennial Award for Best Research Paper, awarded to Prof. K. S. Rao, 2012.
37. IGS-AIMIL Best Paper Award for Instrumentation, awarded to Prof. K. S. Rao, 2004.
38. IGS-Geotech Award for Innovations in Field Exploration, awarded to Prof. K. S. Rao, 2005.
39. IGS-H.C.Verma Diamond Jubilee Award for Innovative Instrumentation Award, awarded to Prof. K. S. Rao, 2012.
40. IGS-HEICO Award for Best Journal Paper, awarded to Prof. K. G. Sharma, 1987.
41. IGS-HEICO Best Paper Awards, awarded to Prof. K. S. Rao in 1986, 1997, 1998, 2005.
42. Indian Society for Rock Mechanics and Tunneling Technology Award for Best Journal Paper, awarded to Prof. K. G. Sharma, 2002.
43. Indo-US Research Fellowship, awarded to Prof. K. R. Rao, 2008.
44. International Association for Computer Methods and Advances in Geomechanics Excellent Journal Paper Award, awarded to Prof. K. G. Sharma, 2008.
45. International Association for Computer Methods and Advances in Geomechanics (IJOG) Excellent Paper Award, awarded to Prof. K. G. Sharma, October 2008.

46. International Velocity Falco Lecture Prize, Barcelona, Spain, awarded to Prof. Geetam Tewari.
47. ISRMTT Best Paper Award for Rock Mass Classifications, awarded to Prof. K. S. Rao, 2002.
48. ISTE-SGSITS National Award For Best Research Work by Young Teachers of Engineering Colleges, Indian Society For Technical Education, Award Instituted by Shri G. S. Institute of Technology and Science, Indore, Dr. B. Manna, 2012 - 2013.
49. Life Time Achievement Award (NORTH) Concrete Technology, Prof. B. Bhattacharjee.
50. Lucknow Management Association Woman's Achiever Award, Prof. Geetam Tewari in 2010.
51. National Nominated Candidate for Representing in The 7th Asian Young Geotechnical Engineering Conference in Japan, sponsored by Indian Geotechnical Society (IGS), New Delhi, India, Dr. B. Manna, 2012.
52. Natwarlal Harilal Bhagawati Charity Trust Prize, IIT Bombay, awarded to Dr. Ganguli A.
53. Outstanding Reviewer Award, Journal of Hydrologic Engineering, American Society of Civil Engineers (ASCE), Dr. Dhanya C. T., 2012.
54. Outstanding Young Faculty Fellowship by IIT Delhi, awarded to Dr. R. Ayothiraman, Dr. Bhalla S., Dr. Ganguli A., Dr. Arun Kumar, Dr. Maheswari J. U., Dr. B. Manna, Dr. Vasant Matsagar, Dr. Dipti Ranjan Sahoo, Dr. Dhanya C. T., Dr. A. K. Swamy.
55. Prof. Leonards Best PhD Thesis Award, awarded to Prof. K. S. Rao, 1985.
56. Prof. N. S. Govinda Rao Gold Medal for the Best PhD Thesis in the department of Civil Engineering at IISc Bangalore. This Medal was presented on IISc's Founder's Day which was celebrated on 3rd March 2012, Dr. Dhanya C. T., 2010 - 2011.
57. R.N. Prasad best Publication Award on Slope Stability and Landslides, awarded to Prof. K. S. Rao, 1995.
58. Residential Biofuels in South Asia: Journal Article Recognized by ABC News, NVTimes and Hindustan Times, Dr. G. Habib
59. Teaching Excellence Award for Structural Analysis to Dr. Bhalla S. in 2011, and for Quantitative Methods in Construction Management to Prof. K. C. Iyer in 2012.
60. The 11th MAUSAM Award by Indian Meteorological Department (IMD), awarded to Prof. A. K. Gosain.
61. The Stockholm Partnership Award for Local Impact, Innovative Thinking, awarded to Prof. Geetam Tewari.
62. Vishwakarma Award for Outstanding Academician by Construction Industry Development Council, awarded to Prof. K. C. Iyer, 2010.
63. Young Engineer Award by Indian National Academy of Engineering (INAE), Prof. A. K. Keshari (2000), Prof. Alok Madan (2001), Dr. Dipti Ranjan Sahoo (2012).
64. Young Professional Award by World Federation of Professional Organizations, awarded to Dr. Vasant Matsagar.

(b) Fellows of academies, INAE, etc. (selective data)

1. Elected President, Indian Geotechnical Society (IGS), Prof. K. S. Rao
2. Fellow, Indian Association of Hydrologists (IAH), Prof. A. K. Gosain

3. Fellow, Indian Geotechnical Society (IGS), Prof. K. G. Sharma, Prof. K. S. Rao, Prof. M. Datta
4. Fellow, Indian National Academy of Engineering (INAE), Prof. Datta T. K.
5. Fellow, Indian Society for Hydraulics (ISH), Prof. B. R. Chahar
6. Fellow, Indian Society of Wind Engineering (ISWE), Prof. Mukesh Khare
7. Fellow, Indian Water Resources Society (IWRS), Prof. B. R. Chahar
8. Fellow, Indian Water Works Association (IWWA), Prof. B. R. Chahar
9. Fellow, Indo-US Science and Technology Foundation (IUSSTF), Dr. R. R. Kalaga
10. Fellow, Institute of Engineers (India), Prof. A. K. Jain
11. Fellow, Institute of Engineers (India), Prof. K. C. Iyer
12. Fellow, Institute of Engineers (India), Prof. K. R. Rao
13. Fellow, Institute of Engineers (India), Prof. Mukesh Khare
14. Fellow, Institution of Surveyors (India), Prof. K. C. Iyer
15. Fellow, Wessex Institute of Great Britain (WIGB), Prof. Mukesh Khare
16. Honorary Fellow, Indian Association of Structural Engineers (IASE), Prof. B. Bhattacharjee
17. Honorary Patron, Planet Earth Institute (PEI), London, Prof. Mukesh Khare
18. Independent Director, National Building Construction Corporation (NBCC) Ltd., Prof. K. C. Iyer
19. Life Member, Global Institute of Flexible Systems Management, Prof. K. C. Iyer
20. Member, Academic Advisory Board in Engineering Sciences at TERI, Prof. B. Bhattacharjee
21. Member, Board of Governors, Engineering Council of India, Prof. K. S. Rao
22. Member, Governing Council, National Geotechnical Facility, DST, Prof. K. S. Rao
23. Member, National Council for Cement and Building Materials (NCCBM), Prof. B. Bhattacharjee
24. Member, Panel of Arbitrators of CIDC-SIAC Arbitration Centre, Prof. K. C. Iyer
25. Member, Research Council of Central Building Research Institute (CBRI), Prof. B. Bhattacharjee
26. Vice-President, North India Chapter, Environmental and Water Resources Institute (EWRI) of American Society of Civil Engineers (ASCE), Prof. B. R. Chahar
27. Visiting International Fellow, Environmental and Water Resources Institute (EWRI) of American Society of Civil Engineers (ASCE), Prof. B. R. Chahar

Section-7

Governance

7. Governance

7.1 Governance

(a) Organization structure - their autonomy/ terms of reference

The Department has the distributed level of administration which carries the activities concerning all areas. HOD is nominated by the Director in rotation amongst the Professors by seniority.

(b) Planning documents developed by the department - space, faculty, staff related.

Yes, these are generated as and when some additional requirements are required to be met for new research activities.

(c) Records of discussions within the department - internal documents (meeting minutes, position papers, discussion papers, concept papers, etc.)

All the records are available to all concerned.

(d) Physical resources - percentage utilization for UG PG core and electives teaching separately, UG and PG student projects, Ph.D student research. Projections for future.

Classroom spaces and laboratories are utilized to the most extent for teaching students and conducting experiments and research works. Due to increased number of students, more physical resources including space are required for meeting the requirements.

(e) Financial resources - (i) funds provided to the department, (ii) processes of distribution, (iii) funding for focus areas, (iv) funding for UG and PG core teaching laboratories. Outcomes of funds utilization.

The department receives funds from IIT Delhi for planned and unplanned expenditures. For planned expenditures, about Rs 1.5-2 crores are provided and for non-planned expenditures, about Rs 0.75-1 crores are provided which are divided in different sections and areas as per faculty strength, laboratory and students registered. The allocated funds are utilized for laboratory teaching and research works. Due to these funds, students are able to finish their works and publish research works. Faculties are able to conduct more research through research proposals and possible funding from other sources.

(f) Delegation of decision making within department/centre. List the processes and structures for financial and academic management, and the methodology for their review.

There are several committees formed in the Department like DRC, Lab-in-charges, administrative in-charge and budget in-charge for decision making and management of the departmental activities. The details of various committee is given in *Annexure-7*.

7.2 Department management and operations

- (a) Organization structure - mandates, flexibility, etc.

Same as 7.1(f). Details given in *Annexure-7*.

- (b) Processes for curriculum planning.

The different groups conduct this activity within their expertise areas

- (c) Processes and methods for teaching resources management.

- (d) Guest faculty, affiliation for teaching core, elective UG & PG courses.

Sometimes guest faculty teaches for core and elective UG/PG courses. For example,

- Dr. K. K. Gupta have been teaching CEL222
- Prof. B.D. Deshpande taught CEL766
- Prof. Chandan Ghosh taught CEL708

- (e) Faculty short-listing criteria.

As per the criteria given by MHRD with some additional criteria from the Department, depending on the requirement and number of applications.

- (f) How collectiveness of the faculty has enhanced academic output and enhanced quality, etc.

The collectiveness of the faculty has improved departmental performance; interdisciplinary projects; joined teaching activities and responding to the need of the society.

- (g) Nature, quantum and quality of support from of secretarial staff, stores and inventory management, purchases, ambience, etc.

In addition to skilled and non-skilled staffs, the department has support staffs to the office of the Head of the department, stores and purchase section which handle laboratory purchase activities. The computer-based and hard-copy based inventory are kept for data keeping.

7.3 Faculty

(a) Faculty profile

Head of the Department



A. K. Jain
Ph.D (IIT Delhi)
Professor & Head

E-mail: akjain@civil.iitd.ac.in,
hodcivil@admin.iitd.ac.in

Areas of Interest: Earthquake Resistant Analysis of Structures, Wind Load Analysis of Structures, Dynamic Behaviour of Offshore Structures.

Professors



B.J. Alappat
Ph.D (IIT Bombay)

E-mail: alappat@civil.iitd.ac.in
Areas of Interest: Environmental Engineering, Solid Waste Management, Incineration, Fluidised Bed Operations.



B. Bhattacharjee
Ph.D (IIT Delhi)

E-mail: bishwa@civil.iitd.ac.in
Areas of Interest: Durability of Concrete, Rebar Corrosion, Cement Based Composites, Construction Technology, Building Science.



B.R. Chahar
Ph.D (IIT Roorkee)

E-mail: chahar@civil.iitd.ac.in
Areas of Interest: Seepage, Drainage, Canal Design.



Manoj Datta
Ph.D (IIT Delhi)

E-mail: mdatta@civil.iitd.ac.in
Areas of Interest: Geoenvironment, Landfills, Ash Ponds, Tailings, Ground Improvement, Slope Stability, Dams, Offshore Geotechnology.



T.K. Datta
Ph.D (IIT Bombay)
Emeritus Professor
E-mail: tkdatta@civil.iitd.ac.in

Areas of Interest: Earthquake Engineering, Wind Engineering, Offshore Dynamics, Structural Control.



N.K. Garg
Ph.D (Univ. of Wales, UK)
E-mail: nkgarg@civil.iitd.ac.in

Areas of Interest: Water Resources Systems, Finite Element Watershed Modelling, Irrigation Management, CAD.



A.K. Gosain
Ph.D (IIT Delhi)
E-mail: gosain@civil.iitd.ac.in

Areas of Interest: Integrated Watershed Modelling, GIS, Hydrological Modelling, Irrigation Management, Climate Change, Environmental Impact Assessment.



Ashok Gupta
Ph.D (IIT Delhi)
E-mail: ashokg@civil.iitd.ac.in

Areas of Interest: Structural Engineering, Artificial Intelligence, Technology Enhanced Learning, Web Based Courses.



K.C. Iyer
Ph.D (IIT Madras)
E-mail: kciyer@civil.iitd.ac.in

Areas of Interest: Financial Management, Project Risks, Legal Issues in Business, Infrastructure Project Management.



A.K. Keshari
Ph.D (IIT Kanpur)
E-mail: akeshari@civil.iitd.ac.in

Areas of Interest: Hydrological and Environmental Modelling, Sustainable Development, Remote Sensing and GIS, FEM, Waste Management and Sewerage System, Policy Analysis and Risk Assessment, Snow and Avalanche.



Mukesh Khare

Ph.D (Univ. of New Castle, UK)

E-mail: mukeshk@civil.iitd.ac.in

Areas of Interest: Air and Vehicular Pollution Modelling, Indoor Air Pollution.



Alok Madan

Ph.D (SUNY Buffalo, USA)

E-mail: madan@civil.iitd.ac.in

Areas of Interest: Structural Engineering, Nonlinear Structural Dynamics, Concrete Structures, Computing in Structural Engineering, Structural Masonry.



Shashi Mathur

Ph.D (Univ. of Delaware, USA)

E-mail: smathur@civil.iitd.ac.in

Areas of Interest: Groundwater Contamination, Bioremediation of Soils, Flow through Porous Media, Phyto-Remediation, Biodegradation in Landfills.



A.K. Mittal

Ph.D (IIT Bombay)

E-mail: akmittal@civil.iitd.ac.in

Areas of Interest: Emerging Contaminants, Environmental Microbiology, Wastewater Treatment, Benchmarking Utility, Environmental Management in Construction Projects.



A.K. Nagpal

Ph.D (IIT Delhi)

Dogra Chair Professor

E-mail: aknagpal@civil.iitd.ac.in

Areas of Interest: Structural Engineering, Tall Buildings, Bridges, Earthquake Engineering.



A.K. Nema

Ph.D (IIT Bombay)

E-mail: aknema@civil.iitd.ac.in

Areas of Interest: Environmental Engineering, Modelling, Simulation and Optimisation of Environmental Systems, Integrated Waste Management, Environmental Impact Assessment.



G.V. Ramana
Ph.D (RPI, NY, USA)

E-mail: ramana@civil.iitd.ac.in

Areas of Interest: Geoenvironmental Engineering, Geotechnical Earthquake Engineering, Waste Mechanics, Ground Improvement.



K.S. Rao
[Ph.D (IIT Delhi)]

E-mail: raoks@civil.iitd.ac.in

Areas of Interest: Rock Mechanics and Rock Engineering, Geotechnical Engineering, Engineering Geology, Seismic Microzonation, Physical and Numerical modelling, Underground Structures and Stability of Slopes.



J.T. Shahu
Ph.D (IIT Kanpur)

E-mail: shahu@civil.iitd.ac.in

Areas of Interest: Geotechnology for Roads and Railway Tracks, Numerical Modelling of Soil Behaviour, Ground Improvement, Soil Dynamics, Geosynthetics.



K.G. Sharma
Ph.D (Univ. of Wales, UK)

E-mail: kgsharma@civil.iitd.ac.in

Areas of Interest: Rock Mechanics, Soil and Foundation Engineering, Constitutive Modelling, Dam Foundations, Underground Structures, Slope Stability, Computational Methods.



Geetam Tewari (Ms)
Ph.D (Univ. of Illinois, Chicago, USA)

E-mail: geetamt@civil.iitd.ac.in

Areas of Interest: Transport Planning and Policy, Traffic Safety, Public Transport and NMV Planning.

Associate Professors



R. Ayothiraman
Ph.D (IIT Madras)

E-mail: araman@civil.iitd.ac.in

Areas of Interest: Soil Dynamics and Earthquake Engineering, Pile Foundations, Deep Excavations and Tunneling in Soil, Ground Improvement, Experimental Geotechnics



G.S. Benipal
Ph.D (IIT Delhi)

E-mail: gurmail@civil.iitd.ac.in

Areas of Interest: Concrete Mechanics, Constitutive Modelling, Non-Linear Elasto-Dynamics and Stability.



Suresh Bhalla
Ph.D (NTU, Singapore)

E-mail: sbhalla@civil.iitd.ac.in

Areas of Interest: Smart Material and Structures, Structural Health Monitoring, Non-Destructive Evaluation, Bio-Mechanics, Engineered Bamboo Structures.



S.K. Deb
Ph.D (IIT Delhi)

E-mail: skdeb@civil.iitd.ac.in

Areas of Interest: Transportation Engineering, Urban Engineering, Fuzzy System Modelling and Airways, Sustainable City.



K.N. Jha
Ph.D (IIT Delhi)

E-mail: knjha@civil.iitd.ac.in

Areas of Interest: Construction Project Management, Project Success Factor, Asset Management, Schedule Cost, Quality and Safety.



R.R. Kalaga
Ph.D (IIT Kharagpur)

E-mail: rrkalaga@civil.iitd.ac.in

Areas of Interest: Mass Transit Planning, Traffic Flow Modelling and Traffic Safety.



D.R. Kaushal
Ph.D (IIT Delhi)

E-mail: kaushal@civil.iitd.ac.in

Areas of Interest: Hydraulic and Water Resources Engineering, Fluid Mechanics, Sediment Transport, Hydraulic Structures, Multiphase Flows, Slurry Pipeline and Flume, Computational Fluid Dynamics, Flow Instrumentation.



Rakesh Khosa

Ph.D (IIT Delhi)

E-mail: rkhosa@civil.iitd.ac.in

Areas of Interest: Water Resources Systems, Stochastic Processes, Conflict Resolution and Hydrologic Modelling of Large River Basin.



Vasant Matsagar

Ph.D (IIT Bombay)

E-mail: matsagar@civil.iitd.ac.in

Areas of Interest: Multi-Hazard Protection of Structures, Earthquake, Wind, Blast and Fire Engineering, Fibre reinforced Polymer Composites.

Assistant Professors



Shashank Bishnoi

Ph.D (EPFL, Switzerland)

E-mail: shashank.bishnoi@civil.iitd.ac.in

Areas of Interest: Experimental and Numerical Studies into Hydration of Cement and Supplementary Cementitious Materials, Sustainability, Durability, Repair and Life-Cycle Costs of Concrete Structures.



Sumedha Chakma

Ph.D (IIT Delhi)

E-mail: chakma@civil.iitd.ac.in

Areas of Interest: Settlement in Landfills, Gas Generation from Landfills, GIS Based Landfill Management, Bioreactor Landfill, Infiltration Characteristics of Different Vegetation and Landuse, Watershed Management, Water Contamination and Remediation, Open Channel Hydraulics, Contaminant Hydrology.



Tanusree Chakraborty (Ms)

Ph.D (Purdue University, West Lafayette, USA)

E-mail: tanusree@civil.iitd.ac.in

Areas of Interest: Foundation Engineering, Blast Loading in Soil, Soil Plasticity and Constitutive Modeling, Soil-Structure Interaction and Underground Construction in Soil and Rock.



C.T. Dhanya (Ms)

Ph.D (IISc Bangalore)

E-mail: dhanya@civil.iitd.ac.in

Areas of Interest: Hydroclimatological Modelling, Nonlinear Dynamics and Chaos Theory, Stochastic Hydrology, Optimisation in Water Resource

Systems, Data Mining in Hydrology, Water Resources Management.



Abhijit Ganguli
Ph.D (Univ. Libre de Bruxelles, Belgium)

E-mail: abhijit.ganguli@civil.iitd.ac.in

Areas of Interest: Non-Destructive Evaluation of Structures, Subsurface Imaging, Ultrasonics, Wave Scattering Problems, Structural Dynamics, Active Control of Structural Vibration, Mechatronics.



Gazala Habib (Ms)
Ph.D (IIT Bombay)

E-mail: gazala@civil.iitd.ac.in

Areas of Interest: Aerosol Monitoring, Characterization and Modelling, Local Air Quality, Health and Climate Effects.



Supratic Gupta
Ph.D (Nagoya Univ., Japan)

E-mail: supratic@civil.iitd.ac.in

Areas of Interest: Concrete Mechanics, Self-Compacting Concrete, Constitutive Modelling, Analytical and Experimental Research of RC and Prestressed Concrete Bridges, Bamboo Concrete Composites.



Arun Kumar
Ph.D (Drexel Univ., Philadelphia, USA)

E-mail: arunku@civil.iitd.ac.in

Areas of Interest: Human Health Risk Assessment, Nanoparticles, Water Treatment, Uncertainty Analysis.



J. Uma Maheswari (Ms)
Ph.D (IIT Madras)

E-mail: umapaul@civil.iitd.ac.in

Areas of Interest: Design Management, Matrix-based Design Techniques, Construction Project Management, Automation.



Bappaditya Manna
Ph.D (IIT Kharagpur)

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Areas of Interest: Dynamic Soil-Pile Interaction, Pile Foundation, Machine Foundation, Stability of Reinforced Slopes.



D.R. Sahoo
Ph.D (IIT Kanpur)

E-mail: drsahoo@civil.iitd.ac.in

Areas of Interest: Earthquake Engineering, Large Scale Testing, Supplemental Damping and Energy Dissipation Devices, Performance-Based Seismic Design, Steel-Fibre Reinforced Concrete.

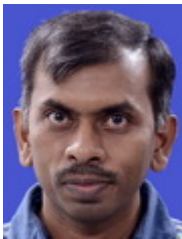


Arvind K. Swamy
Ph.D (Univ. of New Hampshire, Durham, USA)

E-mail: akswamy@civil.iitd.ac.in

Areas of Interest: Modelling Behaviour of Asphaltic Materials, Continuum Damage Modelling, Pavement Engineering, Rheology, Recycling of Pavement Materials.

Senior Programmer



M.M. Rao
Ph.D (IIT Delhi)

E-mail: manepali@civil.iitd.ac.in

Areas of Interest: ANN Control of Building Frames, MIS, System Administration, Development of Applications Software.

Note: The brief curriculum vita (CV) of each faculty is enclosed as *Annexure-8*

(b) Diversity in faculty profile by: (i) Gender (ii) Ph.D institute

Total Number of Faculty = 43

Gender	No. of Faculty
Female	5
Male	38
Total	43

	Ph.D Institute	No. of Faculty	Total Faculty
India	IIT Bombay	6	29
	IIT Delhi	13	
	IIT Kanpur	3	
	IIT Kharagpur	2	
	IIT Madras	3	
	IIT Roorkee	1	
	IISc Bangalore	1	
Abroad	Drexel Univ., Philadelphia, USA	1	14
	EPFL, Switzerland	1	
	Nagoya University, Japan	1	
	NTU, Singapore	1	
	Purdue University, West Lafayette, USA	1	
	RPI, New York, USA	1	
	SUNY Buffalo, USA	1	
	Univ. of Delaware, USA	1	
	Univ. of Illinois, Chicago, USA	1	
	Univ. Libre de Bruxelles, Belgium	1	
	Univ. of New Castle, UK	1	
	Univ. of New Hampshire, Durham, USA	1	
	Univ. of Wales, UK	2	

(c) Procedure for faculty searches.

Through advertisements; faculty alumni network; A search committee is in place for attracting new and bright faculty.

(d) Result of faculty searches - area-wise, number of applicants, short-listed and offered a position, their educational qualifications & experience.

The data is quite varied and dispersed, which has not been quantified. Dean (Faculty) office maintains the official records of faculty recruitment.

(e) Success in recruitment (data for last 5 years), and offers that the persons had from other IITs/IISc/TIFR.

Yes, by and large the recruitment of faculty in the last 5 years has been successful.

(f) Faculty lost to other institutions post selection.

Yes, due to personal reasons of the faculty candidates.

(g) Faculty time utilization - in class, in meetings, project management, Ph.D guidance, Masters project guidance, UG project guidance.

It varies with different faculties. In general, all faculties try to do justice for different tasks and use all possible times for different tasks in a balanced manner.

- (h) Level of harmony amongst department faculty.

Good and cordial.

7.4 Staffs

The department has 23 Staffs, out of which 17 are the skilled technical staffs. List of staff and their details is given in Annexure-2.

7.5 Students

- (a) Criteria for short-listing and selecting students for admission to Master's and Ph.D programs of past 5 years.

All selections are conducted based on the institute's minimum criteria. Depending on the need, the department also puts additional criteria to attract more bright students.

- (b) Facilities provided to students and their maintenance/management system.

All students have been provided online course management systems. They get full access to laboratories for conducting experiments and faculties and teaching assistants for discussion and collaborations.

- (c) Mentoring seminars/sessions held for Ph.D students for prospective faculty careers.

PhD students are advised on a one-to-one basis whenever it is required. In addition, experts from outside are also invited for presenting talks and information regarding opportunities in different universities.

Section-8

Benchmarking

8. Benchmarking

8.1 Peers within IIT Delhi - Identify departments/centers within IITD as peers.

- (i) Department of Applied Mechanics
- (ii) Department of Mechanical Engineering
- (iii) Department of Electrical Engineering

8.2 Peers from other IITs, IISc etc. - Identify departments/centers/schools/divisions from other IITs, IISc, NITs, private universities as peers, and reasons/criteria there for.

- (i) Department of Civil Engineering, IISc Bangalore
- (ii) Department of Civil Engineering, IIT Bombay
- (iii) Department of Civil Engineering, IIT Kanpur
- (iv) Department of Civil Engineering, IIT Kharagpur
- (v) Department of Civil Engineering, IIT Madras
- (vi) Department of Civil Engineering, IIT Roorkee

8.3 Peers from outside the country - Identify departments/centers from institutions in other countries as peers.

Generally, top ranked universities in the QS World University Rankings are considered as peers.

- (i) Imperial College London, UK.
- (ii) University of California, Berkeley (UCB), USA.
- (iii) The University of Tokyo, Japan.
- (iv) Delft University of Technology, Netherlands.
- (v) Massachusetts Institute of Technology (MIT), USA.

8.4 Parameters for benchmarking - Define parameters for benchmarking (i) research, (ii) curriculum - separately for UG, Masters, and Ph.D programs, (iii) teaching-learning processes.

Some of the following parameters are considered for research benchmarking:

Impact of research output on society and contribution in nation building; publications and its citations; and h-indices of researchers.

Some of the following parameters are considered for curriculum and teaching-learning processes benchmarking:

The credit structure and contents of the UG/PG and Ph.D programs are decided from pedagogical matters evolving from time to time for meeting the changing societal needs at national and international levels. The teaching-learning processes are suitably adapted in view of the changing curricula.

8.5 Benchmarking: Analysis and findings - Perform benchmarking and report the analysis/ findings for the last 5 (or 10) years.

No analysis data is currently available.

Section-9

Feedback Systems and Results

9. Feedback systems and results

9.1 System for feedback from UG students and its results.

Feedback for every course is collected through an online feedback survey system wherein the students are asked to answer an elaborative questionnaire (objective and subjective) about the Course Organization and Delivery, Attendance/ Evaluation Policy, Practical, Tutorials, etc. Each faculty is rated based on his/ her teaching/ interaction in class. Students are free to express their view on course coordinator and teaching styles. The feedback/ responses are analyzed, and based on this teaching excellence awards are conferred to encourage improvement in teaching.

9.2 System for feedback from PG, Master's and Ph.D, students, and their outcome.

Same as mentioned above.

9.3 System for feedback from recruiters - (i) on-campus, and (b) off-campus - separately for UG and PG graduates; and the results.

Data is normally collected centrally by the Training and Placement (T&P) Cell of IIT Delhi.

9.4 Mechanism of obtaining industry feedback and the findings.

Data is collected by the Training and Placement (T&P) Cell of IIT Delhi.

9.5 Alumni feedback mechanism and its outcome.

Frequent interactions with alumni through Civil Engineering Society (CES) and other alumni events help in collecting information and feedback. The feedback is used in reviewing the curriculum and used as input while starting new areas of frontier research.

Section-10

Vision for Next 5-10 Years

10. Vision for next 5-10 years

10.1 Goals and benchmarking for future in relation to (i) curricula, (ii) research, (iii) outreach, and (iv) processes for regular internal assessment.

The Department strives to become a leader in imparting quality education rooted in engineering basics and performing cutting edge interdisciplinary research in infrastructure and built environment, to improve and maintain the quality of life in a safe and sustainable manner. The Departmental plans includes (i) upgradation current B.Tech/M.Tech/M.S/Ph.D programs, (ii) establishing new centers of excellence/virtual centers, (iii) increased number of short term courses for engineering college teachers, working professionals through QIP/FITT cells.

For the benchmarking purpose, practices adopted by leading universities across the world are used. These practices adopted by other leading universities are modified/refined to comply with existing government rules and regulations.

10.2 Vision of curricula and teaching-learning processes - UG, PG and Ph.D; innovations proposed.

The Department would like to incorporate more slots into the curriculum where students will be allowed to explore their area of interest through group based projects. This approach will help in bringing theoretical concepts taught in class to actual applications. At Masters Level, self-study modules will be introduced, where students will be expected to work on open ended problems relevant to industry/society. Also, more minor specializations within B.Tech curriculum will be offered which are primarily interdisciplinary in nature.

10.3 Areas identified for improvement in (i) curriculum, (ii) teaching-learning processes.

- Floating of PG elective courses on environmental and health, environmental law and policy; aerosols; emerging molecules; transportation planning (urban, and interurban with sustainability focus); traffic engineering and analysis (local design oriented); pavement materials characterization and engineering; information and communication technology (ICT) applications; airport systems engineering.
- Setting up of a 'Decision Theatre' for simulating environmental scenarios based on forecast assisting the decision makers to discuss realistic policy related issues in areas of air, water and solid waste.

10.4 New areas for research and Masters Program and industry participation in these.

- Integrated 5 years Masters Program in Sustainable Urban Engineering
- New 2 years Masters Program in (i) Highway Engineering and Management; (ii) Transport Logistics and Management, (iii) Climate Change and Integrated Watershed Management
- Sponsored PG program for in-service officers from local, state and central agencies

10.5 Projections for (i) funded projects, (ii) journal publications.

The Department plans to increase manifold the number of funded research projects and the number of refereed international publications in next 5 years.

10.6 Projected graduation numbers - Ph.D, M.Tech and B.Tech

The Department plans to increase the graduation numbers of Masters Students and the Ph.D students in next 5 years.

10.7 Projected faculty profile, and areas for recruitment of faculty.

Additional faculty members will be recruited by the Department who will strengthen the Department through new research frontiers. The new areas for recruitment among various sections are given below.

Environmental Engineering: Emerging pollutants in the environment; Aerosol and health; Water sufficient, clean and sustainable cities; Sustainable indicators for growing cities; Indoor air quality monitoring and modeling protocol; Carbon sequestration and integrated waste management.

Geotechnical Engineering: Sustainable geotechnology; Deep / pile foundations; Landslide mechanisms; Landfills; Ash ponds; Stability of coal mine waste; Fluid flow through rocks; Oil and gas flow and migration; Fossil fuel behavior; Deep underground structures and nuclear repositories; Reliability based design for the vertical expansion of existing municipal solid waste landfills; Traffic / construction-induced vibration in urban environment; Dynamic soil-pile interaction in liquefiable ground; Energy foundation and blast and impact analysis.

Structural Engineering: Performance-based structural engineering and materials; Fire engineering and blast mitigation; Soil-structure interaction, retrofitting and dynamic testing of structures; High performance cement based composites; Nanotechnology; Fiber reinforced polymers; Ultra-high-strength and performance concrete; Microstructure and micro-mechanics of material; Nonlinear dynamics and stability; Offshore structural dynamics; Inverse problems in mechanics; Computational damage detection; Sensor technology for system identification and monitoring; Uncertainty quantification; Green buildings; Climate change adaptability; Asset management; Automation in construction; Virtual design and construction; Lean construction; Sustainable building design; Modern construction project management; Virtual simulation and analysis of construction process.

Transportation Engineering: Sustainable transportation alternatives; Information and communication technology (ICT) applications; Traffic networks modeling and travel information systems; New pavement design methods and materials; Urban freight logistics; Health impacts of transport systems; GIS in transportation and accident analysis; Remote sensing data recording in traffic; Social stability and economic viability of urban planning integrated with transport; Fuzzy, neural network applications in transport engineering;

Heterogeneous traffic flow modeling; Mass transit network planning and high capacity bus system.

Water Resources Engineering: Geo-informatics in water and natural resources management; Eco-hydrodynamic modeling of wetland and riverine eco-systems; Multi-objective analysis of large scale multi-purpose, multi-component water resources systems; Phyto-remediation and bio-remediation of soils; Flow through natural barriers in landfills; Sub-surface drainage and artificial recharge; Sustainable development; Snow and glacier modeling and snow avalanche; Environmental flows; Environmental impact assessment on hydrological regime; Data-mining, downscaling and nonlinear dynamic systems; Emerging molecules in surface water and groundwater; E-flows; Urban hydrology; Hydro-climatological modeling; Point and diffused pollution in surface water and ground water

10.8 Projections for future benchmarking (for comparison after 5 years) - institutions in India and abroad, and parameters for future comparison.

The projections are same as presented in Section 8.

10.9 Infrastructure and governance - limiting factors that affect achievement of benchmarks and methods to overcome these.

Currently, inadequacy of skilled staff and space hinders the achievement of the set benchmarks. Research orientation of the curriculum and hiring post-doctoral fellows would help us to achieve some benchmarks.

10.10 Working with other departments/centers and institutions in teaching and research.

1. Joint research projects at M.Tech level with Applied Mechanics, Mechanical Engineering, Biochemical Engineering and Biotechnology; Rural Development; Atmospheric Science etc.
2. Ph.D projects with Ecole de Mines Nantes, France.
3. M.Tech and Ph.D projects with several German universities.

10.11 New initiatives that the department/ center will undertake.

The Department will be establishing new centers of excellence/ virtual centers in areas like Climate change and transport infrastructure systems; Highway and bridge engineering; Advanced pavement materials; Intelligent transportation systems; Safe and sustainable transport infrastructure systems; Earthquake engineering; Bridge engineering; Construction materials; Construction technologies and management; eWater with support from Govt. of Australia.

10.12 Outreach goals and anticipated limitations in the attainment of these.

Industry-Academia Interaction Consortium (IAIC) will be established for integrated multi-stakeholder, multi-objective and sustainable development of the department.

10.13 Mechanisms for effective changes based on feedback received and development and implementation of corrective measures.

- Mid-term and end semester feedback will be collected from students enrolled in courses offered by the department. Additional questions will be introduced into feedback questionnaire that will be relevant to civil engineering department,
- Feedback on application and relevancy of courses will be collected from alumni during alumni meet held at regular intervals,
- Leading researchers and academicians will be invited to Department for technical presentations and feedback from eminent persons will be regarding curriculum and frontiers of teaching areas.

10.14 Questions to which the Department seeks answers from the Review Committee.

1. How are we performing in terms of teaching, research and outreach activities?
2. What are our strengths and weaknesses? And, what are suggestions for improvements?
3. Will this review lead to ranking of the Department/ Institute?
4. As Review Committee is different for Civil Engineering Departments of different IITs, how will the review committee assess performance of all IITs under one common platform?

Section-11

Information in Public Domain

11. Information in public domain

11.1 Minutes of all meetings.

Archives of the minutes of meetings are available in the Department for faculty to refer.

11.2 All reports archived in the central/department/center libraries.

Department-related reports are archived in the Department.

11.3 Past vision documents, review documents, Standing Review Committee documents.

Such documents are archived and available in the Department.

11.4 Any other documents developed by the department, a group/section of the department/center.

The documents developed by the Department previously are available.

11.5 Feedback documentation and action taken on the same, and its outcome.

Such was not the practice at Department level; however, course feedbacks are communicated to the Course Coordinators for necessary improvisations.

Annexures

Annexure-1

Details of Programs Offered

Programme Code: CE1 / (CE)
Bachelor of Technology in Civil Engineering
 Department of Civil Engineering

The overall credits structure

Undergraduate Core (UC)		Undergraduate Elective (UE)	
Category	Credits	Category	Credits
DC	63	DE	27
BS	20	HM	14
EAS	21	OC	33
HU	2		
TOTAL	106	TOTAL	74

Total credits = 180

Basic Sciences (BS) Core

CYL110	Physical Chemistry: Concepts and Applications	3-1-0	4
CYP100	Chemistry Laboratory	0-0-8	4
MAL110	Mathematics - I	3-1-0	4
MAL120	Mathematics - II	3-1-0	4
PHL110	Fields and Waves	3-1-0	4
PHP100	Physics Laboratory	0-0-4	2
TOTAL BS Core		12-4-8	20

Engineering Arts and Sciences (EAS) Core

AML110	Engineering Mechanics	3-0-2	4
AML120	Materials Science	3-0-2	4
AML150	Mechanics of Solids and Fluids	3-1-2	5
CSL101	Introduction to Computers and Programming	3-0-2	4
OR			
CSL102	Introduction to Computer Science	3-0-2	4
MEL110	Graphic Science	2-0-4	4
TOTAL EAS Core		14-1-12	21

Humanities and Social Sciences (HC) Core

HUN100	Introduction to Humanities and Social Sciences	0-0-4	2
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Departmental Core (DC)

CEC410	Colloquium (CE)	0-3-0	3
CED411	Major Project Part 1 (CE)	0-0-8	4
CEL212	Environmental Engineering	3-0-2	4
CEL222	Engineering Geology and Soil Mechanics	3-1-3	5.5
CEL231	Structural Analysis – I	3-1-2	5
CEL232	Concrete Material and Design	3-1-4	6
CEL241	Transportation Engineering – I	3-0-2	4
CEL251	Hydrology and Hydraulics	3-1-4	6
CEL271	Elements of Surveying	2-0-2	3
CEL321	Geotechnical Engineering	3-1-3	5.5
CEL331	Structural Analysis – II	3-1-2	5
CEL332	Design of Steel Structures	3-1-2	5
CEL351	Design of Hydraulic Structures	2-0-2	3
CEN110	Introduction to Civil Engineering	0-0-4	2
CEP200	Design Concepts in Civil Engineering	0-0-4	2
CET410	Practical Training (CE)	—	NC
TOTAL DC		31-10-42	62

Departmental Electives (DE)

CED310	Mini Project (CE)	0-0-6	3
CEL311	Advanced Water and Wastewater Engineering	3-0-2	4
CEL341	Transportation Engineering – II	3-1-0	4
CEL362	Construction Management	3-1-0	4
CEL411	Industrial Waste Management	3-0-0	3
CEL412	Environmental Assessment Methodologies	3-0-0	3
CEL421	Ground Improvement	3-0-2	4
CEL422	Rock Engineering	3-0-0	3
CEL423	Designs of Foundation, Earth and Earth Retaining Structures	3-1-0	4
CEL431	Advanced Structural Analysis	2-0-2	3
CEL432	Design of Prestressed Concrete and Industrial Structures	3-0-2	4
CEL433	Advanced Structural Design	3-0-2	4
CEL442	Traffic and Transportation Planning	2-1-0	3
CEL443	Transportation Safety and Environment	3-0-0	3
CEL451	Water Power Engineering	3-0-2	4
CEL453	Water Resources Management	3-1-0	4
CEL455	Introduction to Geographic Information Systems	2-0-2	3
CEL459	River Mechanics	2-0-2	3
CEL464	Construction Contract and Economics	2-1-0	3
CEL466	Construction Equipment and Methods	2-1-0	3
CEP452	Computational Aspects in Water Resources	1-0-4	3
CED412	Major Project Part 2 (CE)	0-0-16	8

B.Tech. in Civil Engineering (CE) CE1

Sem.											Lect Courses	L	T	P	Weekly contact	Credits	
I	CEN110 Intro to Civil Engg (0-0-4)2	AML110 Engg Mechanics (3-0-2)4	AML120 Materials Science (3-0-2)4	MAL110 Mathematics - I (3-1-0)4	PHL110 Fields & Waves (3-1-0)4	PHP100 Physics Lab (0-0-4)2	HUN100 * Intro Hu & So Sc (0-0-4)2				4	12	2	16	30	22	
II	AML150 Mech Fluid Solid (3-1-2)5	CSL101/102 Int Comp ProgSc (3-0-2)4	MEL110 Graphic Science (2-0-4)4	MAL120 Mathematics - II (3-1-0)4	CYL110 Physical Chem. (3-1-0)4	CYP100 Chemistry Lab (0-0-4)2					5	14	3	12	29	23	
III	CEL231 Struc. Analysis-I (3-1-2)5	CEL241 Transp. Engg. - I (3-0-2)4	CEL251 Hydraul. Hydraul. (3-1-4)6	CEL271 Ele. Surveying (2-0-2)3			OC-1 (3-0-0)3				6	17	3	10	30	25	
IV	CEL212 Environ. Engg. (3-0-2)4	CEL222 Eng Geo So Mech (3-1-3)5.5	CEL232 Conc Matl & Des. (3-1-4)6	CEL351 Des Hydraulic Str. (2-0-2)3	CEP200 Des Concept CE (0-0-4)2						5	13	3	15	31	23.5	
V	CEL321 Geotech. Engg. (3-1-3)5.5	CEL331 Struc. Analysis - II (3-1-2)5					OC-2 (3-1-0)4				5	15	5	5	25	22.5	
VI	CEL332 Design Steel Str. (3-1-2)5			DE-1 (3-1-0)4		OC-4 (3-1-0)4	OC-5 (3-0-0)3	OC-6 (3-0-2)4			6	17	4	4	25	23	
summer				CET410 Practical Training (CE)												NC	
VII	CEC410 Colloquium (CE) (0-3-0)3	CED411 Maj Proj Pt 1 (CE) (0-0-6)3	DE-2 (3-0-0)3	DE-3 (3-1-0)4	DE-4 (3-0-0)3	OC-7 (3-1-0)4	OC-8 (3-0-0)3				5	15	5	6	26	23	
VIII			DE-5 (3-0-0)3	DE-6 (3-1-0)4	DE-7 (3-0-0)3	OC-9 (3-0-2)4	DE-8 (3-0-2)4				5	15	1	4	20	18	

DC = 62, EAS = 21, BS = 20, HC = 2 (* either in 1st or 2nd sem.)
 Reqd. DE=28, plan DE = 8 courses, or 6 courses+Major Project Part 2.
 HU = 2@4 + 2@3 = 14 cr. from 4 courses.
 Reqd. OC=33, plan OC = 6@4 + 3@3 = 33 cr. from 9 courses.
TOTAL = 180.0

Master of Technology in Geotechnical and Geoenvironmental Engineering
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	45	9	6	60

Programme Core (PC)

CED701	Minor Project (CEG)	0-0-6	3
CED811	Major Project Part 1 (CEG)	0-0-12	6
CED812	Major Project Part 2 (CEG)	0-0-24	12
CEL701	Engineering Behaviour of Soils	3-0-0	3
CEL702	Slope Stability and Earth Dams	3-0-0	3
CEL703	Site Investigations and Ground Improvement	3-0-0	3
CEL704	Shallow and Deep Foundations	3-0-0	3
CEL705	Geoenvironmental Engineering	3-0-0	3
CEL706	Geosynthetics	3-0-0	3
CEL708	Earth Pressures and Retaining Structures	3-0-0	3
CEP701	Soil Engineering Laboratory	0-0-6	3
CEP702	Geoenvironmental and Geotechnical Engineering Laboratory	0-0-6	3
Total PC		21-054	48

Programme Electives (PE)

CEL610	Foundation Engineering *	3-0-0	3
CEL612	Construction Methods in Geotechnical Engineering *	3-0-0	3
CEL614	Geoenvironmental and Geohazards Engineering *	3-0-0	3
CEL707	Soil Dynamics and Geotechnical Earthquake Engineering	3-0-0	3
CEL709	Offshore Geotechnical Engineering	3-0-0	3
CEL712	Landfills and Ash Ponds	3-0-0	3
CEL714	Special Topics in Geotechnical and Geoenvironmental Engineering	3-0-0	3
CEL715	Soil Structure Interaction Analysis	3-0-0	3
CEL760	Finite Element Method in Geotechnical Engineering	3-0-0	3
CES810	Independent Study (CEG)	0-3-0	3

*To be offered for other specialisations only.

M.Tech. in Geotechnical and Geoenvironmental Engineering

CEG

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEL701 Engg Behaviour of Soils (3 - 0 - 0) 3	CEL703 Site Investigation & Grou Improv (3 - 0 - 0) 3	CEL705 Geoenvironmet Engineering (3 - 0 - 0) 3	CEP701 Soil Engg Lab (0 - 0 - 6) 3		PE-1 (3 - 0 - 0) 3	<i>OE-1</i> (3 - 0 - 0) 3	5	15	0	6	21	18
II	CEL704 Shallow & Deep Foundations (3 - 0 - 0) 3	CEL702 Slope Stability & Earth Dams (3 - 0 - 0) 3	CEL708 Earth Pressures & Retaining Str (3 - 0 - 0) 3	CEL706 Geosynthetics (3 - 0 - 0) 3	CEP702/ Geoenv & Geo tech Eng Lab (0 - 0 - 6) 3	CEL701* Minor Project (CEG) (0 - 0 - 6) 3	PE-2 (3 - 0 - 0) 3	5	15	0	6	21	18
Summer	CED811 Major Project Part 1(CEG)							0					
III	CED811 Maj Proj Part 1 (CEG) (0 - 0 - 12) 6					PE-3 (3 - 0 - 0) 3	<i>OE-2</i> (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED812 Maj Proj Part 2 (CEG) (0 - 0 - 24) 12							0	0	0	24	24	12

TOTAL = 60

* CED701 (For Part time students only)

Master of Technology in Structural Engineering
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	42	12	6	60

Programme Core (PC)

CED821	Major Project Part 1 (CES)	0-0-12	6
CED822	Major Project Part 2 (CES)	0-0-24	12
CEL717	Advanced Structural Analysis	3-0-0	3
CEL718	Design of Steel Structures	2-1-0	3
CEL719	Structural Dynamics	3-0-0	3
CEL721	Design of Concrete Structures	2-1-0	3
CEL722	Solid Mechanics in Structural Engineering	3-0-0	3
CEL724	Earthquake Analysis and Design	3-0-0	3
CEL733	Finite Element Method in Structural Engineering	2-1-0	3
CEP726	Structural Engineering Laboratory	0-0-6	3
Total PC		18-3-42	42

Programme Electives (PE)

CEL727	Design of industrial Structures	2-1-0	3
CEL729	Advanced Design of Bridges	2-1-0	3
CEL731	Prestressed/Composite Structures	3-0-0	3
CEL734	Mathematical and Numerical Methods	2-1-0	3
CEL771	Civil Engineering Materials	3-0-0	3
CEL817	Structural Safety and Reliability	3-0-0	3
CEL818	Design of Plates and Shells	2-1-0	3
CEL819	Concrete Mechanics	3-0-0	3
CEL822	Stability Theory in Structural Engineering	3-0-0	3
CEL824	Design of Offshore Structures	2-1-0	3
CEL825	Advance Finite Element Method and Programming	2-0-2	3
CEL823	Wind Resistant Design of Structures	3-0-0	3
CEL832	Design of Tall Buildings	2-1-0	3
CES820	Independent Study	0-3-0	3
CEL835	Structural Health Monitoring	2-0-2	3

M.Tech. in Structural Engineering

CES

Sem.	Courses (Number, abbreviated title, L-T-P, credits)						Lecture Courses	Contact h/week				Credits
	L	T	P	Total								
I	CEL717 Adv Structural Analysis (3 - 0 - 0) 3	CEL719 Structural Dynamics (3-0 - 0) 3	CEL721 Design of Concrete Str (2 - 1 - 0) 3	CEL733 Finite Ele Meth Struct Engg (3 - 0 - 0) 3	PE-1 (3 - 0 - 0) 3	PE-2 (3 - 0 - 0) 3	6	17	1	0	18	18
II	CEL718 Design of Steel Structures (2 - 1 - 0) 3	CEL722 Solid Mech in Structural Engg (3 - 0 - 0) 3	CEL724 Earthquake Anal & Design (3 - 0 - 0) 3	CEP726 Structural Engg Lab (0 - 0 - 6) 3	PE-3 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	5	14	1	6	21	18
Summer	CED821 Major Project Part 1 (CES)						0					
III	CED821 Maj Proj Part 1 (CES) (0 - 0 - 12) 6				PE-4 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED822 Maj Proj Part 2 (CES) (0 - 0 - 24) 12						0	0	0	24	24	12

TOTAL = 60

Master of Technology in Water Resources Engineering
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	40	15	6	61

Programme Core (PC)

CED841	Major Project Part 1 (CEW)	0-0-12	6
CED842	Major Project Part 2 (CEW)	0-0-24	12
CEL735	Hydrologic Processes and Modeling	3-0-0	3
CEL737	Optimization Techniques in Water Resources	3-0-0	3
CEL738	Advanced Hydraulics	3-0-0	3
CEL739	Groundwater Hydrology	3-0-0	3
CEL741	Surface Water Quality Modelling and Control	3-0-0	3
CEL742	Finite Elements in Water Resources	3-0-0	3
CEP740	Simulation Laboratory	1-0-6	4
Total PC		19-0-42	40

Programme Electives (PE)

CEL736	Environmental Dynamics and Management	3-0-0	3
CEL743	Economics Aspects of Water Resources Development	3-0-0	3
CEL744	Ground Water Flow and Pollution Modelling	3-0-0	3
CEL745	Water Management	3-0-0	3
CEL746	Hydroelectric Engineering	3-0-0	3
CEL747	Geographic information Systems	2-0-2	3
CEL748	Hydrologic Applications of Remote Sensing	3-0-0	3
CEL749	Water Resources Systems	3-0-0	3
CEL840	Stochastic Hydrology	3-0-0	3
CEP724	Water Resources Management Laboratory	1-0-4	3
CES840	Independent Study (CEW)	0-3-0	3

M.Tech. in Water Resources Engineering

CEW

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEL735 Hydro Process & Modeling (3 - 0 - 0) 3	CEL737 Optmz. Tech in Water Resour (3 - 0 - 0) 3	CEL739 Groundwater Hydrology (3 - 0 - 0) 3	CEP740 Simulation Lab I (1 - 0 - 6) 4	CEL741 Surf Water Qty Model & Cntrl (3 - 0 - 0) 3	PE-1 (3 - 0 - 0) 3	PE-2 (3 - 0 - 0) 3	6	19	0	6	25	22
II	CEL738 Advanced Hydraulics (3 - 0 - 0) 3	CEL742 Finite Elements in Water Resour (3 - 0 - 0) 3		PE-3 (3 - 0 - 0) 3	PE-4 (3 - 0 - 0) 3	PE-5 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	6	18	0	0	18	18
Summer	CED841 Major Project Part 1(CEW)							0					
III	CED841 Maj Proj Part 1 (CEW) (0 - 0 - 12) 6					PE-6 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED842 Maj Proj Part 2 (CEW) (0 - 0 - 24) 12							0	0	0	24	24	12

TOTAL =61

Programme Code : CEU

Master of Technology in Rock Engineering and Underground Structures
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OE	Total
Credits	45	9	6	60

Programme Core (PC)

CEL760	Minor Project in Rock Engineering and Underground Structures (CEU)	0-0-6	3
CEL851	Major Project Part 1 (CEU)	0-0-12	6
CEL852	Major Project Part 2 (CEU)	0-0-24	12
CEL751	Engineering Properties of Rocks and Rock Masses	3-0-0	3
CEL752	Slopes and Foundations	3-0-0	3
CEL753	Structural Geology	2-0-2	3
CEL754	Geotechnical Processes in Rock Engineering	3-0-0	3
CEL756	Excavation Methods and Machinery	3-0-0	3
CEL757	Field Exploration and Insitu Measurements	3-0-0	3
CEL758	Analysis and Design of Under Ground Structures	3-0-0	3
CEP751	Rock Mechanics Laboratory 1	0-0-6	3
CEP752	Rock Mechanics Laboratory 2	0-0-6	3
Total PC		20-0-50	45

Programme Electives (PE)

CEL651*	Rock Engineering	3-0-0	3
CEL760	Finite Element Method in Geotechnical Engineering	3-0-0	3
CEL761	Underground Space Technology	3-0-0	3
CEL762	Special Topics in Rock Engineering	3-0-0	3
CEL763	Environmental Rock Engineering	3-0-0	3
CEL801	Advanced Rock Mechanics	3-0-0	3
CES850	Independent Study (CEU)	0-3-0	3

* To be offered to other specialisations in Civil Engineering.

M.Tech. in Rock Engineering and Underground Structures

CEU

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEL751 Eng Prop Rock & Rock Masses (3 - 0 - 0) 3	CEL753 Structural Geology (2 - 0 - 2) 3	CEL757 Field Explor'n & ... Measurement (3 - 0 - 0) 3	CEP751 Rock Mech Lab 1 (0 - 0 - 6) 3	CEL754 Geotech Process in Rock Engg (3 - 0 - 0) 3	PE-1 (3 - 0 - 0) 3		5	14	0	8	22	18
II	CEL752 Slopes and Foundations (3 - 0 - 0) 3	CEL758 Anal & Design Undergrnd Str (3 - 0 - 0) 3	CEL756 Excav Methods & Machinery (3 - 0 - 0) 3	CEP752 / Rock Mech Lab 2 (0 - 0 - 6) 3	CED760* Minor Project (LEU) (0 - 0 - 6) 3	PE-2 (3 - 0 - 0) 3	<i>OE-1</i> (3 - 0 - 0) 3	5	15	0	6	21	18
Summer	CED851 Major Project Part 1(CEU)												
III	CED851 Maj Proj Part 1 (CEU) (0 - 0 - 12) 6					PE-3 (3 - 0 - 0) 3	<i>OE-2</i> (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED852 Maj Proj Part 2 (CEU) (0 - 0 - 24) 12							0	0	0	24	24	12

* CED 760 for Part-time students only.

TOTAL = 60

Master of Technology in Construction Engineering and Management
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	42	12	6	60

Programme Core (PC)

CED871	Major Project Part 1 (CET)	0-0-12	6
CED872	Major Project Part 2 (CET)	0-0-24	12
CEL767	Construction and Contract Management	3-0-0	3
CEL769	Project Planning and Control	2-1-0	3
CEL771	Civil Engineering Materials	3-0-0	3
CEL772	Quantitative Methods in Construction Management	2-1-0	3
CEL774	Construction Engineering Practices	3-0-0	3
CEL778	Construction Methods and Equipment	3-0-0	3
CEL779	Construction Economics and Finance	3-0-0	3
CEP775	Construction Engineering and Information Technology Laboratory	0-0-6	3
Total PC			19-2-48 45

Programme Electives (PE)

CEL766	Systems Design and Value Analysis	3-0-0	3
CEL768	Recent Advances in Construction Materials	3-0-0	3
CEL773	Management of Quality and Safety in Construction	2-1-0	3
CEL776	Functional Planning, Building Services and Maintenance Management	3-0-0	3
CEL777	Building Science	3-0-0	3
CES870	Independent Study (CET)	0-3-0	3
CEL866	Infrastructure Development and Management	3-0-0	3

M.Tech. in Construction Engineering and Management

CET

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEL769 Proj Planning & Control (2 - 1 - 0) 3	CEL772 Quant. Methods in Const Mgmt (2 - 1 - 0) 3	CEL771 Civil Engg Materials (3 - 0 - 0) 3	CEL774 Construction Engg Practices (3 - 0 - 0) 3		PE-1 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	6	16	2	0	18	18
II	CEL778 Const Methods & Equipments (3 - 0 - 0) 3	CEL767 Construction & Contract Mgmt (3 - 0 - 0) 3	CEL779 Construction Econ & Finan (3 - 0 - 0) 3	CEP775 Const Engg & Info Tech Lab (0 - 0 - 6) 3		PE-2 (3 - 0 - 0) 3	PE-3 (3 - 0 - 0) 3	5	15	0	6	21	18
Summer	CED871 Major Project Part 1(CET)							0					
III	CED871 Maj Proj Part 1 (CET) (0 - 0 - 12) 6					PE-4 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED872 Maj Proj Part 2 (CET) (0 - 0 - 24) 12							0	0	0	24	24	12

TOTAL =60

Programme Code : **CEV**

Master of Technology in Environmental Engineering and Management
Department of Civil Engineering

The overall credit structure

Category	PC	PE	OC	Total
Credits	42	12	6	60

Programme Core (PC)

CED891	Major Project Part 1 (CEV)	0-0-12	6
CED892	Major Project Part 2 (CEV)	0-0-24	12
CEL793	Air Pollution and Control	3-0-2	4
CEL794	Solid and Hazardous Waste Management	3-0-0	3
CEL795	Water and Waste-Water Treatment Processes	3-0-0	3
CEL796	Advanced Waste Water Treatment	3-0-0	3
CEL886	Environmental Systems Analysis	3-0-2	4
CEP789	Environmental Chemistry and Microbiology	1-0-4	3
CEP790	Advanced Environmental Engineering Laboratory	1-0-6	4
Total PC		17-0-50	42

Programme Electives (PE)

CEL797	Environmental Impact Assessment	3-0-0	3
CEL879	Industrial Waste Management and Audit	3-0-0	3
CEL889	Emerging Technologies for Environmental Management	3-0-0	3
CEL891	Thermal Techniques for Waste Management	3-0-0	3
CEL892	Air Quality Modelling	3-0-0	3
CEL894	Management of Water, Waste and Sanitation Utilities	3-0-0	3
CEL895	Ecology and Eco-System Dynamics	3-0-0	3
CEL896	Design of Water and Waste Water Facilities	3-0-0	3
CEL897	Membrane Processes for Water and Waste Treatment	3-0-0	3
CEL898	Life Cycle Analysis and Design for Environment	3-0-0	3
CEL899	Environmental Risk Assessment	3-0-0	3
CES890	Independent Study (CEV)	0-3-0	3

M.Tech. in Environmental Engineering and Management

CEV

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEP789 Environ. Chemis. & Microbiology (1 - 0 - 4) 3	CEL795 Water & Waste Treat Process (3 - 0 - 0) 3	CEL793 Air Pollution and Control (3 - 0 - 2) 4	CEL886 Environmental Systems Analys. (3 - 0 - 2) 4	PE-1 (3 - 0 - 0) 3			4	13	0	8	21	17
II	CEL796 Adv. Wastewater Treatment (3 - 0 - 0) 3	CEP790 Adv. Environ. Engg Lab. (1 - 0 - 6) 4	CEL794 Solid & Hazard. Waste Mgmt. (3 - 0 - 0) 3	PE-2 (3 - 0 - 0) 3	PE-3 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	5	16	0	6	22	19	
Summer	CED891 Major Project Part 1(CEV)							0					
III	CED891 Maj Proj Part 1 (CEV) (0 - 0 - 12) 6				PE-4 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	2	6	0	12	18	12	
IV	CED892 Maj Proj Part 2 (CEV) (0 - 0 - 24) 12						0	0	0	24	24	12	

TOTAL = 60

Master of Technology in Construction Technology and Management

Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	42	09	09	60

Programme Core (PC)

CED701	Minor Project (CEC)	0-0-6	3
CED875	Major Project Part 1 (CEC)	0-0-12	6
CED876	Major Project Part 2 (CEC)	0-0-24	12
CEL767	Construction and Contract Management	3-0-0	3
CEL769	Project Planning and Control	2-1-0	3
CEL772	Quantitative Methods in Construction Management	2-1-0	3
CEL773	Management of Quality and Safety in Construction	2-1-0	3
CEL774	Construction Engineering Practices*	3-0-0	3
CEL778	Construction Methods and Equipment	3-0-0	3
CEL779	Construction Economics and Finance	3-0-0	3
CEP770	Computation Laboratory for Construction Management	0-0-6	3
EEL792	Power System Protection #	3-0-0	3
ITL709	Maintenance Planning and Control**	3-0-0	3
Total PC		18-3-42	42

Programme Electives (PE)

CEL612	Construction Methods in Geotechnical Engineering*	3-0-0	3
CEL766	Systems Design and Value Analysis*	3-0-0	3
CEL768	Recent Advances in Construction Materials*	3-0-0	3
CEL771	Civil Engineering Materials*	3-0-0	3
CEL776	Functional Planning, Building Services and Maintenance Management*	3-0-0	3

Programme Electives (PE)

CEL777	Building Science*	3-0-0	3
CES874	Independent Study (CEC)*	0-3-0	3
EEL743	Power Electronic Devices and Dc Converters#	3-0-0	3
EEL744	AC Controllers#	3-0-0	3
EEL745	Electrical Drives System#	3-0-0	3
EEL746	Nonconventional Energy Systems and Energy Conservation#	3-0-0	3
EEL747	Electrical Systems for Construction Industries#	3-0-2	4
EEL790	Optoelectronic Instrumentation#	3-0-0	3
EEL791	Power System Analysis#	3-0-0	3
EEL794	High Voltage DC Transmission#	3-0-0	3
EEL841	Solid State Controllers of Drives#	3-0-0	3
EEL845	Special Electromechanical Devices#	3-0-0	3
EEL891	Selected Topics in Power System#	3-0-0	3
EEL899	Distribution Automation#	3-0-0	3
EEL841	Electrical Machines Laboratory#	0-0-3	1.5
EEL842	Power Electronics Laboratory#	0-0-3	1.5
EEL843	Electric Drives Laboratory#	0-0-3	1.5
ITL752	Bulk Materials Handling**	2-0-2	3
MEL661	Materials Management**	2-0-2	3
MEL674	Principles of Management**	3-0-0	3
MEL710	Air Conditioning*	3-0-2	4
MEL711	Refrigeration and Air Conditioning Technologies**	3-0-2	4
MEL752	Quality Assurance**	3-0-2	4
MEL754	Operations Planning and Control**	3-0-2	4
MEL776	Design and Metallurgy of Welded Joints**	3-0-2	4
MEL787	Welding and Allied Processes**	3-0-2	4
MEL808	Refrigeration Systems and Components Design**	2-0-4	4
MEL866	Maintenance Management**	3-0-0	3

* For Civil Engg. background students

For Electrical Engg. background students

** For Mechanical Engg. background students

Note : Students may take a course as OC from the above list of PE courses provided the course is not from their own background.

M.Tech. in Construction Technology and Management

CEC

Sem.	Courses (Number, abbreviated title, L-T-P, credits)						Lecture Courses	Contact h/week				Credits	
	L	T	P	Total	L	T		P	Total				
I	CEL773 Mgmt Qty & Safety Constr. (2 - 1- 0) 3	CEL769 Project Planning and Control (2 - 1- 0) 3	CEL772 Quant Math Const Mgmt. (2 - 1- 0) 3	CEL774*/ EEL792 #/ ITL709** (3 - 0 - 0) 3	PE-1 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	6	15	3	0	18	18	
II	CEL778 Const Methods & Equipments (3 - 0 - 0) 3	CEL767 Construction & Contract Mgmt (3 - 0 - 0) 3	CEL779 Construction Econ & Finan (3 - 0 - 0) 3	CEP770 Const Engg & Info Tech Lab (0 - 0 - 6) 3		PE-2 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	5	15	0	6	21	18
Summer	CED875 Major Project Part 1(CEC)						0						
III	CED875 Maj Proj Part 1 (CEC) (0 - 0 - 12) 6					PE-3 (3 - 0 - 0) 3	OE-3 (3 - 0 - 0) 3	2	6	0	12	18	12
IV	CED876 Maj Proj Part 2 (CEC) (0 - 0 - 24) 12							0	0	0	24	24	12

TOTAL = 60

Master of Technology in Transportation Engineering
Department of Civil Engineering

The overall credits structure

Category	PC	PE	OC	Total
Credits	41	12	9	62

Programme Core (PC)

CEL772	Quantitative Methods in Construction Management	2-1-0	3
CEL781	Urban and Regional Transportation Planning	2-0-2	3
CEL782	Pavement Materials and Construction Techniques	2-0-2	3
CEL783	Traffic Engineering	3-0-2	4
CEL784	Design and Maintenance of Pavements	3-0-2	4
CEL785	Advanced Transportation Modelling	2-0-2	3
CEL786	Geometric Design of Streets and Highways	2-0-2	3
Total PC			16-1-48 41

Programme Electives (PE)

CEL787	Transportation Safety and Environment	3-0-0	3
CEL788	Public Transportation Systems	3-0-0	3
CEL789	Transportation Systems Management	3-0-0	3
CEL843	Traffic Modelling and Simulation	3-0-0	3
CEL844	Transportation Economics and Finance	3-0-0	3
CEL845	Transportation and Traffic Infrastructure Design	3-0-0	3
CEL729	Advanced Design of Bridges	3-0-0	3
CES880	Independent Study	3-0-0	3

M.Tech. in Transportation Engineering

CEP

Sem.	Courses (Number, abbreviated title, L-T-P, credits)							Lecture Courses	Contact h/week				Credits
	L	T	P	Total									
I	CEL772 Quant Methods Const Mgmt (2 - 1 - 0) 3	CEL781 Urban & Region Transpt Planning (2 - 0 - 2) 3	CEL782 Pavement Matl & Const Tech. (2 - 0 - 2) 3	CEL783 Traffic Engineering (3 - 0 - 2) 4	PE-1 (3 - 0 - 0) 3	OE-1 (3 - 0 - 0) 3	6	15	1	6	22	19	
II	CEL784 Des & Maint of Pavements (3 - 0 - 2) 4	CEL785 Adv Transptn Modelling (2 - 0 - 2) 3	CEL786 Geomet. Desgr Street Higway (2 - 0 - 2) 3	PE-2 (3 - 0 - 0) 3	PE-3 (3 - 0 - 0) 3	OE-2 (3 - 0 - 0) 3	6	16	0	6	22	19	
Summer	CED881 Major Project Part 1(CEP)							0					
III	CED881 Maj Proj Part 1 (CEP) (0 - 0 - 12) 6				PE-4 (3 - 0 - 0) 3	OE-3 (3 - 0 - 0) 3	2	6	0	12	18	12	
IV	CED882 Maj Proj Part 2 (CEP) (0 - 0 - 24) 12						0	0	0	24	24	12	

TOTAL =62

Postgraduate Diploma in Metro Rail Transport : Technology and Management

Department of Civil Engineering

The overall credits structure

Category	PC	PE	Total
Credits	24	12	36

Programme Core (PC)

CEL767	Construction and Contract Management	3-0-0	3
CEL769	Project Planning and Control	3-0-0	3
CEL781	Urban and Regional Transportation Planning	2-0-2	3
CEP770	Construction Engineering and Information Technology Lab	0-0-6	3
SML731	Human Resources Management	3-0-0	3
CEC760	Seminar	0-0-6	3
CEN760	Metro Professional Practices	0-2-0	2
CET760	Practical Training	0-0-8	4
Total PC		11-2-22	24

Programme Electives (PE)

CEL773	Management of Quality and Safety in Construction	3-0-0	3
CEL774	Construction Engineering Practices	3-0-0	3
CEL788	Public Transportation Systems	3-0-0	3
CEL886	Environmental Systems Analysis	3-0-2	4
CEL898	Life Cycle Analysis and Design for Environment	3-0-0	3
CEL761	Underground Space Technology	3-0-0	3
CEL612	Construction Methods in Geotechnical Engineering	3-0-0	3
CEL756	Excavation Methods and Machinery	3-0-0	3
CEL747	Geographical Information System	2-0-2	3
EEL747	Electrical Systems for Construction Industries	3-0-2	4
EEL745	Electrical Drives System	3-0-0	3
EEL746	Nonconventional Energy Systems and Energy Conservation	3-0-0	3
MEL710	Air Conditioning	3-0-2	4
MEL711	Refrigeration and Air Conditioning Technologies	3-0-2	4
MEL746	Design for Noise, Vibration and Harshness	3-0-2	4
SML826	Business Ethics	3-0-0	3
SML835	Labour Legislation and Industrial Relations	2-0-2	3
SML845	Total Project Systems Management	2-0-2	3

P.G. Diploma in Metro Rail Transport

CEX

Sem.	Courses (Number, abbreviated title, L-T-P, credits)								Lecture Courses	Contact h/week				Credits
	L	T	P	Total	L	T	P	Total						
I	CEL769 Project Plng & Control (3 - 0 - 0) 3	CEL781 Urban & Regional Transport Plng (2 - 0 - 2) 3	CEP770 Const. Engg. & Infn. Tech. Lab (0 - 0 - 6) 3	CEN760 Metro Profes'nal Practices (0 - 2 - 0) 2		PE-1 (3 - 0 - 0) 3	PE-2 (3 - 0 - 0) 3	5	15	0	6	21	18	
II	CEL767 Const. & Contract Mgmt. (3 - 0 - 0) 3	SML731 Human Resources Mgmt. (3 - 0 - 0) 3	CEC760 Seminar (0-0-6)3			PE-3 (2 - 0 - 0) 3	PE-4 (3 - 0 - 0) 3	5	15	0	6	21	18	
Summer	CET760 (Practical Training) (0 - 0 - 8) 4													

TOTAL = 36

Annexure-2

List of Staff

S. No.	Name	Cadre/Designation	Office/Labs
1.	Rajveer Aggarwal	B, Sr. Tech. Suptd.	Simulation Lab
2.	Jeet Ram	B, Jr. Suptd.	Store
3.	Malli Ram	D, Cl. IV Attd.	Office
4.	Teeka Ram	D, Cl. IV Attd.	Office
5.	D.S. Gusain *	B, Jr. Tech. Suptd.	Geotechnical Lab
6.	D. Biswas	B, Jr. Tech. Suptd.	Geotechnical Lab
7.	Manoj Kumar Neelam	B, Jr. Tech. Suptd.	Geotechnical Lab
8.	MunniLal	D, Cl. IV Attd.	Geotechnical Lab
9.	Lal Singh	C, JLA	Structure Lab
10.	Biri Singh	C, SLA	Structure Lab
11.	Goutam Barai	B, Tech. Suptd.	Structure Lab
12.	Nitin Chourasia	B, Jr. Tech. Suptd.	Structure Lab
13.	Mansukh Surin	C, JLA	Structural Lab
14.	Yad Ram	D, Cl. IV Cleaner	Structure Lab
15.	Sanjay Kr. Gupta	B, Jr. Tech. Suptd.	Environmental Lab
16.	Ishwar Singh	Mechanic	Environmental Lab
17.	S.S. Shukla	D, Cl. IV Attd.	Environmental Lab
18.	Kaushik Pahari	B, Jr. Tech. Suptd.	Transportation Lab
19.	Siya Ram	C, JLA	Transportation Lab
20.	Rajeev Kumar Sharma	B, Jr. Tech. Suptd.	Surveying Lab
21.	Amit Bundela	B, Jr. Tech. Suptd.	Computational Lab
22.	N.R. Gehlot	B, Jr. Tech. Suptd.	Computational Lab
23.	Satish Kumar Gupta	D, Cl. IV Attd.	Workshop

* Retired and reemployed.

Annexure-3

Refereed Journal Publications (2008 - 2013)

Environmental Engineering

1. Ahluwalia, P., Setia, A., Nema, A.K. (2013). Assessment of relative hazard potential of popular e-waste categories during landfilling; *Asian Journal of Water, Environment and Pollution*, 10 (3), 81-93.
2. Chabukdhara, M., Nema, A.K. (2013). Heavy metals assessment in urban soil around industrial clusters in Ghaziabad, India: Probabilistic health risk approach; *Ecotoxicology and Environmental Safety*, 87, 57-64.
3. George, K.V., Patil, D.D., and Alappat, B. J. (2013). PM10 in the Ambient Air of Chandrapur Coal Mine and its Comparison with other Environments. *Environment Monitoring Assessment*, 185(2), 1117-1128.
4. Kumar, P., Jain, S., Gurjar, B. R., Sharma, P., Khare, M., Morawska, L. (2013). New Directions: Can a Blue Sky Return to a Indian Megacities? *Atmospheric Environment*, 71, 1-4.
5. Kaushal, R.K., Nema, A.K. (2013). Multi-stakeholder decision analysis and comparative risk assessment for reuse-recycle oriented e-waste management strategies: A game theoretic approach. *Waste Management and Research*, 31 (9), 881-895.
6. Kaushal, R.K., Nema, A.K. (2013). Game theory-based multistakeholder planning for electronic waste management; *Journal of Hazardous, Toxic, and Radioactive Waste*, 17 (1), 21-30.
7. Kaushal, R.K., Nema, A.K. (2013). Strategic analysis of computer waste management options: Game-theoretic approach; *Journal of Environmental Engineering (United States)*, 139 (2), 241-249.
8. Ravindran, S., Pariyarath, R. V., Kumar, A., and Nema, A. K. (2013). Health Risk Estimation of Pesticides Exposure from Ganges Water. *NEBIO*, Special Online Issue.
9. Shah, I. K., Pre, P., and Alappat, B.J. (2013). Steam Regeneration of Adsorbents: An Experimental and Technical Review, *Chemical Science Transactions*, 2(4), 1078 - 1088.
10. Sharma, R., Chandel, M. K., Delebarre, A., and Alappat, B. J. (2013). 200 MW Chemical Looping Combustion based thermal power plant for clean power generation. *International Journal of Energy Research*, 37, 49-58.
11. Sharma, S., Sharma, P., Khare, M., (2013). Hybrid modeling approach for effective simulation of reactive pollutants like Ozone. *Atm. Env*, 80, 408-14.
12. Singh, R. K., Datta, M., and Nema, A. K. (2013). Evaluating groundwater contamination hazard rating of MSW landfills using a new system - case studies, *Journal of Hazardous, Toxic and Radioactive Waste, ASCE*, 17(1), 62-73.
13. Sethi, S., Kothiyal, N.C., Nema, A.K. (2013). Moisture flow in landfill simulating bioreactors containing municipal solid waste; *Journal of Solid Waste Technology and Management*, 39 (3), 173-181. Document
14. Sethi, S., Kothiyal, N.C., Nema, A.K. (2013). Stabilization of municipal solid waste in bioreactor landfills - An overview; *International Journal of Environment and Pollution*, 51 (1-2), 57-78.
15. Sethi, S., Kothiyal, N.C., Nema, A.K., Kaushik, M.K. (2013). Characterization of municipal solid waste in Jalandhar City, Punjab, India; *Journal of*

- Hazardous, Toxic, and Radioactive Waste*, 17 (2), 97-106.
16. Chabukdhara M. and Nema A.K. (2012). Assessment of heavy metal contamination in river sediments, Achemometric and geochemical approach. *Chemosphere*, 87, 945-953.
 17. Chabukdhara M. and Nema A.K. (2012). Heavy Metals in Water, Sediments and Aquatic Macrophytes: A Case Study in River Hindon, India. *Journal of Hazardous, Toxic and Radioactive Waste*, ASCE, 16, 273-281.
 18. Chabukdhara M. and Nema A.K. and Gupta S.K. (2012). Metal Contamination in Market Based Vegetables in an Industrial Region, India. *Bulletin of environmental contamination and Toxicology*, 89, 129-132.
 19. Dhinadhayalan M. and Nema A.K. (2012). Decentralized wastewater management new concepts and innovative technological feasibility for developing countries. *Sustainable Environment Research*, 22(1), 39-44.
 20. George, K.V., Patil, D.D., Kumar, P., and Alappat, B. J. (2012). Field Comparison of Cyclonic Separator and Mass Inertial Impactor for PM10 Monitoring. *Atmospheric Environment*, 60, 247-252.
 21. Gothwal, R., Gupta, A., Kumar, A., Sharma, S., and Alappat, B. J. (2012). Feasibility of Dairy Waste Water (DWW) and Distillery Spent Wash (DSW) Effluents in Increasing the Yield Potential of *Pleurotus flabellatus* (PF 1832) and *Pleurotus sajor-caju* (PS 1610) on Bagasse. *3 Biotech, Springer*, 2(3), 249-257.
 22. Goyal, R., Khare, M., and Kumar, P. (2012). Indoor Air Quality Current Status, Missing Links and Future Road Map for India: Review Article. *Civil and Environmental Engineering*, 2(4).
 23. Gupta A. and Nema A.K. (2012). Assessment of Mineral Sequestration of Landfill CO₂ achievable using Alkaline Waste Residues. *European Journal of Scientific Research*, 73(4), 480-488.
 24. Kaushik, S., Khare, M., Gupta, A. B. (2012). Organic Matter Determination for Street Dust in Delhi. *J. Environmental Monitoring and Assessment*, 185(6), 5251-5264.
 25. Kumar A, Bishnoi, S., and Scrivener, K. L. (2012). Modeling early age hydration kinetics of alite. *Cement and Concrete Research*, 42(7), 903-918.
 26. Kumar, P., Kumar, A., and Lead, J. R. (2012). Nanoparticles in Indian Environment: Knowns, unknowns and awareness. *Environ. Sci. Technol. Viewpoint*.
 27. Kumar, A. (2012). Making a Case for Human Health Risk-based Ranking Nanoparticles in Water for Monitoring Purposes. *Environ. Sci. Technol. Viewpoint*.
 28. Shandilya, K., Gupta, A. B., Khare, M. (2012). Formation of Atmospheric Nitrate under High Particulate Matter Concentration. *World Review of Science, Technology and Sustainable Development (WRSTSD)*, 8(2/3/4), 148-165.
 29. Shandilya, K., Khare, M., Gupta, A. B. (2012). Organic Matter Determination for Street Dust in Delhi. *J. Environmental Monitoring and Assessment*, 185(6), 5251-5264.
 30. Sharma, R., Delebarre, A., and Alappat, B. J. (2012). Solid Waste Management for Carbon Credits. *Journal of the Institution of Public Health Engineers, India*, 2012-13 (2), 9-17.
 31. Srivastava A.K. and Nema A.K. (2012). Fuzzy parametric programming model for multi-objective integrated solid waste management under uncertainty, Expert Systems with Applications. 39(5), 4657-4678.

32. Sundaram, B., and Kumar, A. (2012). Engineered Nanomaterials-based Pollution in India. *Curr. Sci.*, 110(10).
33. Teng, J., Kumar, A., Zhang, H., Olson, M. S., and Gurian, P. L. (2012). Determination of Critical Rainfall Events for Quantitative Microbial Risk Assessment of Land-applied Soil Amendments. *J. Hydrolog. Engg.*
34. Varghese, G. K., and Alappat, B. J. (2012). The National Green Tribunal Act: Harbinger for the Days of Environmental Forensics in India? *Environmental Forensics Journal*, 13 (3), 209-215.
35. Anandan, A., and Kumar, A. (2011). Exposures to TiO₂ and Ag Nanoparticles: What are Human Health Risks? *Sci. & Soc.* 9(2), 155-162.
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Annexure-4

Conference Proceedings (2008 - 2013)

Environmental Engineering

1. Dayal, B. and **Kumar, A.** (2013), "Identifying Data Needs for Assessing Viral Infection Risks to Health Care Professionals", OCCUCON, New Delhi, India.
2. **Khare, M.** and Priyajeet Pandit (2013), "Building Partnership in Sustainable Urbanization- The Way Forward", Workshop on Urban Living, Planet Earth Institute, Luanda, Angola.
3. **Khare, M.** (2013), "IAQ in Sustainable built Environment: An Overview", International Workshop on Interactive Systems, Nano-solar Photovoltaic and Coatings for a Sustainable Built Environment, MANIT, Bhopal.
4. Kurpal, J. and **Kumar, A.** (2013), "National Seminar Clean Water and Health", New Delhi.
5. Sejwal, K. and **Kumar, A.** (2013), "Understanding the Role of Nanotechnology in Water Treatment and its Implication", National Conference - Relevance of Nanotechnology in Biology, New Delhi.
6. Singh, D. and **Kumar, A.** (2013), 2nd Water Research Conference, Singapore.
7. Sundaram, B. and **Kumar, A.** (2013), "Nanoparticles in Indian Water: An Emerging Contaminant Needing Regulatory Considerations", NEBIO. Special Online Issue.
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10. Chawla, J. and **Kumar, A.** (2012), "Carbon-based nanomaterials in consumer products: Risks to consumers, knowledge gaps, uncertainties and challenges", Theme Meeting on 2D Nanostructures: Graphene and beyond, Bangalore.
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12. Das, P., Bagdiya, N. and **Kumar, A.** (2012), "Toxicity of titanium dioxide nanoparticles on growth kinetics of activated biomass", NSTI-Nanotech 2012, www.nsti.org; ISBN 978-1-4665-6276-9 (Vol. 9, 2012).
13. **Khare, M.** (2012), "Indoor Air Quality Concerns", One Day Workshop on Indoor Air Quality, Ekconnect-IIT Delhi.
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17. Sharma, R., Delebarre, A. and **Alappat, B. J.** (2012), "Chemical-Looping Combustion in a Spouted Bed with a Central Riser Tube", 62nd Canadian Chemical Engineering Conference, Vancouver.
18. **Khare, M.** (2011), "Advances in Pollution Control Technologies for Developing and Emerging Economies", Tokyo Green Industry Conference, Tokyo, Japan.

19. **Khare, M.** (2011), "Role of Air Quality Models in Urban Air Quality Management", UKIERI Workshop, IIT Delhi, India.
20. **Khare, M.** (2011), "Standard Protocol for Indoor Air Quality", Intern. Conf. Sustainable Habitat, Modern Bamboo Structures for Mass Housing, ECOSAN and Sustainable Livelihood, Delhi.
21. **Khare, M.** (2011), "Strategies for Investigating Indoor Air Quality Problems", National Conference on Refrigeration and Air Conditioning (NCAR - 2011), IIT Madras.
22. **Khare, M.** (2011), "Sustainable Planning Initiatives of Growing Cities - Indian Experience", CfSD and ISTA Round Table Meet on Sustainability GOI Policy Makers Working Group, Delhi.
23. **Kumar, A., Anandan, A., Dayal, B., Singh, A. K., and Das, P.** (2011), "Emerging Contaminants and Human Health", National Conference on Environmental Legislation and Technology-Curtain Raiser, New Delhi, India.
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34. **Khare, M.** and Nagendra, S. (2009), "Comparative Evaluation of Gaussian, Stochastic and Artificial Neural Network based Line Source Models", 4th Indian International Conference on Artificial Intelligence (IICAI-09, Tumkur, India.

35. Sharma, R. and **Alappat, B. J.** (2009), "Carbon Credit Technologies and Waste Management", KELI-Association of Engineers Kerala, January 9-10, pp. 26-30.
36. Goyal, R. and **Khare, M.** (2008), "Indoor Air Quality Modeling Techniques", Interactive Applied Research Seminar on Addressing the Concerns of Industry in areas of Environment, Energy and Material Sciences, IIT Delhi, India.
37. **Khare, M.** (2008), "Air Pollution", National Conference on Sustainable Urban Environment: Issues and Management Strategies, NIT, Surat.
38. **Khare, M.** and Garg, A. (2008), "A Dynamic Puff Model for Low Level Emission Sources", Interactive Applied Research Seminar on Addressing the Concerns of Industry in Areas of Environment, Energy and Material Sciences, IIT Delhi, India.
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56. Biswas, S. and **Manna, B.** (2012), "Prediction of the Nonlinear Characteristic of Full-Scale Piles under Vertical Vibration of Rotating Machines using Continuum Approach". Indian Geotechnical Conference, New Delhi, India. pp. 935 - 938.
57. Choudhary, S. S. and **Manna, B.,** (2012), "Estimation of the Nonlinear Parameters of the Full-Scale Pile-Soil System under Vertical Excitations". Indian Geotechnical Conference, New Delhi, India. pp. 931 - 934.
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64. Mohanto, S., Singh, K., **Chakraborty, T.** And Basu, D. (2012), "Cyclic thermo-mechanical analysis of underground energy storage cavern." Proceedings of the 13th World Conference of the Associated research Centers for the Urban Underground Space Underground Space Development - Opportunities and Challenges, Marina Bay Sands, Singapore.

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69. Reddy, K. M. and **Ayothiraman, R.** (2012). "Effect of constant lateral load on pile behavior in sand under uplift load." Indian Geotechnical Conference, 616 - 619.
70. Sahoo, S. and **Manna, B.** (2012), "Dynamic Response of Nailed Soil Slopes under Earthquake Loading - State of Art." Indian Geotechnical Conference, New Delhi, India. pp. 243 - 246
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Annexure-5

Details of Sponsored Projects

IRD Projects

Project ID	Project Title	Sponsor	Start Date	Completion Date	Amount	Faculty	PI/CI	Nation
RP02135	Assessment of Industrial Pollution Load Discharge in the Ghaziabad Area	Central Pollution Control Board	25-8-08	31-3-10	Rs. 2049600	A. K. Nema	PI	India
						Mukesh Khare	CP	
RP02156	Model for Optimized Spacing of Transpiring Hydrophilic Trees on Vegetative Covers of MSW Landfills	Ministry of Environment & Forests(GOI)	16-10-08	15-10-11	Rs. 1409688	Shashi Mathur	PI	India
RP02192	Development of Mathematical Model for Phytoremediation of Heavy Metal Contaminated Sites	Department of Science & Technology (DST)	27-1-09	31-7-12	Rs. 1308240	Shashi Mathur	PI	India
						Rakesh Khosa	CP	
RP02196	Evaluation of Quantitative Dispersion Models for Urban Air Quality Assessment	UKIERI, British Council Division	6-2-09	30-11-12	Rs. 9794645	Mukesh Khare	PI	United Kingdom
RP02240	Seismic Behavior of Pile Groups in Clay	Department of Science & Technology (DST)	29-5-09	31-8-10	Rs. 35038	R. Ayothiraman	PI	India
RP02247	Experimental Investigation in Slurry Pipeline for Near-wall Lift of Particles	Department of Science & Technology (DST)	24-6-09	31-12-12	Rs. 2731000	D. R. Kaushal	PI	India
						B. R. Chahar	CP	
RP02274	Analysis and Model Tests on Granular Pile Group-mat-soft soil Foundation Reinforced with and without Geosynthetics	Department of Science & Technology (DST)	1-10-09	31-3-13	Rs. 1536000	J. T. Shahu	PI	India
						K.K. Gupta	CP	
RP02318	Implementation Virtual Design and Construction on Public Sector Projects in India	Autodesk India Pvt. Ltd.	3-3-10	8-5-13	Rs. 854400	K. C. Iyer	PI	India
						Anil Sawhney	CP	
RP02352	Development of a Framework for Integrating the Information for WAR (Winning, Augmenting and Renovation for Water Resources)	Department of Science & Technology (DST)	11-5-10	10-5-12	Rs. 1574400	A.K. Gosain	PI	India
P02354	Techno-Economic Feasibility of Reduction of Microbial Pollution from the Sewage Treatment Plants	Central Pollution Control Board	21-5-10	30-4-13	Rs. 1749600	A. K. Mittal	PI	India
						Arun Kumar	CP	

RP02374	Assessment of Environmental Impacts and Techno-Financial Feasibility of the Effluent Treatment Options at Coffee Estates	Central Pollution Control Board	14-7-10	30-6-12	Rs. 993000	Babu J. Alappat	PI	India
						A. K. Nema	CP	
						A. K. Mittal	CP	
RP02319	Development of Low Cost Remote Health Monitoring System for Civil/Mechanical/Aerospace Structures using Piezoceramic Sensors	DRDO, Ministry of Defense	1-9-10	28-2-13	Rs. 958400	Suresh Bhalla	PI	India
						Ashok Gupta	CP	
RP02408	Post Depassivation Service Life Prediction of Rebar Corroded RC Structures.	Department of Science & Technology (DST)	18-10-10	17-10-13	Rs. 1400000	B. Bhattacharjee	PI	India
						K. N. Jha	CP	
RP02421	Development of a Framework for Benchmarking (PLB) under National Ganga River Basin Authority (NGRBA) by IIT Delhi	Ministry of Environment & Forests(GOI)	16-11-10	31-10-12	Rs. 3840000	A. K. Mittal	PI	India
						Arun Kumar	CP	
						K. N. Jha	CP	
RP02443	Carbon Sequestration by Mineral Carbonation in Alkaline Industrial Waste	Department of Science & Technology (DST)	19-1-11	18-1-14	Rs. 7366000	A. K. Nema	PI	India
RP02440	The Mechanical Efficiency of Indian Fly-ashes in Concretes using Indian Cement	Lafarge Centre de Recherche	20-1-11	19-1-14	Rs. 2332800	Shashank Bishnoi	PI	France
						B. Bhattacharjee	CP	
RP02451	Earthquake based Isolation of Secondary Systems using Elastomeric and Sliding Systems (under DAE Young Scientist Research Award)	Department of Atomic Energy(GOI)	4-3-11	3-3-14	Rs. 1976000	Vasant Matsagar	PI	India
RP02474	Dynamic and Cyclic Properties of Solid Waste	Ministry of Earth Sciences	2-5-11	1-5-14	Rs. 7615700	G. V. Ramana	PI	India
						K.G. Sharma	CP	
						R. Ayothiraman	CP	
RP02476	Promoting Low Carbon Transport in India	UNEP, Technical University of Denmark	19-5-11	18-5-14	Rs. 5666398	Geetam Tewari	PI	Denmark
						R. R. Kalaga	CP	
						Dinesh Mohan	CP	
						Ambuj D. Sagar	CP	
RP02507	Enhancing the Use of Building Information Modeling in the Indian Construction Sector	Autodesk India Pvt. Ltd.	23-9-11	30-6-13	Rs. 4590000	K. C. Iyer	PI	India
RP02515	Development of Portable Dilution Sampler and Real Time Mass Measurement and Chemical Characterization of Aerosols from Automobiles	Department of Science & Technology (DST)	3-10-11	2-10-14	Rs. 2505000	Gazala Habib	PI	India

RP02533	Sustainable Construction and Reduction of Water Consumption	NBCC Ltd.	25-11-11	24-11-14	Rs. 3201936	B. Bhattacharjee	PI	India
						Shashank Bishnoi	CP	
RP02581	Evaluation of Emerging Industrialized Housing Technologies and Systems for Affordable and Sustainable Housing Stock in India and UK	UK-India Education & Res. Initiative (UKIERI)	1-2-12	31-1-14	Rs. 1640000	K. C. Iyer	PI	United Kingdom
RP02588	Influence of Building Information Modeling on Construction Project Management in India	Royal Institution of Chartered Surveyors, UK	1-2-12	31-1-13	Rs. 388872	Anil Sawhney	PI	United Kingdom
						K. C. Iyer	CP	
RP02523	Preparation of Guidelines for Use by Independent Agencies for Approval of DPRs under NGRBA	Ministry of Environment and Forest	29-2-12	28-10-12	Rs. 2069000	A. K. Mittal	PI	India
						K. N. Jha	CP	
RP02572	Experimental and Analytical studies for the Short and Long term Behavior of epoxy Bonded steel concrete composite Bridges	Department of Science & Technology (DST)	14-3-12	13-3-15	Rs. 1328680	A.K. Nagpal	PI	India
						B. Bhattacharjee	CP	
						Vasant Matsagar	CP	
RP02596	Physical Simulation of Ambient Dispersion of Respirable Suspended Particulate Matter Namely PM10 and PM2.5 in Urban Environment	UK-India Education & Res. Initiative (UKIERI)	1-4-12	31-12-12	Rs. 241000	Mukesh Khare	PI	United Kingdom
RP02591	STREAT-Sustainable Semi-Decentralized Sewage Treatment-Wastewater Reuse, Nutrient Recovery and Biogas Production in the Delhi Metropolitan Area	Ministry of Environment & Forests(GOI)	16-4-12	15-4-15	Rs. 2152800	Mukesh Khare	PI	India
						T.R. Sreekrishnan	CP	
RP02594	Investigation of Cement Lining Process in Ductile Iron Pipes	Jindal Saw Ltd.	16-4-12	30-11-13	Rs. 600000	Supratic Gupta	PI	India
RP02600	Automation of structural design iteration for Indian construction industry	Department of Science & Technology (DST)	25-4-12	24-4-15	Rs. 2150000	J. U. Maheswari	PI	India
						Vasant Matsagar	CP	
RP02599	Interactive Systems and Coatings for a Sustainable Build Environment	UK-India Education & Res. Initiative (UKIERI)	1-5-12	30-4-14	Rs. 739200	Mukesh Khare	PI	United Kingdom
RP02618	Integrated Wastewater Management Through SWAT Modeling of River Basins in India and Europe (Shushuk)	Department of Science & Technology (DST)	11-6-12	10-6-14	Rs. 2080000	A.K. Gosain	PI	India
RP02619	Seismic strengthening of Deficient reinforced Concrete frames by buckling restrained aluminum Dampers	Department of Science & Technology (DST)	11-6-12	10-6-15	Rs. 2020000	D. R. Sahoo	PI	India
RP02629	Investigation of Load Transfer Mechanism and Soil-Structure Interaction for Energy Piles	Department of Science & Technology (DST)	19-6-12	18-6-15	Rs. 1769000	T. Chakraborty	PI	India
RP02637	Seismic Response and Deformation Characteristics of	Department of Science &	27-6-12	26-6-15	Rs. 762000	B. Manna	PI	India

	Nailed Soil Slopes - Shaking Table Testing and Analysis	Technology (DST)						
RP02638	Application of Focused Ultrasound for Damage Detection in Concrete Media	Department of Science & Technology (DST)	27-6-12	26-6-15	Rs. 972000	Abhijit Ganguli	PI	India
RP02639	Innovative Bi-Directional Base Isolation System for Earthquake Protection of Structures	Department of Science & Technology (DST)	27-6-12	26-6-15	Rs. 576000	Vasant Matsagar	PI	India
RP02640	Development of Nanoparticles related Water Quality (NP-WQ) Framework for Protecting Source Drinking Water	Department of Science & Technology (DST)	2-7-12	1-7-13	Rs. 992600	Arun Kumar	PI	India
						A. K. Ganguli	CP	
						A. K. Mittal	CP	India
RP02648	Dynamic Response of Pile Foundations in Nonlinear Soil Media with Non-Reflective Boundary under Vertical Excitation of Rotating Machines	Board of Research in Nuclear Sciences (DAE)	6-8-12	5-8-15	Rs. 1738000	B. Manna	PI	India
RP02651	Performance-based Design of Special Concentrically Braced Frames for Enhanced Earthquake	Board of Research in Nuclear Sciences (DAE)	8-8-12	7-8-15	Rs. 1930000	D. R. Sahoo	PI	India
RP02654	Vertical Expansion of Existing Municipal Solid Waste (MSW) Landfills using Retention Systems	Science and Engineering Research Board,	21-8-12	20-8-15	Rs. 1336000	B. Munwar Basha	PI	India
RP02664	Blending of Fly-Ashes from Multiple Sources to Reduce Variability in Concrete Performance	Science and Engineering Research Board,	19-9-12	18-9-15	Rs. 1860000	Shashank Bishnoi	PI	India
RP02665	Understanding Nanoparticles Bacterial Interactions in Single and Dual Nanoparticles based Bacterial Toxicity Studies	Science and Engineering Research Board,	19-9-12	18-9-15	Rs. 1580000	Arun Kumar	PI	India
RP02668	Resource Building for Ecosystem and Human Health Risk Assessment with Special Reference to Microbial Contamination in the Community Development Theme under Indo-US 21 st Century Knowledge Initiative pro	University Grants Commission	9-10-12	8-10-15	Rs. 10540000	Arun Kumar	PI	India
						Mukesh Khare	CP	
RP02727	UK India Faculty Curriculum and Network Development Project for Climate and Carbon Management	British Council Division	24-12-12	23-12-14	Rs. 266100	A.K. Gosain	PI	United Kingdom
RP02702	Development of a Contaminated Site Classification and Remediation System	Human Settlement Management Institute, HUDCO House	11-1-13	10-1-15	Rs. 1831200	A. K. Nema	PI	India
						G. V. Ramana	CP	
						Manoj Datta	CP	
RP02697	Safeguarding Water Recourses in India with Green and Sustainable Technologies (SWINGS)	International Division, Dept. of Science & Techn.	17-1-13	16-1-16	Rs. 11524000	A. K. Mittal	PI	Spain

RP02728	Low Carbon Cement	Ecole Polytechnique Federale de Lausanne	15-3-13	14-6-14	Rs. 3952352	Shashank Bishnoi	PI	Switzerland
RP02738	Testing and Simulation of Building Performance of Affordable Housing Units	Tata Steel Ltd.	25-4-13	24-4-14	Rs. 5587500	D. R. Sahoo	PI	India
						Vasant Matsagar	CP	
						B. Bhattacharjee	CP	
						Shashank Bishnoi	CP	
RP02737	Identification, Evaluation and Strategic Management of Risks in Infrastructure Projects in India	National Buildings Construction Corporation Limited	1-5-13	30-4-16	Rs. 2964000	K. C. Iyer	PI	India
						Vipul Jain	CP	
RP02753	Receptor Modeling of Particulate Air Pollutants	UKIERI, British Council Division	7-6-13	6-6-15	Rs. 1616120	Mukesh Khare	PI	United Kingdom
						A. K. Nema	CP	

FITT Projects

S.N.	Project Title	Sponsor	Starting Year	Amount	Faculty
1	Providing road signage at Maulana Azad Road	New Delhi Municipal Corporation (NDMC)	2008-09	5,00,000	Geetam Tewari
2	Improved river runoff estimates using SWAT for all the river basins	M/s Winrock International India, New Delhi	2008-09	20,00,000	A. K. Gosain
3	Comprehensive Mobility Plan for Patna in the State of Bihar	Bihar Rajya Pul Nirman Nigam Ltd., Patna	2008-09	5,00,000	Geetam Tewari
4	Environmental Examination of the Construction of Boundary Wall in the City Green Area in Sector-95, Noida	Noida Authority, Noida	2008-09	15,70,876	A. K. Mittal
5	Climate change impact on river basin in semi-arid areas in India: Mitigation and adaptation measures to address current and future challenges	Bioforsk - Norwegian Institute for Agriculture and Environment Research, Norway	2008-09	1,19,30,370	A. K. Gosain
6	Environment & Safety examination, evaluation and development of project cost for beautification of express way in front of film city, Sector-16A NOIDA	NOIDA Development Authority	2008-09	7,35,000	K. N. Jha

7	Project Management Consultancy and Environmental Examination as per ISO 14000 for multi-level car park, Sector-38 NOIDA	NOIDA Development Authority	2008-09	83,00,000	A. K. Jain
8	Striver - Strategy and Methodology for Improved IWRM - An Integrated interdisciplinary assessment in four twinning river basins	M/s Instituto di Ricerca Sulle Acque (IRSA), Roma, Italy	2008-09	11,54,880	A. K. Gosain
9	Design of STP / ETP for M.A. Medical College Agroha	M/s Maharaja Agrasen Medical College, Agroha	2009-10	4,00,000	A. K. Mittal
10	Structural Design of Housing for Defense Personnel at Shillong DGMAP - Misc Services	M/s GGM, RITES, Gurgaon	2009-10	5,00,000	A. K. Jain
11	Linking Water and Agriculture in River Basins : Impacts of climate changes	Environmental Resources Management Ltd., London	2009-10	57,57,934	A. K. Gosain
12	Beautification and Renovation of park in Sector-95 (c/o Column Plaza in Park), Noida	M/s New Okhla Ind. Devt. Authority, Noida	2009-10	19,68,832	A. K. Jain
13	Beautification of park in Sector-95 (c/o 24 Nos. Elephant Gallery), Noida	M/s New Okhla Ind. Devt. Authority, Noida	2009-10	30,88,000	A. K. Jain
14	EU funded International Consortium Project "High Noon: Adaptation to Changing Water Resources Availability in Northern India with Himalayan Glacier Retreat and Changing Monsoon Pattern"	Consortium Project	2009-10	2,97,37,517	A. K. Gosain
15	Vetting of the sub soil water table report of Noida-Greater Noida express highway	UP Jal Nigam, Noida	2009-10	2,00,000	A. K. Mittal
16	Environment Preliminary Study for the proposed project on Geothermal Power Development Project at Uttarakhand State in India	M/s West Japan Engineering Consultants Inc., Japan	2009-10	9,02,085	Arvind K. Nema
17	Area flood drainage study for the 2x660 MW Kawai Thermal Power Project, Kawai, Baron, Rajasthan	M/s Adani Power Rajasthan Ltd, Ahmedabad	2009-10	20,00,000	A. K. Gosain
18	Technical Consultancy on F.N.G. Road from Express way to Irrigation Drain, Noida	M/s New Okhla Ind. Devt Authority, Noida	2009-10	6,14,000	K. N. Jha
19	Finite Element Modeling and Stress Analysis of Cooling Water Duct in Thermal Power Plants	M/s Lanco Infratech Limited, Gurgaon	2009-10	1,00,000	Suresh Bhalla
20	Experimental Investigation on Glass Reinforced Composite Jali	M/s Lodhi Property Company Ltd.,	2009-10	5,00,453	Suresh Bhalla

	installed at Lodhi hotel, New Delhi	New Delhi			
21	Process Validation, Optimization and Design : Sewage Treatment Plants in Srinagar	J&K Lakes & Waterways Development Authority, Srinagar	2009-10	10,29,500	A. K. Mittal
22	STP AT Greater Noida - Design, Process Validation, Technical Evaluation and Process Optimization	Greater Noida Industrial Development Authority, Greater Noida	2010-11	1,43,50,000	A. K. Mittal
23	Modeling and Impact Assessment Component of the India - Climate Change Impact and Adaptation of Coastal Cities Study	M/s INRM Consultants Pvt. Ltd., New Delhi	2010-11	2,00,000	A. K. Gosain
24	Hydrological Modeling of the Identified Drainage Systems to Access the Water Resource Availability	M/s Greenpeace India Society, Bangalore	2010-11	4,53,309	A. K. Gosain
25	Enabling activity for Preparation of India's second national communication to UNFCCC	M/s Winrock International India, New Delhi	2010-11	5,00,000	A. K. Gosain
26	Development of Standard Cross-section for Urban Roads	M/s Institute of Urban Transport (India), New Delhi	2011-12	4,97,000	Geetam Tewari
27	DPR for the scheme of up-gradation of Tenneries CETP at Kanpur	National Rural Conservation Directorate, MoEF, New Delhi	2011-12	5,00,000	A. K. Mittal
28	Strategic Assessment of the Ganga	M/s INRM Consultants Pvt. Ltd., New Delhi	2011-12	1,80,000	A. K. Gosain
29	DPRs for 6 towns of Punjab for pollution abatement of river Ghaghghar in Punjab under NRCP Program	National Rural Conservation Directorate, MoEF, New Delhi	2011-12	9,00,000	A. K. Mittal
30	Conceptualization, Design and Development of third party virtual inspection portal	M/s REC Power Distribution Co. Ltd., New Delhi	2011-12	5,00,000	A. K. Gosain
31	WATER and global CHange (WATCH)	VU University, Amsterdam	2011-12	22,40,497	A. K. Gosain
32	Design of test apparatus and testing of EPS panels as per ASTM standards	Reliance Innovative Building Solutions Pvt. Ltd., New Delhi	2011-12	11,10,000	Shashank Bishnoi
33	State Action Plan on Climate Change (SAPCC) and vulnerability assessment	INRM Consultants Pvt. Ltd., New Delhi	2011-12	18,02,654	A. K. Gosain
34	Impact of Climate Change on Hydropower Development: Water Resources Management for multiple uses in the Godavari River Basin	SINTEF Energi AS, Norway	2011-12	8,86,503	A. K. Gosain

35	Water availability, demand and adaptation option assessment of the Ganges basin under climate change	International Centre for Integrated Mountain Development (ICIMOD), Nepal	2012-13	22,66,546	A. K. Gosain
36	Built environment modeling for urban renewal	Arcop Associates (P) Ltd., Gurgaon	2012-13	15,41,251	Anil Sawhney
37	De-silting and rehabilitation of sewer barrels by CIPP technology along different line at Q point in New Delhi	New Delhi Municipal Council, New Delhi	2012-13	4,63,260	A. K. Keshari
38	De-silting and rehabilitation of sewer line from Bhai Veer Singh Marg to Sansad Marg	New Delhi Municipal Council, New Delhi	2012-13	3,54,063	A. K. Keshari
39	Dewatering scheme and design at additional building of Supreme Court	A.P. Earth Movers, New Delhi	2012-13	3,00,000	A. K. Keshari
40	Design of barrages of Nikki Tawi and WaddiTawi over Tawi River, Jammu	GVR Infra Projects Ltd., Hyderabad	2012-13	1,12,360	A. K. Keshari
41	Consultancy services for Energy Smart Building for Gas Pipeline Station	GAIL (India) Ltd., New Delhi	2012-13	46,41,135	Anil Sawhney
42	Solar based water purifier	Robert Bosch Engg. & Business Solutions Ltd., Bangalore	2013-14	6,74,160	A. K. Nema
43	Resurfacing of B.K. Dutt Colony, Aliganj colony, Jorbagh Lane and Jorbagh Colony	New Delhi Municipal Corporation, New Delhi	2013-14	5,05,620	A. K. Keshari
44	High End cLimateImpacts and eXtremes (HELIX)	EU - The University of Exeter, UK	2013-14	2,40,58,400	A. K. Gosain

Annexure-6

List of Large Interdisciplinary Projects

1. A.K. Gosain, Assessment of Vulnerability and Adaptation for Water Sector, NATCOM, Ministry of Environment and Forests; Rs. 50.00 Lacs; Two years starting April 2007
2. A.K. Gosain, Climate Change Impact on River basin in semi-arid areas in India: Mitigation and adaptation measures to address current and future challenges, Bioforsk-Norwegian Institute for Agriculture and Environment Research, Norway; NKR. 17.16 Lacs, Two and half years Starting January, 2008
3. A.K. Gosain, Development of a Framework for Integrating the Information for WAR (Winning, Augmenting and Renovation) for Water Resources; Department of Science and Technology, India; Rs. 15.74 Lacs; Two years starting May 2010
4. A.K. Gosain, Geo Database Management - Ganga River Basin Management Plan, CI: R.K. Khosa, B.R. Chahar, D.R. Kaushal, C.T. Dhanya, National River Conservation Directorate, MoEF; Rs. 20.0 Lacs; Three years starting August 2010
5. A.K. Gosain, High Noon: Adaptation to Changing Water Resources Availability in Northern India and Himalayan Glacier Retreat and Changing Monsoon Pattern, European Commission; € 4.28 Lacs; Three years Starting 1.5.2009
6. A.K. Gosain, Impact of Climate Change on the Water Cycle and Ecosystem Functioning at the River Basin Scale, UKIERI British Council Division; Rs. 122.96 Lacs; Four years starting Oct 2007
7. A.K. Gosain, Integrated Wastewater Management through SWAT Modeling of River Basins in India & Europe (SHUSHUK), CI: A.K. Nema, Department of Science and Technology, India; Rs. 20.8 Lacs; Two years starting June 2012; In collaboration with CNRS France
8. A.K. Gosain, Linking water and agriculture in river basins: Impacts of climate change, Department for Environment, Food and Rural Affairs (Defra), UK; £ 80,000; Two years starting Feb 2009
9. A.K. Gosain, Rural Energy Production from Bioenergy Products Providing Regulatory and Impact Assessment Framework, European Commission; € 2.01 Lacs; Three and a half year Starting 14.5.2007
10. A.K. Gosain, UK India Faculty Curriculum and Network Development Project for Climate and Carbon Management; A.K. Gosain; British Council Division; Rs. 2.66 Lacs; Two years starting December 2012; In collaboration with Queens University Belfast, UK
11. A.K. Gosain, Water Resources Management - Ganga River Basin Management Plan, CI: R.K. Khosa, B.R. Chahar, D.R. Kaushal, C.T. Dhanya, National River Conservation Directorate, MoEF; Rs. 60.5 Lacs; Three years starting August 2010
12. Arun Kumar (PI), Vasant Matsagar, and Uwe Schlink: "Identification of Issues for Sustainable Urban Built-Environment through Symposium of Indo-German Experts (SustainUBE)", (a) Federal Ministry of Education and Research (BMBF - Bundesministerium for Bildung und Forschung), Government of Germany, EURO 15,800;

- (b) Indian National Science Academy (INSA), Rs. 40,000; (c) Wipro Limited, India, Rs. 50,000; (d) Continuous Education Program (CEP) Cell, Indian Institute of Technology (IIT) Delhi, Rs. 1,40,625; (e) Department of Civil Engineering, Indian Institute of Technology (IIT) Delhi, Rs. 1,00,000 and in-kind (@ Rs. 24,55,250 i.e. Indian Rupees Twenty Four Lakh Fifty Five Thousand Two Hundred and Fifty Only)
13. Arun Kumar, PI “Resource building for ecosystem and human health risk assessment with special references to microbial contamination ” (Prof. Mukesh Khare (Co-PI, IIT Delhi), Dr. Patrick Gurian (Co-PI; Drexel University, USA) and Prof. Charles N. Haas (Co-PI; Drexel University)) (Funding Agency: UGC, India; Duration: 2012-2015; Total amount: Rs. 105.40 Lakhs) (Institute involved: Drexel University, USA; Michigan State University, USA; IIPH Hyderabad; NEERI Mumbai and NEERI Nagpur, India)
 14. Bhalla, S., Bamboo as a Green Engineering Material in Rural Housing and Agricultural Structures for Sustainable Economic Growth, World Bank,; Co-Investigator: Dr. P. Sudhakar, Prof. Ashok Gupta, Prof. D. T. Shahani, Prof. S. Satya, 585 lakhs, Start date: 12 May 08; Completion date: 31 Mar 2013
 15. Bhalla, S., Interactive Systems and Coatings for a Sustainable Built Environment, Collaborative Project under UK India Education and Research Initiative (UKIERI), British Council, Co-Investigator: Prof. Richard Ball and Prof. Kevin Paine (University of Bath, UK), Prof. Rajnish Kurchania (MANIT, Bhopal), 31.23 lakhs (GBP 40000), Start date: 01 Jan 2012
 16. Bhalla, S., Virtual Labs Project (Remote Triggered Labs), Ministry of Human Resource Development; Co Investigator: Prof. R. K. Shevgaonkar, Prof. Ranjan Bose, 680 lakhs, Start date: 01 Jan 13
 17. Bhalla, S., Waste Land Development with Sustainable Livelihoods Based on Bamboo Plantation and Value Added Products for Housing, Food, Fodder and Bio fuel, Ministry of Rural Development,; Co-Investigator: Dr. P. Sudhakar, Prof. Santosh Satya, Dr. S. N. Naik, Prof. M. R. Ravi, Dr. Sangeeta Kohli, Prof. M. L. Gulrajani, Prof. R. R. Gaur, Prof. P. L. Dhar, Prof. S. K. Jain, 325 lakhs, Start date: 03 Oct 07; Completion date: 02 Oct 2012
 18. Bishnoi, S. “Low Carbon Cement” sponsored by Swiss Agency for Development and Cooperation for Rs. 39.5 lakhs at IIT Delhi is collaboration between EPFL Switzerland, UCLV Cuba, IIT Delhi and TARA of Development Alternatives group. The project addresses several disciplines of production, economy and sustainability
 19. Chahar, B.R., ICMR, Evidence based assessment of biophysical determinates of malaria in the northern states of India & development of framework for adaptation measures for malaria control under climate change scenarios, more than 1 Crore, 5 Years, Dr. RC Dhiman (NMRI), Prof AK Nema, Dr. A Malik and others
 20. Chahar, B.R., MoES, Unified Model Component IV: Land Surface Processes, about 1.5 Crores, 5 Years, Prof OP Sharma and others
 21. Chahar, B.R., MoWR, Evaluation of Geomembrane for Canal Lining, 31.94 Lacs, 3 Years (March 2009 to March 2012), Prof BL Deopura (Textile Department)

22. Chakraborty, T., "Characterization of high strain rate behavior of rocks and its application in blast loading on underground structures", PI: T. Chakraborty, Co-PI: V. Matsagar, Amount: INR 42,00,000.00 (Armament Research Board (ARB), Defense Research and Development Organization (DRDO), Ministry of Defense (MoD), Govt. of India). (Awarded and Ongoing)
23. Kalaga R.R. Estimation of Fuel Savings in Alternate Transport Plans in Indian Cities S. Kale, G. Tewari, R.R. Kalaga, D. Mohan, IIT Delhi, Rs. 19 lakhs, Petroleum Conservation Research Association, New Delhi; Phase II is awarded
24. Keshari A.K., Assessment of Coca Cola Facilities in India. Sponsored by Meridian Institute Colorado, USA under the agreement between University of Michigan and Coca-Cola, USA, ~ 20 Crore, 2008
25. Keshari A.K., Assessment of Ground Water Resources and Development Potential of Yamuna Flood Plain, NCT Delhi. Sponsored by Delhi Jal Board, ~ Rs. 10 lakhs, 2010
26. Keshari A.K., Characterizing Solid Waste Generation and Linkages to Climatic Change in South Asia. Sponsored by Takahashi Foundation, Japan, ~ USD \$5672.15, 2011
27. Keshari A.K., Drinking Water Availability and Associated Environmental Risk in Rural Areas of South Asia. Sponsored by AUWSF, USA, ~ USD \$2250, 2011
28. Keshari A.K., Mapping of Water Bodies in National Capital Region of Delhi. Sponsored by Department of Science and Technology, Govt. of India, ~ Rs. 34.26 lakhs, 2010
29. Keshari A.K., Numerical Simulation and Experimentation for Avalanche Flow Calculation Using Granular Flow Dynamics with Variable Density: Model Development & Chute Flow Simulation. Sponsored by Snow and Avalanche Study Establishment, Chandigarh, DRDO, Ministry of Defense, ~ Rs. 8.6 lakhs, 2008
30. Keshari A.K., Snow Surface Temperature Modeling: Spatial Interpolation of Meteorological and Terrain Parameters Using GIS and Geostatistics, and Computation of Snow Surface Temperatures. Sponsored by Snow and Avalanche Study Establishment, Chandigarh, DRDO, Ministry of Defense, ~ Rs. 15 lakhs, 2008
31. Khare, M. Coordinator : "Monitoring and Characterization of Respirable Particles in Urban Environment (outdoor/ indoor) and their Association with Human Health", Sponsored by All India Council for Technical Education, Ministry of Human Resources and Development, Government of India, New Delhi, Cost: INR 40,00,00.00. Duration: 3 years w.e.f. October 2006-2009
32. Khare, M. Coordinator, "C V Raman International Fellowship for African Researchers" for the interactive research/academic collaboration in the area of Urban Air Pollution for Prof. Mengistu Tsidu Gizaw, University of Addis Ababa, Ethiopia - to visit IIT Delhi during January 2011 to March 2011, Funding support from Department of Science and Technology and Federation of Indian Chambers and Commerce for Industry (FICCI), India
33. Khare, M. Coordinator: "Environmental engineers of tomorrow: Developing a shared tool box through collaboration", Sponsored by EPSRC, UK under "Collaborating for Success

- through People”, Partner Institutes: The University of Newcastle Upon Tyne and Glasgow University, UK, IIT Delhi, India; Cost: INR 55,40,990, March, 2007 - March, 2008
34. Khare, M. Co-principal Investigator, “Comprehensive Environmental Pollution Index”, Cost: INR 8,000,00; Central Pollution Control Board, Delhi; Duration: April, 2010 - May 2011
 35. Khare, M. Co-Principal Investigator, “Eco-Innovative Safe and Energy Efficient Materials (ECO_SEE)”, FP7.0, Funding Agency: EU; Cost: Euro 106529.9, Duration: Sept., 2013 - Aug., 2015
 36. Khare, M. Co-Principal Investigator, “Ganga River Basin: Environmental Management Plan”, Ministry of Environment and Forests, Government of India; Duration: March 2011-March, 2012; Cost: 7,00,000,00
 37. Khare, M. Co-Principal Investigator, “Interactive Systems and Coating for a Sustainable Built Environment” Cost: Pound Sterling 20,000; Funded by UK-India Education Research Initiative (UKIERI), British Council (UK); Partners: University of Bath, UK: Dr. Richard J Ball (Principal Investigator); MNIT Bhopal, India: Dr. Rajnish Kurchania; Duration: June, 2012 - May, 2014
 38. Khare, M. Co-Principal Investigator, “Resource Building for Ecosystem and Human Health Risk Assessment with Special Reference to Microbial Contamination”, Joint Singh Obama 21st Century Knowledge Initiative; Duration: August 2012-July 2015; Funded By UGC, India, Cost: INR 1, 25, 000,00
 39. Khare, M. Investigator: “Evaluation of Quantitative Dispersion Models for Urban Air Quality Assessment”, Cost: Pound Sterling 1, 28,629.00; Funded by UK-India Education Research Initiative (UKIERI), British Council (UK); Partners: Newcastle University, UK: Prof. Margaret Bell (Principal Investigator); IIT Madras, India: Dr. Shiva Nagendra; Duration: March, 2009 - December 2011
 40. Khare, M. Principal Investigator (India): “Indoor Air Quality: Monitoring, Prediction, Exposure Assessment and Cleaning”, Cost: Euro 20,000.00; Funded by Centre Franco-Indien Pour La Promotion de La Recherche Avancee (CEFIPRA), Ecole des Mines des Nantes (Principal Investigator: Prof. Valerie Héquet); Duration: 31 May 2010 - 3 June, Nantes, France
 41. Khare, M. Principal Investigator, “STREAT - Sustainable Semi-Decentralized Sewage Treatment - Wastewater Reuse, Nutrient Recovery and Biogas Production in the Delhi Metropolitan Area”, Ministry of Environment and Forests, Government of India; Duration: April 2012 - March 2015; cost: INR 22, 30,000
 42. Khare, M. Principal Investigator, “Wind Tunnel Simulation of Dispersion of PM10 and PM2.5 in Urban Corridor”, UKIERI Staff Exchange Award, British Council; Duration: April, 2012 - September 2012; Cost: Pound Sterling 3000.00, Funded by UKIERI
 43. Khare, M. Principal Investigator, Receptor Modeling of Particulate Air Pollutants, Cost: Pound Sterling, 49,982.00; Funded by UK-India Education Research Initiative (UKIERI), British Council (UK); Trilateral Partners: University of Birmingham, UK: Prof. Roy

- Harrison (Principal Investigator); Desert Research Institute, USA, Dr. Judith Chow (Co-Principal Investigator). Duration: April, 2013 - March, 2015
44. Maheswari, U.J., Automation of structural design iteration for Indian construction industry, (Co-PI - Dr. Vasant Matsagar) Department of Science & Technology, GOI, New Delhi, ongoing since 25th Apr 2012 (3 years), 21.5 Lakhs
 45. Mathur, S., DST project: (No. RP02192). "Development of a Mathematical Model for Phytoremediation of Heavy Metal Contaminated Sites." Principal Investigator: Prof. Shashi Mathur, Date of commencement: 16th January, 2009
 46. Mathur, S., DST Ramanujan Fellowship (No. MI00802), "Bioremediation of LNAPL polluted land under semi-arid coastal environment conditions", fellowship to Dr. Brijesh Yadav (IIT Roorkee) under supervision of Prof. Shashi Mathur, Date of commencement: 13th January, 2011
 47. Mathur, S., MOEF project. (No. RP02156), "Model for optimized spacing of transpiring hydrophilic trees on vegetative covers of MSW landfills." Principal Investigator: Prof. Shashi Mathur, Date of commencement: 17th October, 2008
 48. Tewari G. Tool kit development for 'Public Transport accessibility', MoUD, Govt. of India, Rs. 12.00 Lacs (G. Tewari (PI), R. R. Kalaga
 49. Tewari G. Promoting Low Carbon Transport in India, (Nov 2010 - Oct 2013) 3 years (G. Tewari (PI), D. Mohan, Sunil Kale, R. R. Kalaga, Ambuj Sagar), Rs. 1.58 Crore, UNEP RISOE Centre, Technical University of Denmark
 50. Tewari G. Tool kit development for, 'Urban Road Safety Audit', MoUD, Govt. of India, Rs. 12.00 Lacs, (G. Tewari (PI), R. R. Kalaga

Annexure-7

Department Organization Structure

Section Coordinators

1.	Geotechnical Engineering	:	Prof. K.S. Rao
2.	Environmental Engineering	:	Prof. B.J. Alappat
3.	Structural Engineering	:	Dr. K. N. Jha
4.	Surveying and Remote Sensing	:	Prof. B.J. Alappat
5.	Transportation Engineering	:	Dr. Aravind K. Swamy
6.	Water Resources Engineering	:	Prof. B.R. Chahar

Laboratory In-charges

1.	Computation Laboratory	:	Dr. Vasant Matsagar
2.	Departmental Workshop	:	Prof. K. N. Jha
3.	Environmental Engineering	:	Dr. Gazala Habib
4.	Geotechnical Engineering	:	Dr. R. Ayothiraman and Dr. B. Manna
5.	Water Resources Engg.	:	Dr. D.R. Kaushal
6.	Structural Engineering	:	Dr. D.R. Sahoo
7.	Surveying and Remote Sensing	:	Prof. Mukesh Khare
8.	Transportation Engineering	:	Dr. R.R. Kalaga

Budget and Stores In-charge : Dr. K.N. Jha

Administrative In-charge : Dr. Vasant Matsagar
(Supporting Staff + office)

Member, ACL and Departmental Library In-charge : Prof. G.V. Ramana

Departmental and Institute

Publications/Protocol/Visitor's Coordinators:

- (i) Dr. Vasant Matsagar
- (ii) Dr. Aravind K. Swamy
- (iii) Dr. R. Ayothiraman
- (iv) Dr. Arun Kumar
- (v) Dr. C.T. Dhanya

Member, Computer User's Committee and Liasion Officer of Dept. : Dr. Vasant Matsagar

Secretary, DFB and Social Secretary Civil Engineering Society : Dr. R. R. Kalaga

President : Head of the Department

Vice-President : Dr. Vasant Matsagar
Dr. T. Chakraborty

Time Table In-charge : Dr. D.R. Kaushal

Undergraduate Activities

- Chairman, B. Tech. Proj. Coord.Comm.** : Prof. K.S. Rao
Convener, B. Tech. Proj. Coord.Comm. : Dr. C.T. Dhanya
B. Tech. Project Viva-voce Committee : **(i) Structural Engg.**
 Prof. T.K. Datta
 Dr. S. Gupta
 Prof. A.K. Nagpal
 Dr. S. Bhalla
(ii) Geotechnical Engg. and Environmental Engg.
 Prof. G.V. Ramana
 Dr. B. Manna
 Dr. Gazala Habib
 Dr. Arun Kumar
(iii) Water Resources Engg. and Transportation Engg.
 Prof. Shashi Mathur
 Dr. D.R. Kaushal
 Dr. Aravind K. Swamy
 Dr. R.R. Kalaga

- B. Tech. Project Report Evaluation Committee:** Dr. D.R. Sahoo, **Structures**
 Dr. J. Uma Maheswari
 Prof. Geetam Tewari, **Transportation**
 Dr. S.K. Deb
 Dr. T. Chakraborty, **Geotechnical**
 Prof. J.T. Shahu
 Prof. A.K. Keshari, **Water**
 Dr. Rakesh Khosa
 Prof. A.K. Nema, **Environmental**
 Prof. A.K. Mittal

- Chairman, Practical Training and Colloquium** : Prof. S. Mathur
Convener, Practical Training and Colloquium : Dr. S. Gupta
CEP 200 Deptt. Coordinator : Prof. B.R. Chahar
Member, BUGS : Prof. B.R. Chahar

List of Class Committee Chairman and Convener

Year	Chairman	Convener
1 st Year	Prof. G.V. Ramana	Dr. R.R. Kalaga
2 nd Year	Prof. Mukesh Khare	Dr. D. R. Kaushal
3 rd Year	Prof. Shashi Mathur	Dr. Bappaditya Manna
4 th Year	Prof. A. Madan	Dr. Abhijit Ganguli

List of the Special Course Advisors for students under Probation session 2013-14:

1. Prof. A.K. Gosain
2. Prof. Ashok Gupta
3. Prof. K.S. Rao
4. Dr. R.R. Kalaga
5. Dr. Gazala Habib

Committee for Slot Allocation of UG Elective Courses

Chairman, III Year Class Committee Chairman	Prof. Shashi Mathur
Member, IV Year Class Committee Chairman	Prof. A. Madan
Member, Section Coordinator, Environmental Engg.	Prof. B.J. Alappat
Member, Section Coordinator, Geotechnical Engg.	Prof. K.S. Rao
Member, Section Coordinator, Structural Engg.	Dr. K.N. Jha
Member, Section Coordinator, Surveying and Rem. Sensing	Prof. Mukesh Khare
Member, Section Coordinator, Transportation Engg.	Dr. Aravind K. Swamy
Member, Section Coordinator, Water Resources Engg.	Dr. B.R. Chahar
Member-Convener, Time Table In-charge	Dr. D.R. Kaushal

Departmental Monitoring Committee: (For counseling UG Students)	Prof. A.K. Jain	Chairperson
	Prof. A. Madan	Member
	Prof. Shashi Mathur	Member
	Prof. M. Khare	Member
	Prof. G.V. Ramana	Member
	SC/ST/Advisor	Special Invitee

Nominee to Co-Curricular and Academic Interaction Council : Prof. B.R. Chahar

Department representative to Ranking committee : Dr. Aravind K. Swamy

Department Policy Committee : Prof. A.K. Jain HOD, Chairman
Prof. M. Khare, Member
Prof. G. Tewari, Member
Prof. G.V. Ramana, Member
Prof. B.R. Chahar, Member
Prof. A.K. Nema, Member
Dr. R. R. Kalaga, Member
Dr. S. Bhalla, Member
Dr. R. Ayothiraman, Member
Dr. C.T. Dhanya, Convener

Postgraduate Activities

Member, BPGS and PG Activity Coordinator : Dr. S. Bhalla

Chairman, DRC : Prof. A.K. Jain, HOD

Convener, DRC : Dr. S. Bhalla

M. Tech. Program Coordinators (Member DRC) and DRC Nominees for Major Projects

	Prog.Coord.	DRC Nominee for Major Projects
1. Construction Engineering & Management	: Dr. Abhijit Ganguli	Dr. K.N. Jha
2. Rock Engg. & Underground Structures	: Dr. R. Ayothiraman	Prof. K.G. Sharma
3. Geotechnical & Geoenvironmental Engg.	: Dr. T. Chakraborty	Prof. M. Datta
4. Structural Engineering	: Dr. Vasant Matsagar	Dr. G.S. Benipal
5. Water Resources Engineering	: Dr. Rakesh Khosa	Prof.A.K. Gosain
6. Environmental Engg. & Management	: Dr. Arun Kumar	Prof. A.K. Nema
7. Construction Technology & Management	: Dr. Shashank Bishnoi	Prof. K.C. Iyer
8. Transportation Engineering	: Prof. Geetam Tewari	Dr. R.R. Kalaga
9. PG Diploma in Metro Rail Transport Technology & Management	: Dr. J. Uma Maheswari	
DFB nominee to DRC	: Prof. A.K. Keshari	
Other Section nominees to DRC	: Prof. A.K. Gosain Prof. G.V. Ramana Prof. A. Madan	

Annexure-8

Brief Curriculum Vitae of Department Faculty

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
A.K. JAIN	1979	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	CIVIL ENGINEERING	UNIVERSITY OF ROORKEE	1978
Ph.D.	STRUCTURAL ENGINEERING	INDIAN INSTITUTE OF TECHNOLOGY DELHI	1984

Research Areas and Highlights

Analysis of RCC and Steel Structures, Earthquake Engineering, Wind Engineering, Offshore Structures, Dynamic Testing of Structures, Tall Buildings, Bridges.

Experience

MY CONSULTING IS IN CONCRETE STRUCTURES, STEEL STRUCTURES, WATER RETAINING STRUCTURES, COMMUNICATION TOWERS, BRIDGES, TALL BUILDINGS, WATER AND SEWAGE TREATMENT PLANTS AND OTHER INFRASTRUCTURE STRUCTURES

Significant Publications

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	100	5
M.Tech.	Completed	150	25
Ph.D.	Completed	8	3
Ph.D.	In Progress	6	6

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	10	30000000
Consultancy	250	150000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	35	10
Journal	National	20	5
Conference	International	50	5
Conference	National	40	5

Patent & IPR

Course Name	L-T-P	Course Belongs To
STRUCTURAL DYNAMICS	3-0-0	PG
CONSTRUCTION METHODS AND EQUIPMENT	3-0-0	PG
STRUCTURAL ANALYSIS I	3-1-2	UG
STRUCTURAL ANALYSIS II	3-1-2	UG
CONSTRUCTION EQUIPMENT AND METHODS	2-1-0	UG
ADVANCED STRUCTURAL ANALYSIS	2-0-2	UG
DESIGN OF OFFSHORE STRUCTURES	2-1-0	PG
MANAGEMENT OF QUALITY AND SAFETY IN CONSTRUCTION	2-1-0	PG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

- Fellow Institution of Engineers India
- Member American society of Civil Engineers USA
- Member Offshore and Arctic Engineering Society USA

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
BABU J.ALAPPAT	2000	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	University of Calicut	1986
M.Tech.	Environmental Engineering	University of Kerala	1988
Ph.D.	Environmental Engineering	IIT Bombay	1996

Research Areas and Highlights

In general: Environmental Engineering. More precisely: Solid Waste Management, Incineration, Fluidized Bed Operations.

Experience

Worked as a Visiting Lecturer in IIT Kharagpur after Ph.D and then joined IIT Delhi in 2000. In IIT Delhi, became an Assistant Professor in 2002, an Associate Professor in 2006 and a Professor in 2010.

In 2003, Worked in Ecole Des Mines De Nantes, France, as an a Invited Professor on a Research Project. Teaching in Ecole Des Mines De Nantes, France as a Visiting Professor in Summer since 2004.

Significant Publications

- Raman Sharma, Arnaud Delebarre and Babu Alappat, "Chemical-Looping Combustion in a Spouted Bed with a Central Riser Tube", 62nd Canadian Chemical Engineering Conference, Vancouver, Canda, October. 14-17, 2012. , Conference , International
- K.V. George, D.D. Patil, P. Kumar and B. J. Alappat, "Field Comparison of Cyclonic Separator and Mass Inertial Impactor for PM10 Monitoring, Atmospheric Environment, 60, 2012, pp.247-252. , Journal , International
- Raman Sharma, Munish Kumar Chandel, Arnaud Delebarre and B. J. Alappat, "200 MW Chemical Looping Combustion based thermal power plant for clean power generation', International Journal of Energy Research, 37, 2013,pp 49-58. , Journal , International
- K.V. George, D.D. Patil and B. J. Alappat, "PM10 in the Ambient Air of Chandrapur Coal Mine and its Comparison with other Environments, Environment Monitoring Assessment, 185 (2) 2013, pp 1117-1128. , Journal , International
- Raman Sharma, Arnaud Delebarre and B. J. Alappat, "Cold model testing of a recirculating fluidized bed reactor working in alternate aeration-fuel burning cycles for chemical looping, Canadian Journal of Chemical Engineering, Vol. 9999, 2013, pp 1-12. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
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Ph.D.	Completed	3	1
Ph.D.	In Progress	6	6
Ph.D.	In Progress	6	6
M.Tech.	Completed	40	10
M.Tech.	In Progress	3	3
B.Tech.	Completed	20	10

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	6	13500000
Consultancy	1	400000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	35	13
Journal	National	15	4
Conference	International	13	2
Conference	National	27	7
Books Chapter	National	1	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
SOLID AND HAZARDOUS WASTE MANAGEMENT	3-0-0	PG
PRACTICAL TRAINING	0-0-0	UG
THERMAL TECHNIQS FOR WASTE MANAGEMENT	3-0-0	PG
ENVIRONMENTAL STUDIES	3-0-0	UG
ELEMENTS OF SURVEYING	2-0-2	UG
COLLOQUIUM (CE)	0-3-0	UG
ADVANCED WATER AND WASTEWATER ENGINEERING	3-0-2	UG
INDUSTRIAL WASTE MANAGEMENT	3-0-0	UG
EMERGING TECHNOLOGIES FORENVIRONMENTAL MGMT.	3-0-0	PG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

- Life Member of Institution of Public health Engineers India, Calcutta
- Life Member of National Solid Waste Association of India, Mumbai
- Life Member of Aerosol Society BARC, Mumbai

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
B.BHATTACHARJEE	1982	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Kharagpur	1978
M.Tech.	Building Science & Construction Management	IIT DELHI	1982
Ph.D.	Building materials	IIT Delhi	1990

Research Areas and Highlights

Durability of Concrete, Rebar Corrosion, Cement based Composites, Construction Technology, Building Science, Green Building, Sustainability.

Professor Bhattacharjee has been involved in developing and teaching several new courses in Concrete Materials, construction technology and Building science. He is nominated fellow of Indian association of Structural Engineers and member of several professional bodies. He has authored more than 100 very well cited, journal and conference papers and also supervised over 150 M. Tech. theses and 13 Ph. D. theses; with 10 additional Ph.D. work in progress. He also had a visiting position in EPFL Switzerland and involved in collaborative research programs with German and Belgian Universities and also with University of Dundee UK and; coordinated a video teaching program for Ministry Of Education Govt. of Ethiopia. He is actively involved in concrete related continuing education programs for various cement and concrete industries. Dr. Bhattacharjee, s has developed very popular video lectures on Building Materials and Construction (BMC) under NPTEL program. He had been delivering solo lectures spanning over two days, on concrete, in short courses organized at Delhi, Mumbai, Kolkata, Bangalore and Hyderabad by various industries. He had also delivered technical lectures at Colombo and King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia on invitation. Prof Bhattacharjee has handled more than 200 consultancies and sponsored research projects both at national and international levels.

A recipient of ICI life time achievement award (North) 2012, he is a member of editorial board of "Magazine of Concrete Research" and "International Journal of 3R's".

He is a member of Research Councils of CBRI and NCCBM; Governing council of Dr. Fixit Laboratory and TERI academic advisory board, Chairman of BIS sectional committee on Technical Textiles for Build-tech, TX 34 etc. Prof. Bhattacharjee continues to remain as one of the very active researchers of international repute within the country, working devotedly in the domains of cement and concrete research and building sciences.

In appreciation to his contribution, Indian concrete journal has published a bio-sketch of Prof. Bhattacharjee titled

Experience

IIT DELHI

Professor from 2005- till date.

Associate professor from 1997-2004;

Assistant Professor from 1990-97;

Lecturer from 1985-90;

Sr. Research Assistant from 1982-85.

Professional Experience:

With M/s GAMMON INDIA LTD. as

Jr. SITE ENGINEER for 2 years from 1978-1980

Significant Publications

- Rakesh Kumar and B.Bhattacharjee. POROSITY PORE SIZE DISTRIBUTION AND IN SITU STRENGTH OF CONCRETE. Cement and Concrete Research. Vol 33, No.1. pp. 155-164. Jan 2003 , Journal , International
- Nagesh. M and B. Bhattacharjee. MODELLING OF CHLORIDE DIFFUSION IN CONCRETE AND DETERMINATION OF DIFFUSION COEFFICIENTS. ACI MATERIAL JOURNALS Vol. 95, No.2. pp. 113-120, Mar-April 1998 , Journal , International
- B.Bhattacharjee and S.Krishnamoorthy. PERMEABLE POROSITY AND THERMAL CONDUCTIVITY OF CONSTRUCTION MATERIALS. Jr. of Materials in Civil Engineering, ASCE Vol 16, No.4. pp. 322-330. July Aug 2004. , Journal , International
- S.G. Patil & B.Bhattacharjee. SIZE AND VOLUME RELATIONSHIP OF PORE FOR CONSTRUCTION MATERIALS. Jr. of Materials in Civil Engineering, ASCE. Vol 20.No. 6 June 2008. pp. 410-418 , Journal , International
- Bulu Pradhan and B.Bhattacharjee. PERFORMANCE EVALUATION OF REBAR IN CHLORIDE CONTAMINATED CONCRETE BY CORROSION RATE. Construction and Building Materials. Vol 23 No.06 June 2009. pp.2346-2356. , Journal , International
- Shamsad Ahmad and B. Bhattacharjee. ASSESMENT OF SERVICE LIVES OF R.C. STRUCTURES SUBJECTED TO CHLORIDE INDUCED REBAR CORROSION. Journal of Structural Engineering. Vol 23, No.4. pp. 177-182. Jan 1997 , Journal , National
- A. Ghosh, V. Sairam and B. Bhattacharjee "EFFECT OF NANO-SILICA ON STRENGTH AND MICROSTRUCTURE OF CEMENT SILICA FUME PASTE, MORTAR AND CONCRETE". Indian Concrete Journal. Vol 87 No.05 June 2013. pp.11-26. , Journal , National
- B.Bhattacharjee. "SOME ISSUES RELATED TO SERVICE LIFE OF CONCRETE STRUCTURES". Indian Concrete Journal. Vol. 86 No.1 pp. 23-29. Jan, 2012. , Journal , National
- B.Bhattacharjee. "SUSTAINABILITY OF CONCRETE IN INDIAN CONTEXT" Indian Concrete Journal. Vol 84 No.07 July 2010. pp.45-51. , Journal , National
- Santosh Das, P.N. Ojha and B.Bhattacharjee. TEST SELECTION FOR INSITU TESTING OF CONCRETE IN STRUCTURES USING ANALYTICAL HIERARCHY PROCEDURE. Indian Concrete Journal. Vol. 78 No.4 pp. 22-28. April, 2004. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	13	6
M.Tech.	Completed	142	41
B.Tech.	Completed	20	7

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	9	16700000
Consultancy	150	10000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	28	14
Journal	National	23	9
Conference	International	39	22
Conference	National	24	6

Patent & IPR

Course Name	L-T-P	Course Belongs To
CONSTRUCTION ENGINEERING PRACTICES	3-0-0	PG
BUILDING SCIENCE	3-0-0	PG
FUNCTIONAL PLANN.BLDG. SERV.& MAINT. MANAGEMENT	3-0-0	PG
SUSTAINABLE MATERIALS AND GREEN BUILDING	3-0-0	PG
CONSTRUCTION MANAGEMENT	3-1-0	UG
QUANTITATIVE METHODS IN CONSTRUCTION MANAGEMENT	2-1-0	PG
RECENT ADVANCES IN CONSTRUCTION MATERIALS	3-0-0	PG
CIVIL ENGG. MATERIALS	3-0-0	PG
CONCRETE MATERIAL & DESIGN	3-1-4	UG

Awards & Distinctions

- ICI ICI life time achievement award (North) 2012,
- In appreciation to his contribution, Indian concrete journal has published a bio-sketch of Prof. Bhattacharjee titled " A Teacher and a Research worker " under the feature "People" in the August 2012
- Structural Engineers Forum of India recognized Prof. Bhattacharjee as " Gem of Structural Engineering"

Society Membership, Certification & Training & Any Other Details

- Nominated Fellow: Indian association of Structural Engineers
Life member of: Indian Concrete Institute, Indian Society for Construction Materials and Structure and Indian Society for Technical Educat

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
BHAGU RAM CHAHAR	2004	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	MBM Engg College, JNV University, Jodhpur	1989
M.Tech.	Water Resources Engineering	I I T Kharagpur	1991
Ph.D.	Optimal Design of Channel Sections considering Seepage and Evaporation Losses	I I T Roorkee	2001

Research Areas and Highlights

Canal Design, Groundwater Modelling and Artificial Recharge, Seepage and Drainage, Stream - Aquifer Interaction, Optimization, Numerical Techniques

Experience

Teaching Experience more than 21 years (from Feb 1992 to date) as per the following Five levels : (1.) Professor, Dept of Civil Engg, I I T Delhi, December 2012 to Date; (2.) Associate Professor, Dept of Civil Engg, I I T Delhi, Aug 2008 to Dec 2012; (3.) Assistant Professor, Dept of Civil Engg, I I T Delhi, Sept 2004 to Aug 2008; (4.) Visiting Faculty, Dept of Civil Engg, I I T Delhi, Dec 2003 to Aug 2004; (5.) Asst Professor in Civil Engg, MBM Engineering College, JNV University, Jodhpur, Feb 1992 to Dec. 2003.

Significant Publications

- Choudhary, M, and Chahar, B.R. (2013). "Recharge from an Array of Polygonal Channels." J. Hydrologic Engineering, ASCE, doi:10.1061/(ASCE)HE.1943-5584.0000872, In Print. , Journal , International
- Anand Verdhen, Chahar, B.R. and Sharma, O.P. (2013). "Spring Time Snowmelt and Streamflow Predictions in the Himalayan Mountains" J. Hydrologic Engineering, ASCE, Vol 17, In print. DOI: 10.1061/(ASCE)HE.1943-5584.0000816 , Journal , International
- Swamee, P. K., and Chahar, B.R. (2013). "Optimal Alignment of a Canal Route." Proc. ICE, Water Management, Vol 165, In Print. DOI: 10.1680/wama.11.00097 , Journal , International
- Narsimlu, B, Gosain, AK, and Chahar, B.R. (2013). "Assessment of Future Climate Change Impacts on Water Resources of Upper Sind River Basin, India Using SWAT Model." Water Resources Management, Vol 27(10), 3647-3662, doi: 10.1007/s11269-013-0371-7 , Journal , International
- Chahar, B.R. (2013). "Discussion of 'Simplified Accurate Solution for Design of Erodible Trapezoidal Channels' by by Ali R. Vatankhah and Said M. Easa" J. Hydrologic Engineering, ASCE, Vol 18(5), 617, doi:10.1061/(ASCE)HE.1943-5584.0000626 , Journal , International
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- Chahar, B.R., and Vadodaria, G. P. (2012). "Steady Subsurface Drainage of Poned Surface by an Array of Parallel Ditches." J. Hydrologic Engineering, ASCE, Vol 17(8), 895-908, DOI: 10.1061/(ASCE)HE.1943-5584.0000518 , Journal , International
- Sohani, S. K., Sudheer Ch, Chahar, B.R., Nema, A.K., Mallik, A., Dhiman, R.C. (2012). "Modelling the transmission of vector borne diseases using SVM-PSO." International Journal of Systems, Algorithms & Applications, Vol 2(ICARET12), 246-249. , Journal , International
- Chahar, B.R., Grailot, D., and Gaur, S. (2012). "Storm Water Management through Infiltration Trenches." J. Irrig. And Drain. Engrg., ASCE, Vol

138(3), 274-281. DOI: 10.1061/(ASCE)IR.1943-4774.0000408 , Journal , International

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, Journal , International
- Gaur S., Chahar B.R., and Grailot D. (2011) "Combined use of groundwater modeling and potential zone analysis for management of groundwater." *International Journal of Applied Earth Observation and Geoinformation*, Vol 13(1), 127-139. DOI:10.1016/j.jag.2010.09.001
, Journal , International
- Chahar, B.R., and Vadodaria, G. P. (2010). "Optimal Spacing in an Array of Ditches for Subsurface Drainage." *J. Irrig. And Drain. Engrg., ASCE*, Vol 136(1), 63-67. DOI: 10.1061/(ASCE)IR.1943-4774.0000122. , Journal , International
- Chahar, B.R. (2010). "Discussion of 'Least-Cost and Most Efficient Channel Cross Sections' by Gerald E. Blackler and James C. Y. Guo." *J. Irrig. And Drain. Engrg., ASCE*, Vol 136(8), 579-580. DOI: 10.1061/(ASCE)IR.1943-4774.0000180 , Journal , International
- Chahar, B.R. (2009). "Seepage from a Special Class of a Curved Channel with Drainage Layer at Shallow Depth." *Water Resource Research*, Vol 45(9), W09423, DOI:10.1029/2009WR007899. , Journal , International
- Sudheer ch, Deepak Kumar, S. K. Sohani, Anushree Malik, B.R. Chahar, A.K. Nema, B.K. Panigrahi , and R.C. Dhiman (2013) " A Support Vector Machine-Fire Fly Algorithm based forecasting model to determine malaria transmission" *Neurocomputing*, Elsevier Publishers, In Print , Journal , International
- Chahar, B.R., and Basu S. (2009). "Optimal Design of Curved Bed Trapezoidal Canal Sections." *Proc. ICE, Water Management*, Vol 162(WM3), 233-240. DOI: 10.1680/wama.2009.162.3.233 , Journal , International
- Chahar, B.R., and Vadodaria, G. P. (2008). "Steady Subsurface Drainage of Homogeneous Soil by Ditches." *Proc. ICE, Water Management*, Vol 161(WM6), 303-311. DOI: 10.1680/wama.2008.161.6.303 , Journal , International
- Chahar, B.R., and Vadodaria, G. P. (2008). "Drainage of Poned Surface by an Array of Ditches." *J. Irrig. And Drain. Engrg., ASCE*, Vol. 134(6), 815-823. DOI: 10.1061/(ASCE)0733-9437(2008)134:6(815) , Journal , International
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- Chahar, B.R. (2007). "Optimal Design of a special Class of Curvilinear Bottomed Channel Section." *J. Hydraulic Engrg., ASCE*, Vol. 133(5), 571-576. DOI: 10.1061/(ASCE)0733-9429(2007)133:5(571) , Journal , International
- Chahar, B.R. (2006). "Discussion on 'Seepage through a Levee' by G. C. Mishra and A. K. Singh." *International J. of Geomechanics*, ASCE, Vol. 6(3), 209-211. DOI: 10.1061/(ASCE)1532-3641(2005)6:3(209) , Journal , International
- Chahar, B.R. (2006). "Analytical solution to seepage problem from a soil channel with a curvilinear bottom." *Water Resource Research*, Vol. 42, W01403, DOI:10.1029/2005WR004140. , Journal , International
- Chahar, B.R. (2005). "Optimal Design of a Parabolic Channel Section." *J. Irrig. And Drain. Engrg., ASCE*, Vol. 131(6), 546-554. DOI: 10.1061/(ASCE)0733-9437(2005)131:6(546) , Journal , International
- Chahar, B.R. (2004). "Determination of Length of a Horizontal Drain in Homogeneous Earth Dams." *J. Irrig. And Drain. Engrg., ASCE*, Vol. 130(6), 530-536. DOI: 10.1061/(ASCE)0733-9437(2004)130:6(530) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2002). "Optimal design of transmission canal." *J. Irrig. And Drain. Engrg., ASCE*, Vol. 128(4), 234-243. DOI: 10.1061/(ASCE)0733-9437(2002)128:4(234) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2002). "Design of minimum water loss canal sections." *J. Hyd. Res., IAHR*, Vol. 40(2), 215-220. , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2001). "Design of minimum seepage loss canal sections with drainage layer at shallow depth." *J. Irrig. And Drain. Engrg., ASCE*, Vol. 127(5), 287-294. DOI: 10.1061/(ASCE)0733-9437(2001)127:5(287) , Journal , International
- Chahar, B.R. (2001). "Extension of Vedernikov's graphs for seepage from canals." *Ground Water*, NGWA, Vol. 39(2), 272-275. , Journal , International

- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2001). "Design of minimum earthwork cost canal sections." Water Resour. Mangmnt., Vol. 15(1), 17-30. DOI: 10.1023/A:1012244603325 , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2000). "Comprehensive design of minimum cost irrigation canal sections." J. Irrig. And Drain. Engrg., ASCE, Vol. 126(5), 322-327. DOI: 10.1061/(ASCE)0733-9437(2000)126:5(322) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2000). "Solution for a stream depletion problem." J. Irrig. And Drain. Engrg., ASCE, Vol. 126(2), 125-126. DOI: 10.1061/(ASCE)0733-9437(2000)126:2(125) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2000). "Design of minimum seepage loss canal sections." J. Irrig. And Drain. Engrg., ASCE, Vol. 126(1), 28-32. DOI: 10.1061/(ASCE)0733-9437(2000)126:1(28) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2000). "Simple approximation for a flowing well problem." J. Irrig. And Drain. Engrg., ASCE, Vol. 126(1), 65-67. DOI:10.1061/(ASCE)0733-9437(2000)126:1(65) , Journal , International
- Swamee, P.K., Mishra, G.C., and Chahar, B.R. (2000). "Minimum cost design of lined canal sections." Water Resour. Mangmnt., Vol. 14(1), 1-12. DOI: 10.1023/A:1008198602337 , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	24	15
M.Tech.	Completed	22	8
Ph.D.	Completed	4	3
Ph.D.	In Progress	6	6

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	9	10000000
Consultancy	25	10000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	37	18
Journal	National	7	2
Conference	International	38	15
Conference	National	20	9

Patent & IPR

Course Name	L-T-P	Course Belongs To
GROUNDWATER HYDROLOGY	3-0-0	PG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG
DESIGN OF HYDRAULIC STRUCTURES	2-0-2	UG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG

Awards & Distinctions

- (1.) Visiting International Fellowship 2013, EWRI of ASCE; (2.) AICTE Career Award for Young Teacher – 2001; (3.) DST - SERC Young Scientist award – 2003.

Society Membership, Certification & Training & Any Other Details

- (1) Fellow, Indian Society for Hydraulics; (2) Fellow, IWWA; (3) Fellow, IWRS; (4) Life Member, ISTE; (5) Life Member, IAH; (6) Life Member, IE (India); (7) Member, ASCE

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
MANOJ DATTA	1980	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Delhi	1977
Ph.D.	Geotechnical Engineering	IIT Delhi	1980

Research Areas and Highlights

Geotechnical Engineering, Foundations, Ground Improvement, Site Investigations, Slope Stability, Geoenvironmental Engineering, Landfills, Ash Ponds.

Co-authored a book titled 'Geotechnical Engineering' (with Prof. S.K. Gulhati; Pub: Tata McGraw Hill).

Edited 3 Books on 'Environmental Geotechnics', 'Landfills' and 'Ash Ponds'.

Lead author of 4 Design Manuals for CPCB on MSW and HW Landfills.

Published over 100 papers.

Consultant Incharge / Co-Consultant for over 120 projects.

Principal Investigator of 5 Sponsored Research Projects.

Coordinator /Organizing Member of 15 Short Courses and Training Programmes.

Guided 6 PhDs and 48 M Tech Thesis.

Experience

Lecturer, Civil Engg. Deptt., IIT Delhi : 1980 - 86;
Secondment to Industry : 1985 - 86;
Asst. Prof., Civil Engg. Deptt., IIT Delhi : 1986 - 91;
Assoc. Prof., Civil Engg. Deptt., IIT Delhi : 1991 – 97;
Professor, Civil Engg. Deptt., IIT Delhi : 1997 – contd.;
Dean, Alumni & International Prog., IIT Delhi : 2004 – 07;
Director, PEC Univ of Tech Chandigarh (Deemed University): 2008 – 2013.

Significant Publications

- Singh, R.K., Datta, M., and Nema, A.K., (2013), "Evaluating groundwater contamination hazard rating of MSW landfills using a new system – case studies", Journal of Hazardous, Toxic and Radioactive Waste, ASCE, Vol17(1), pp 62-73. , Journal , International
- Haneberg, W., Gurung, N., Ramana, G., and Datta, M. (2010), " Engineering Geology and Stability of Laprak Landslide, Gorkha District, Western Nepal", Environmental & Engineering Geoscience, Association of Engineering Geologists and Geological Society of America,(#EEG-1191R) , Journal , International
- Singh, R.K., Datta, M., and Nema, A.K. (2010) "Factoring site age in evaluation of groundwater contamination hazard rating of abandoned MSW landfill sites", ASCE Journal of Environmental Engineering, Vol 137(11), pp 1092-98. , Journal , International
- Jakka, Ravi S., Datta, M., and Ramana, G.V., (2010), " Liquefaction Behaviour of Loose and Compacted Pond Ash", Soil Dynamics and Earthquake Engineering, Elsevier, Vol. 30, pp. 580 - 590 , Journal , International

- Gulhati, S.K. and Datta, M (2005), Geotechnical Engineering, Tata Mcgraw Hill, Delhi, 738 pages , Books , National
- Datta, M., (2012) , "Geotechnology for Environmental Control at Waste Disposal Sites", Indian Geotechnical Journal, Springer, Vol. 42, No. 1, pp1-36 , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
M.Tech.	Completed	48	2
Ph.D.	Completed	6	2
Ph.D.	In Progress	2	2

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	5	50
Consultancy	120	50

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	15	7
Journal	National	9	1
Conference	International	36	8
Conference	National	50	6
Books	National	1	0
Books Edited	International	1	1
Books Edited	National	3	0

Patent & IPR

Course Name	L-T-P	Course Belongs To
ENGG. GEOLOGY & SOIL MECHANICS	3-1-3	UG
GEOTECHNICAL ENGINEERING	3-1-3	UG
GROUND IMPROVEMENT	3-0-2	UG
SLOPE STABILIGY AND EARTH DAMS	3-0-0	PG
SITE INVESTIGATIONS AND GROUND IMPROVEMENT	3-0-0	PG
SHALLOW AND DEEP FOUNDATIONS	3-0-0	PG
GEOENVIRONMENTAL ENGINEERING	3-0-0	PG
GEOSYNTHETICS	3-0-0	PG
LANDFILLS AND ASH PONDS	3-0-0	PG
SOIL ENGINEERING LABORATORY	0-0-6	PG
GEOENVIRONMENTAL AND GEOTECHNICAL ENGG.LAB.	0-0-6	PG

Awards & Distinctions

- Indian Geotechnical Society – ONGC best paper award (1986)
- Indian Geotechnical Society – ONGC best paper award (1989)
- Indian Getechnical Society – AIMIL best paper award (1990)
- Indian Geotechnical Society – ONGC best paper award (1993)
- Indian Geotechnical Society – Prof. Dinesh Mohan best paper award (1996)
- Indian Geotechnical Society Annual Lecture (2011) – one geotechnical engineer selected from the entire country to

deliver the annual lecture

- Indian Geotechnical Society (Delhi Chapter) – Leadership Award (2008)
- Director’s Silver Medal at I.I.T. Delhi for being first amongst Civil Engineering Students Graduating in 1977.

Society Membership, Certification & Training & Any Other Details

- Fellow, Indian Geotechnical Society
- Member, Institution of Engineers (India)
- Member, Indian Society of Technical Education

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
T.K. DATTA	2010	Civil Engineering , Emeritus Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	BE College Shibpur	1966
ME	Structural Engineering	BE College Shibpur	1969
Ph.D.	Structural Engineering	IIT Bombay	1973

Research Areas and Highlights

Structural Engineering, Earthquake Engineering, Wind Engineering, Offshore Dynamics, Structural Control.

Experience

40 years of teaching and research in IIT Bombay and IIT Delhi

Significant Publications

- Seismic Analysis of Structures by John Weily , Books , International
- Goyal, P.K. and Datta, T.K. "A Method for Preliminary Estimate of Vulnerability of Rural Houses to Cyclonic Wind", 4th International Conference on Structural Stability and Dynamics, organized by Texas A&M University at MNIT, Jaipur, January 4-6' 2012. , Conference , International
- Banik, A.K. and Datta, T.K. "Stochastic Response and Stability Analysis of Two-Point Mooring System", 30th International Conference on Ocean, Offshore and Arctic Engineering, ASME, Rotterdam, June 19-24', pp. 549-558, 2011. , Conference , International
- Kumar, D. and Datta, T.K., "Stochastic Response of Articulated Leg Platform in Probability Domain", 5th International conference on computational stochastic mechanics, Rhodes, Greece, June 20-23' 2006. , Conference , International
- Bharadwaj, M.K. and Datta, T.K. "Optimization of Damper Parameters of Semiactively controlled Building Frames Using Fuzzy Logic", Proc. 8th International conference on Recent Advances in Structural Dynamics, Southampton, U.K., 2003. , Conference , International
- Pourzeynali, S. and Datta, T.K. "Reliability Analysis of Suspension Bridges Against Buffeting Failure", Proc. 6th International Conference on Civil Engineering, Isfahan, Iran, 2003. , Conference , International
- Das, D., Datta, T.K. and Madan, A. "Semi-active Fuzzy Control of the Seismic Response Reduction of Building Frames with MR Dampers", Earthquake Engineering and Structural Dynamics, 33, 723-736. 2012. , Journal , International
- Kumar, Dipak and Datta, T.K. "Stochastic Response of Articulated Leg Plat form in probability Domain", Jr. of Probabilistic Engineering Mechanics, 23, 227-236, 2008. , Journal , International
- Bhardwaj, M.K. and Datta, T.K. "Semiactive Fuzzy Control of the Seismic Response of Building Frames", Jr. of Structural Engineering, ASCE, Vol. 132, No. 5, 791-799, 2006. , Journal , International
- Rao, M.M. and Datta, T.K. "Model Seismic Control of Building Frames by ANN", Jr. of Computing in Civil Engineering, ASCE, 20(1), 69-73, 2006. , Journal , International
- Suneja B.P. and Datta T.K. "Open Close Loop Active Control of Articulated Leg Platform", Jr. of Engineering Mechanics, ASCE, vol. 124(7), 734-740, 1998. , Journal , International
- Datta, T.K. "State of the Art Review on Performance based Seismic Design", 14th Symposium on Earthquake Engineering, IIT Roorkee, 2010. , Conference , National

- Khan, R. and Datta, T.K. "Fragility Analysis of Cable Stayed Bridges", 12th Symposium on Earthquake Engineering, Roorkee, 2002. , Conference , National
- Bhardwaj, M.K. and Datta, T.K. "Fuzzy Rule Based Semi-active Control of Building Frames under seismic Excitation", 12th Symposium on Earthquake Engineering, Roorkee, 2002. , Conference , National
- Allam, S.M. and Datta, T.K. "Frequency Domain Analysis of Cable Stayed Bridges Under Stationary Random Ground Motion," Proc. 11th Symposium on Earthquake Engineering, Roorkee, 1998. , Conference , National
- Sarbjeet, S. and Datta, T.K. "Nonlinear Active Control of Building Frames under Seismic Excitation," Proc. 11th Symposium on Earthquake Engineering, Roorkee, 1998. , Conference , National
- Naqvi, T., Datta, T.K. and Ramana, G.V. "Fragility analysis of flexible base buildings building frame", The IUP Journal of Structural Engineering, vol. III(4), 7-25, 2010. , Journal , National
- Kumar Deepak and Datta T.K. "Stochastic Response of Nonlinear System in Probability Domain", Sadhana 31(4), 325-342, 2006. , Journal , National
- Seid, Pourzeynali and Datta, T.K. "Finite Element Based Stability Analysis of Suspension Bridge Due to Flutter", Jr. of Structural Engineering, vol. 30(2), 101-110, 2003. , Journal , National
- Datta, T.K. "State of the Art Review on Response Triggered Control of Structures", ISET Jr. of Earthquake Technology, vol. 40(1), 1-17, 2003. , Journal , National
- Datta T.K., Bisht R.S. and Jain A.K. "Stochastic Response of Guyed Tower under Second Order Wave Forces", Sadhana, vol. 20 (2-4), 513-528, 1995. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	70	10
M.Tech.	Completed	180	20
Ph.D.	Completed	30	2

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	10	10000000
Consultancy	200	50000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	114	13
Journal	National	22	2
Conference	International	58	7
Conference	National	48	1
Books	International	1	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
ADVANCED STRUCTURAL ANALYSIS	3-0-0	PG
WIND RESISTANT DESIGN OF STRUCTURES	3-0-0	PG
EARTHQUAKE ANALYSIS AND DESIGN	3-0-0	PG
DESIGN OF OFFSHORE STRUCTURES	2-1-0	PG

STRUCTURAL SAFETY & RELIABILITY	3-0-0	PG
DESIGN OF PLATES & SHELLS	2-1-0	PG
STRUCTURAL ANALYSIS I	3-1-2	UG
STRUCTURAL ANALYSIS II	3-1-2	UG
ADVANCED STRUCTURAL ANALYSIS	2-0-2	UG

Awards & Distinctions

- IIT Delhi Golden Jubilee Honor the mentor Felicitation Award.
- Life time Achievement Award in Dynamics given in the International Conference on Structural Stability and Dynamics organized by Texas Tech University, USA at NIT Jaipur in 2012.
- 15th Khwarizmi International Award' (2002)
- Fellow, Indian National Academy of Engineering
- Member, Core group of Dynamics, Engineering Mechanics Division of ASCE (from 2003 onwards)
- Member, Editorial Board of Probabilistic Engineering Mechanics

Society Membership, Certification & Training & Any Other Details

- Society of Earthquake Engineering, INDIA

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
N.K. GARG	1980	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	University of Roorkee (now IIT Roorkee)	1976
M.Tech.	Water Resorces	IIT Delhi	1978
Ph.D.	Finite Elements	Swansea, University of Wales (UK)	1985

Research Areas and Highlights

Water Resources System, Finite Element, Watershed Modelling, Irrigation Management, CAD.

1. Terrain and Watershed Modelling
2. Integrated Irrigation Management Models
3. Design of Hydraulic Structures
4. Sediment Handling for Turbines
5. Geo-Environmental Pollution
6. Sustainable Development of Water Resources of India

Experience

More than 30 years experience in teaching and research at IIT Delhi. The research work is published in leading international journals. Some of the comments are as follows:

Peer Reviewer's Comments on the Research Work

Prof. Douglas James, then Chief, Hydrological Sciences, National Science Foundation, USA had rated one of the research works as "outstanding Piece of Work..... Can Justifiably be Proud of....for the First Time to my Knowledge" .

Prof.Neil Grigg, Head, Department of Civil Engineeering, Colorado State University, Fort Collins, U.S.A. had rated another research work as "...of a High Level Quality...Similar to that at Colorado State University.....".

Consultancy Work Completed in Last Few Years

Never involved in routine work and accepted the work only when high level of expertise was required.

Took only three consultancies work but with total amount Rs. 1.85 Crores

Significant Publications

- Research Areas with Sample Publications

1. Integrated Irrigation Management Models

Garg, N., K., Ali, A., 2000. Groundwater management for Lower Indus Basin. Agricultural Water Management. 42,273-290.

2. Terrain and Watershed Modelling

Garg N.K., Sen D.J., 2001. Integrated physically based rainfall-runoff model using FEM. Journal of Hydrologic Engineering –ASCE. 6(3), 179-188.

, Journal , International

• 3. Design of Hydraulic Structures

Garg N.K., Bhagat SK, Asthana BN., 2002. Optimal Barrage Design based on Subsurface Flow Considerations. Journal of Irrigation and Drainage Engineering–ASCE. 128(4), 253-263.

4. Sediment Handling for Turbines

Pandit, H.P., Shakya, N.M., Stole, H., Garg, N.K., 2009. Hydraulic and sediment removal performance of a modified hydrocyclone. Minerals Engineering. 22, 412–414.

, Journal , International

• 5.Sustainable Development of Water Resources of India

Garg, N., K., Hassan, Q., 2007. Alarming scarcity of water in India. Current Science. 93, 932–941.

6. Geo-Environmental Pollution

Gupta,M., Garg,N.K., Joshi,H.,Sharma, M.,P., 2012.Persistence and mobility of 2,4-D in unsaturated soil zone under winter wheat crop in sub tropical region of India. Agriculture, Ecosystems and Environment. 146, 60-72.

, Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	7	3

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
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Type of Publication	Level of Publication	Total Publication	In last 5 years
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Patent & IPR

Course Name	L-T-P	Course Belongs To
FINITE ELEMENTS IN WATER RESOURCES	3-0-0	PG
SIMULATION LABORATORY	1-0-6	PG
MINI PROJECT (CE)	0-0-6	UG
MINI PROJECT (CE)	0-0-6	UG
MAJOR PROJECT PART 1 (CE)	0-0-6	UG
MAJOR PROJECT PART 1 (CE)	0-0-6	UG
MAJOR PROJECT PART 2 (CE)	0-0-14	UG
MAJOR PROJECT PART 2 (CE)	0-0-14	UG
COMPUTATIONAL ASPECTS IN WATER RESOURCES	1-0-4	UG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details
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Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
A.K. GOSAIN	1977	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Punjab Engineering College, Chandigarh	1974
M.Tech.	Water Resources Engineering	Indian Institute of Technology Delhi	1976
Ph.D.	Hydrological Modelling	Indian Institute of Technology Delhi	1984

Research Areas and Highlights

Integrated Watershed Modelling, GIS Hydrological Modelling, Irrigation Management, Environmental Impact Assessment.

Experience

Significant Publications

- Sudheer, K. P., Gosain, A. K., and Ramasastri, K. S. (2003) Estimating actual evapotranspiration from limited climatic data using artificial neural network technique. Journal of Irrigation and Drainage Engineering, ASCE, 129, 3, 214-218. , Journal , International
- Ambast, S. K., Keshari, A. K. and Gosain, A. K. (2003). Estimation of distributed daily evapotranspiration using remotely sensed data, Hydrology Journal, 26(4), pp 13-29. , Journal , International
- Gosain, A. K., Sandhya Rao, R. Srinivasan and N. Gopal Reddy (2005), Return-flow assessment for irrigation command in the Palleru river basin using SWAT model, Hydrological Processes. 19, pp 673-682. , Journal , International
- Rao, Y.R.S., Keshari, A.K., Gosain, A.K. (2010) Evaluation of regional groundwater quality using PCA and geostatistics in the urban coastal aquifer, East Coast of India. International Journal of Environment and Waste Management. Vol. 5 (1-2), pp 163-80. , Journal , International
- Dasgupta, S. Gosain, A.K., Rao, S., Roy, S. and Sarraf, M. (2012). "A megacity in a changing climate: the case of Kolkata." Climatic Change: 1-20 , Journal , International
- Gosain, A. K., and Sandhya Rao (2004), GIS-based Technologies for Watershed Management, Current Science, Vol. 87 (7) , Journal , National
- Gosain, A. K., and Singh, A. (2004). "Water Rights in Indian Transboundary Watercourses" Hydrology Review Journal Volume 19 (1-2), pp 51-60. , Journal , National
- Gosain, A. K., Sandhya Rao, and Debajit Basuray (2006). Climate change impact assessment on hydrology of Indian River basins, Current Science, Vol. 90 (3), pp 346-353. , Journal , National
- Gosain, A.K., Rao, S., Singh, P., and Arora, A. (2010) Integration of Bio-geo spatial database for selected watersheds in Himalayan region. Current Science, Vol. 98 (2), pp 183-91 , Journal , National
- Gosain, A. K., Sandhya Rao, and Anamika Arora (2011). Climate change impact assessment of Water Resources of India, Current Science, Vol. 101 (3), pp 356-371. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
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Ph.D.	Completed	16	3
M.Tech.	Completed	22	5

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	28	114300000
Consultancy	48	60500000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	33	14
Journal	National	8	2
Conference	International	44	8
Conference	National	36	4
Books	International	1	1
Books Edited	International	1	1
Books Chapter	International	4	2
Books Chapter	National	4	2

Patent & IPR

Course Name	L-T-P	Course Belongs To
GEOGRAPHIC INFORMATION SYSTEMS	2-0-2	PG
INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS	2-0-2	UG
MAJOR PROJECT (CEY)	0-0-80	PG

Awards & Distinctions

- Member, Expert Committee constituted by MoEF, as directed by National Green Tribunal to examine the Yamuna Front Development Plan of DDA, October 2013
- Member, High Level Steering Committee, the National Water Mission, formulated as part of the National Action Plan on Climate Change (NAPCC), Ministry of Water Resources, Government of India, with effect
- Member, Intersectoral Advisory Group of National Water Mission for Goal-1: Comprehensive Water Database in Public Domain and Assessment of Climate Change on Water Resources, Ministry of Water Resource
- Member, Inter-Agency Consultation Meeting on User Interface Platform (UIP) for Agriculture, Food Security and Water Sectors of the Global Framework for Climate Services, FAO, Rome, Italy, 26-28 Septem
- Member, National Task Force on Geo-informatics in Education, under the Chairmanship of Dr. Kasturirangan, Member, Planning Commission, formulated by the Ministry of Human Resource Development, Governm
- Team Leader, Water Resources Management group, IIT Consortium for preparation of the Ganga River Basin Management Plan (GRBMP), April, 2010
- Member, Technical Expert Committee on Mission: WAR (Winning, Augmenting and Renovation) for Water, Committee constituted on directive from the Supreme Court of India by the Department of Science and T
- Member, the Indian National Committee (Indian NMO Committee), India-IIASA Programme, since 2008
- Member, Resource Materials Development on 'IWRM as a Tool for Climate Change Adaptation in the Water Sector' WMO-CapNet, WMO Secretariat, Geneva, Switzerland, November, 2008

Society Membership, Certification & Training & Any Other Details

- Fellow – Indian Association of Hydrologists
- Life Member – International Association of Hydrological Sciences
- Life Member – Indian Water Resources Society
- Life Member – Indian Dryland Agricultural Society
- Life Member – Indian Society for Technical Education
- Life Member – Indian Society of Geomatics
- Life Member –NDC of World Water Council

**Brief CV
of
Prof. Ashok Gupta**



Ashok Gupta is Professor in the Department of Civil Engineering, IIT Delhi. He obtained his B.Tech in Civil Engineering from IIT Delhi (First Class with Distinction) in 1979 and PhD from IIT Delhi from Civil Engineering Department in 1984. He has about thirty years of research and teaching experience in India and abroad. He has supervised five PhD thesis, several M.Tech. and B.Tech projects. He has published a book on *Fatigue Behaviour of Offshore Structures* (Springer-Verlag) and eBook (CDROM) *Interactive Engineering Mechanics: Statics* (Pearson Education) and more than seventy papers in leading journals and peer reviewed conferences. His areas of specialization include earthquake engineering, health monitoring of structures and elearning. He has held visiting research and teaching appointments at MIT (USA), EPFL (Switzerland) and Nanyang Technological University (Singapore). He has been Professor in charge Planning from 2004 to 2007 and Dean of Alumni Affairs and International Programmes from 2007 to 2011 and is currently Dean, Infrastructure at IIT Delhi.

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
K. CHANDRASHEKHAR IYER	1998	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	Institute of Technology, Banaras Hindu University, Varanasi (now called IIT(BHU), Varanasi)	1882
M.Tech.	Structural Engineering	Indian Institute of Technology, Kanpur	1984
Ph.D.	Identification and Evaluation of Dispute-Prone Clauses in Indian Construction Contracts	Indian Institute of Technology Madras, Chennai	1997

Research Areas and Highlights

Construction Engineering and Management, Infrastructure Projects, Financial and Risk Modeling; Contracts and Arbitration, Structural Engineering, VDC & Building Information Model.

Experience

PROFESSIONAL EXPERIENCE

- Project Manager in DRDO (Oct'88-Dec'98). For my contribution I was awarded COMMENDATION CERTIFICATE by Ministry of Defence and also granted study leave to pursue Ph.D.
- Contract Manager in MES (from Feb '86 to Sep '88)
- Planning & Methods Engineer in MDL (from Sep '84 to Feb '86)

ACADEMIC EXPERIENCE

- Assistant Professor (Dec 1998-Jan 2005) in the Department of Civil Engineering, I.I.T. Delhi
- Associate Professor (JAN 2005 - AUG 2008) in the Department of Management Studies, I.I.T. Delhi
- Professor (Aug 2008 - till date) in the Department of Civil Engineering, I.I.T. Delhi

Besides teaching, guided 9 Doctoral students and over 70 M.Tech. Projects; undertook five sponsored projects worth over Rs 60 lakhs and published 80 papers in journals and conferences.

Taught Ethiopian students of ADDIS ABABA UNIVERSITY through video conferencing mode and helping them acquire professional skills in construction management during 2008-1011.

Significant Publications

- Bhattacharya, S., Iyer, K. C. and Momaya, K. (2013). "Enablers of Growth in Indian Construction Companies: A Comparative Study of Polar Cases", International Journal of Organizational Analysis, 21(3), Pp. 428-453 , Journal , International
- Iyer, K.C. and Sagheer, Md. (2012). "Optimization of Bid-Winning Potential and Capital Structure for Build-Operate-Transfer Road Projects in India", ASCE Journal of Construction Engineering and Management, 28 (2), Pp 104-113. , Journal , International
- Agarwal, Y., Iyer, K.C. and Yadav, S.S. (2012). "Multi objective Capital Structure Modeling: An Empirical Investigation of Goal Programming Model using Accounting Proxies", Journal of Accounting Auditing and Finance, Vol. 27 (3), Pp 359-385. , Journal , International
- Iyer, K.C. and Sagheer, Md. (2011). "A real options based traffic risk mitigation model for build-operate-transfer highway projects in India."

Construction Management and Economics. Vol. 28 (8), Pp. 771-779. , Journal , International

- Doloi, H., Iyer, K.C. and Sawhney, A. (2011). "Structural equation model for assessing impacts of contractors performance on project success". International Journal of Project Management, UK. Vol. 29 (6), Pp 687-695 , Journal , International
- Iyer, K.C., and Sagheer, Md. (2010). "Hierarchical Structuring of PPP Risks using Interpretative Structural Modeling". ASCE Journal of Construction Engineering and Management, 136(2), Pp 151-159 , Journal , International
- Breja, S.K., Banwet, D.K. and Iyer, K.C. (2011). "Developing a relative and inventive framework for sustainable business excellence", International Journal of Productivity and Quality Management, Vol 8(1), Pp 1-32 , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	9	6
Ph.D.	In Progress	8	8
M.Tech.	Completed	94	40
M.Tech.	In Progress	9	9

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	5	5000000
Consultancy	50	10000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	30	16
Journal	National	20	8
Conference	International	22	7
Conference	National	12	2

Patent & IPR

Course Name	L-T-P	Course Belongs To
QUANTITATIVE METHODS IN CONSTRUCTION MANAGEMENT	2-1-0	PG
CONSTRUCTION ECONOMICS AND FINANCE	3-0-0	PG
INFRASTRUCTURE PLANNING AND MANAGEMENT	3-0-0	UG
PRACTICAL TRAINING	0-0-8	PG
Infrastructure Development and Management	3-0-0	UG
CONSTRUCTION AND CONTRACT MANAGEMENT	3-0-0	PG
COMPUTATION LAB FOR CONSTRUCTION MANAGEMENT	0-0-6	PG
CONSTRUCTION METHODS AND EQUIPMENT	3-0-0	PG
CONSTRUCTION CONTRACT AND ECONOMICS	2-1-0	UG
CONSTRUCTION MANAGEMENT	3-1-0	UG
MANAGEMENT OF QUALITY AND SAFETY IN CONSTRUCTION	3-0-0	PG
CONSTRUCTION ENGINEERING PRACTICES	3-0-0	PG
QUANTUM METHODS	2-0-2	PG
OPERATIONS MANAGEMENT	3-0-0	PG
TOTAL PROJECT SYSTEMS MANAGEMENT	3-0-0	PG
BUSINESS LAW	2-0-2	PG
INDIAN FINANCIAL SYSTEM	3-0-0	PG

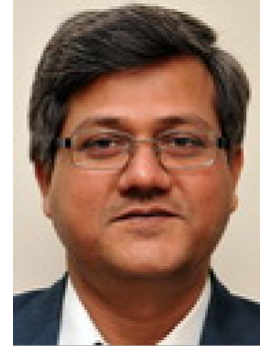
Awards & Distinctions

- Teaching Excellence Award 2012 from Indian Institute of Technology Delhi
- Vishwakarma Award 2010 for the category Outstanding Academician from Construction Industry Development Council
- Best Technical Paper Award from Institution of Naval Architects (Delhi Chapter) in 2009
- "Certificate of Merit" from the National Institute of Construction Management and Research for a technical paper in their Journal in 2002
- Certificate of Merit from the Institution of Engineers (India) for a technical paper in their Journal in 1995
- Commendation Certificate from the Ministry of Defence, Government of India for significant contribution to India's Missile Development Programme (1989)
- Member of Technical Committee of JNNURM, Government of India
- Member of Panel of Arbitrators of CIDC-SIAC Arbitration Centre
- Independent Director on the board of Telecommunications Consultants India Limited (TCIL) since July 2012
- Independent Director on the board of National Building Construction Corporation (NBCC) Limited since December 2011

Society Membership, Certification & Training & Any Other Details

- Life Fellow of Institution of Engineers (India)
- Life Fellow of Institution of Surveyors (India)
- Life Member of Global Institute of Flexible Systems Management

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
A.K.KESHARI	1997	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	M.I.T. Muzaffarpur, India	1987
M.Tech.	Remote Sensing & Environment, Engineering Geology, Geochemistry, Geoinformatics	I.I.T. Kanpur, India	1990
Ph.D.	Hydraulics & Water Resources Engineering, Hydrology & Hydrogeology, Groundwater Pollution Modelling	I.I.T. Kanpur, India	1994

Research Areas and Highlights

• Hydrological & Environmental Modelling • Hydrogeology & Groundwater Pollution Modelling • Groundwater Recharge & Remediation • Remote Sensing & GIS • Irrigation & Hydropower Engineering • Hydraulic and Civic Services Infrastructures • Environmental Impact Assessment (EIA) & Sustainable Development • Resources Planning & Management • Snow Hydrology & Avalanche Dynamics • Geoinformatics • Engineering Geology and Geoenvironmental Sciences • Optimization & FEM Techniques • Rainwater Harvesting & Water Management • Sustainable Urban Design • Wastewater Management • River Hydraulics & River Water Quality Modelling • Reservoir Sedimentation • Environmental Ethics • Water and Environmental Policy Analysis • Decision Making & Conflict Resolution • Climate Change Implications on Hydrological Regime • Water Resources Project Economics

Experience

Prof. A. K. Keshari has more than 20 years of experience. He is a civil engineer and specializes in Hydraulics and Water Resources Engineering, Environmental Sciences and Engineering, and Geoinformatics. He has also worked as Director of School of Environmental Sciences and Engineering, Dean of Mathematics, Sciences and Engineering, and Provost at an American University, Asian University for Women, Visiting Faculty at Kongju National University, South Korea, Scientist at National Institute of Hydrology, Roorkee, Senior Project Associate at IIT Kanpur and Sub-Divisional Officer (Civil) at North Eastern Electric Power Corporation, Shillong, besides Water Resources Engineering Section Coordinator, Departmental Research Committee Convener, In-Charges of Simulation Laboratory, Time Table and Library, Colloquium Co-Coordinator and Groundwater Group Coordinator of Indo-French Unit for Water and Waste Technologies at IIT Delhi. He has carried out projects for a number of organizations.

Significant Publications

1. A. K. Keshari. Groundwater flow and pollution modelling coupled embedded optimization for groundwater resources management. Modelling, Simulation and Optimization in Applications, Darmstadt, Germany, September 5-7, 2012, 1-16. , Conference , International
2. A. K. Keshari Wastewater Management: Challenges and Solutions. 3rd India International Water Summit and concurrent Workshop on "Industrial Waste Water Treatment and Water Usage Efficiency", New Delhi, India, October 18-19, 2012, 1-15. , Conference , International
4. A. K. Keshari. River water pollution and modelling plans for water quality management: Water quality modelling. Water Quality Monitoring in Asia and the Pacific: Challenges and Opportunities, New Delhi, India, November 5-8, 2012, 1-12. , Conference , International
5. Ashok K. Keshari. Coupling modeling with growth dynamics for sustainability of groundwater resources. IGWC 2012, 5th International Groundwater Conference on the "Assessment and Management of Groundwater Resources in Hard Rock Systems with Special Reference to

Basaltic Terrain”, Aurangabad, India, December 18-21, 2012, v. 4, 244/1-13. , Conference , International

- 6. Ashwani Soni, Ashok K. Keshari and H. S. Gupta. Assessment of groundwater vulnerability of alluvial aquifers of Central Punjab, India using quantitative method. IGWC 2012, 5th International Groundwater Conference on the “Assessment and Management of Groundwater Resources in Hard Rock Systems with Special Reference to Basaltic Terrain”, Aurangabad, India, December 18-21, 2012, v. 4, 177-192. , Conference , International
- 5. Ashok K. Keshari. Coupling modeling with growth dynamics for sustainability of groundwater resources. IGWC 2012, 5th International Groundwater Conference on the “Assessment and Management of Groundwater Resources in Hard Rock Systems with Special Reference to Basaltic Terrain”, Aurangabad, India, December 18-21, 2012, v. 4, 244/1-13. , Conference , International
- 2. A. K. Keshari. Wastewater Management: Challenges and Solutions. 3rd India International Water Summit and concurrent Workshop on “Industrial Waste Water Treatment and Water Usage Efficiency”, New Delhi, India, October 18-19, 2012, 1-15. , Conference , International
- 7. Y. R. Satyajai Rao and A. K. Keshari. Impact of septic tanks on shallow groundwater quality in Kakinada coastal aquifers. IGWC 2012, 5th International Groundwater Conference on the “Assessment and Management of Groundwater Resources in Hard Rock Systems with Special Reference to Basaltic Terrain”, Aurangabad, India, December 18-21, 2012, v. 3, 759-799. , Conference , International
- 1. Sumedha N Sahu, N K Sahoo, S N Naik, S Sharma, A. K. Keshari. Physico-chemical status of three surface water bodies in NCR of Delhi. 99th Indian Science Congress, Bhubaneswar, India, January 3-7, 2012, 213. , Conference , National
- 3. A. K. Keshari. Management of wastewater in mining industry. Sustainable Development in MCL, Sambalpur, India, November 23, 2012, 1-16. , Conference , National
- 2. A. K. Keshari. Management of wastewater in mining industry. Sustainable Development in MCL, Sambalpur, India, November 23, 2012, 1-16. , Conference , National
- 3. A. K. Keshari. Management of wastewater in mining industry. Sustainable Development in MCL, Sambalpur, India, November 23, 2012, 1-16. , Conference , National
- 8. A. K. Keshari. Tackling civil engineering challenges using remote sensing and geoinformatics. Applications and Advances of Geoinformatics in Civil Engineering, Bhopal, India, January 18-19, 2013, 1-15. , Conference , National
- 9. A. K. Keshari. Industrial wastewater: Concerns and regulatory landscape. Sustainability: Issues, Challenges and Path Forward, New Delhi, India, March 15, 2013, 1-17. , Conference , National
- 10. A. K. Keshari. Understanding science, engineering and environmental implications of rainwater harvesting. Groundwater Management: Challenges and Ways Forward, New Delhi, India, April 13, 2013, 1-10. , Conference , National
- 11. A. K. Keshari. Groundwater modeling in fractured aquifer systems for strategic interventions to ensure sustainability. Water Cooperation, Ranchi, India, May 12, 2013, 1-15. , Conference , National
- 12. N. K. Tiwary, A. K. Gosain and A. K. Keshari. Simulation of Bagmati river basin using SWAT model. Recent Advances in Civil Engineering, Patna, India, June 13-14, 2013, 276-291. , Conference , National
- 13. A. K. Keshari. Optimization of groundwater withdrawal and rainwater harvesting to ensure water sustainability in NCR. Water Conservation in NCT of Delhi, New Delhi, India, June 28, 2012, 1-13. , Conference , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	13	8
M.Tech.	Completed	35	5
B.Tech.	Completed	34	9
Ph.D.	In Progress	5	5
M.Tech.	In Progress	3	3
B.Tech.	In Progress	4	4

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	13	16742108
Consultancy	60	22234693
Technology Development	3	1490000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
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Patent & IPR

Course Name	L-T-P	Course Belongs To
OPTIMISATION TECHNIQUES IN WATER RESOURCES	3-0-0	PG
GROUND WATER FLOW AND POLLUTION MODELLING	3-0-0	PG
WATER POWER ENGINEERING	3-0-2	UG
HYDROLOGY AND HYDRAULICS	3-1-4	UG
INTRODUCTION TO REMOTE SENSING	2-0-2	UG
ADVANCED HYDRAULICS	3-0-0	PG
HYDROLOGIC APPLICATIONS OF REMOTE SENSING	2-0-2	PG
FINITE ELEMENTS IN WATER RESOURCES	3-0-0	PG
SIMULATION LABORATORY	1-0-6	PG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG
INDEPENDENT STUDY	0-3-0	PG

Awards & Distinctions

- INAE Young Engineer Award in Year 2000 from Indian National Academy of Engineering, presented by honourable former President of India Dr. A.P.J. Abdul Kalam
- Hem Prabha – S N Gupta Prize for the best paper by The Institution of Engineers (India) in Year 2008
- Commemorative Medal of Honor from American Biographical Institute, North Carolina, USA in Year 2000
- 1st Prize in Debate by M.I.T. in the Academic Year 1984-85
- 2nd Prize in Debate by National Institute of Hydrology in Year 1994
- Outstanding Institute Faculty by IIT Delhi in Year 2002 for the period 1991-2001
- Outstanding Institute Faculty by IIT Delhi in Year 2005 for the period 2001-2003
- Scientific work was featured in a documentary movie "Par Aavaran" telecasted on DD1 National TV Channel.
- Postdoctoral Fellowship from Korea Science & Engineering Foundation
- Citations from Japan International Cooperation Agency (JICA) in Year 2003
- Name figured in the Marquis Who's Who in the World, Nineteenth Edition, 2002
- Nominated as a member in the Central Level Expert Committee by the Ministry of Water Resources, Govt. of India for Overall Reassessment of Groundwater Resources of India
- Nominated as Board Member of the BOCS by Indian School of Mines University
- Appointed as Section Editor of Journal of Ground Water Research by the Association of Global Groundwater Scientists

Society Membership, Certification & Training & Any Other Details

- International Association of Hydrological Sciences (IAHS)
- American Society of Civil Engineers (ASCE)

- Association of Environmental Engineering Scientists and Professors (AEESP)
- Indian Association of Hydrologists (IAH)
- International Society of Groundwater for Sustainable Development (ISGSD)

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
MUKESH KHARE	1990	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	University of Roorkee, India	1977
ME	Environmental Engineering	University of Roorkee, India	1979
Ph.D.	Air Quality Modelling	Newcastle University, UK	1989

Research Areas and Highlights

Air & Vehicular Pollution Modelling, Indoor Air Pollution, Sustainable Urban Engineering.

Experience

Asst. Engineer: Irrigation Design Organization, UP (Dec1979-April 1981); Asst Env. Engineer, Pollution Control Board, UP (April 1981-March 1983); Research Scholar, Newcastle University, UK (April 1983-July 1989); Fellow, CSIR, NEERI, Nagpur(Oct 1989-April 1990); Lecturer/Asst Prof/Asoc. Prof/Professor, IIT Delhi (Aug 1990-todate); Visiting Lecturer, UNITECH, Papua New Guinea (July 1996-July 1997); Atlantic LNG Chair of Env. Eng., Univ. of West Indies, Trinidad (July 2006-July 2007); Invited Professor, EMN, Nante, France; Visiting Faculty, Harvard University, USA; Newcastle University, UK.

Significant Publications

- Khare, Mukesh (2004), Sectoral Analysis of Air Pollution Control in Delhi, in Regional and Local Aspects of Air Quality Management, ed. D. M. Elsom and J. W. S. Longhurst, WIT Press, UK. , Books Chapter , International
- Khare, Mukesh and Radha Goyal (2009), Indoor Air Pollution and Health Effects in Air Pollution: Health and Environmental Impacts, Ed. by Bhola R Gurjar, Luisa T Molina, C.S.P Ojha, Taylor and Francis. , Books Chapter , International
- Radha Goyal and Mukesh Khare (2011), Indoor Air Quality: Monitoring and Modelling Protocol for Urban School Buildings (Ch. 10), in Sick Building Syndrome: Public Buildings and Work Places, Ed. by Sabah A. Abdul Wahab, Springer, ISBN: 978-3-642-17918-1. , Books Chapter , International
- Kaushik K. Shandilya and Mukesh Khare (2012), Particulate Matter: Sources, Emission Rates and Health Effects (Ch. 12), in Advances in Environmental Research. Volume 23, Ed. Justin A. Daniels, Nova publishers, ISBN: 978-1-62100-837-8. , Books Chapter , International
- Kaushik K Shandilya, Mukesh Khare, Gupta, A.B (2012), "Particulate Matter Concentrations in Residential East Delhi & South Delhi, India", in Advances in Environmental Research, Volume 26, Nova publishers, Inc. , Books Chapter , International
- Khare, Mukesh, Sankat, C K, Shrivastava, G and Venkobachara, C (2008), Aluminium Smelting: Health, Environmental and Engineering Perspectives, Ian Randle publishers, Jamaica. , Books Edited , International
- Khare, Mukesh, Sankat, C K, Shrivastava, G and Venkobachara, C (2008), Aluminium Smelting: Health, Environmental and Engineering Perspectives, Ian Randle publishers, Jamaica. , Books Edited , International
- Khare, Mukesh and Prateek Sharma (2002), Modelling Urban Vehicle Emissions, WIT press, UK, under the Advances in Transportation Engineering. , Books , International
- Khare, M. and Prateek Sharma (1996), "Sick Building Syndrome in an Educational

Institute Library and Laboratories", 7th International Conference on Indoor Air Quality & Climate, Vol. 4, pp269-74, Nagoya, Japan.

, Conference , International

- Mukesh Khare and Prateek Sharma (2001), "An Empirically Modified Traffic Forecasting Model for Delhi", In Proc. of workshop on transportation, Land Use and the Environment, Organized by Harvard University, Cambridge, USA and Administrative Staff College of India Pune, India, Dec. 3 –4. , Conference , International
- Sharad B Gokhale, Mukesh Khare and Michel Pavageau (2003), "Modelling Distributions of Air Pollutant Concentrations in Urban Environment for Regulatory Purposes: A Hybrid Approach", PHYSMOD2003, Intern. Workshop on Physical Modelling of Flow and Dispersion Phenomena, 3-5, September, Prato, Italy , Conference , International
- Priyanka Kulshrestha and Mukesh Khare (2007), "Indoor Air Pollution Inequalities and Respiratory Health Risks: A Case Study in the Delhi City, India", Environmental Inequalities: ESRC/NERC Tran disciplinary Seminar Series Seminar 4: Pollution, Inequalities and Health, January 16th-17th, Newcastle University, Institutes for Research in Environment and Sustainability and Institute of Health and Society, UK

 , Conference , International
- Mukesh Khare and Chinthala Sumanth (2010), "Dispersion Modelling Strategies of PM10 in Open Cast Coal Mines", ICER2010, University of Mauritius, 16 - 18 September, Mauritius. , Conference , International
- Sharma, Prateek and Mukesh Khare (2001), "Modelling of Vehicular Exhausts – A Review", J. Transportation Research (D), 6 (3), pp179-198. , Journal , International
- S. M. Shiva Nagendra and Mukesh Khare (2002), "Line Source Emission Modelling – A Review", Atmospheric Environment, 36 (13), pp 2083-2098. , Journal , International
- Ahmad, K., Khare, M., Chaudhry, K.K (2005), "Wind Tunnel Simulation Studies on Dispersion at Urban Street Canyons and Intersections – A Review", J. Wind Engineering and Industrial Aerodynamics, 93 (9), pp697-717. , Journal , International
- Kulshrestha Priyanka, Khare Mukesh and Seetharaman Premavathy (2008), "Indoor Air Quality Assessment in and around the Urban Slums of Delhi City, India", J. Indoor Air, Vol.18 (6), pp488-99, Blackwell, UK

 , Journal , International
- Sumit Sharma, Prateek Sharma and Mukesh Khare (2013), "Hybrid modelling approach for effective simulation of reactive pollutants like Ozone", Atm. Env, 80, pp408-14. , Journal , International
- Mukesh Khare and Radha Goyal (2005), "Indoor Air Pollution", National Workshop on Sustainable Pollution Control, IET Lucknow, December 8-9, India.

 , Conference , National
- Mukesh Khare and Ankur Garg (2008), "A Dynamic Puff Model for Low Level Emission Sources", Interactive Applied Research Seminar on Addressing the Concerns of Industry in Areas of Environment, Energy and Material Sciences, Sep. 24-26, IIT Delhi, India. , Conference , National
- Khare, Mukesh (2011), "Role of Air Quality Models in Urban Air Quality Management", UKIERI Workshop, 9-10 February, 2011, IIT Delhi, India. , Conference , National
- Khare Mukesh (2011), "Sustainable Planning Initiatives of Growing Cities – Indian Experience", CfSD and ISTA Round Table Meet on Sustainability GOI Policy Makers Working Group, 9-11, December, Delhi , Conference , National
- Mukesh Khare (2012), Indoor Air Quality Protocol, in Two Day Industrial Air Pollution Control Techniques and Air Quality Management, IIT Madras, 11- 13, October 2012 , Conference , National
- S. Gokhale and M. Khare (2003), "Statistical Methodology and Modelling in Air Pollution", J. Institution of Engineers (India), Vol. 83, pp46-53. , Journal , National

- Shiva Nagendra, S. M. and Mukesh Khare (2006), "Vehicular Exhaust Emission Trends in the Delhi City", J. Institution of Engineers (India), Vol. 86, pp44-50 , Journal , National
- Neha Mukhi and Mukesh Khare (2007), "Indoor Air Pollution: Part I", J. IPHE, Vol. 2006-07(2). , Journal , National
- Neha Mukhi and Mukesh Khare (2007), "Indoor Air Pollution: Part II", J. IPHE, Vol. 2006-07 (3). , Journal , National
- Shandilya K Kaushik, Mukesh Khare and A. B. Gupta (2011), "Particulate Matter Concentration in Delhi, India", IJAPC, Vol. XI (1), pp52-68. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	10	5
Ph.D.	In Progress	5	5
M.S.(Research)	Completed	1	0
M.Tech.	Completed	60	15
B.Tech.	Completed	100	15

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	19	35000000
Consultancy	50	8000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	49	18
Journal	National	15	4
Conference	International	35	15
Conference	National	18	8
Books	International	8	6
Books Edited	International	1	1
Books Chapter	International	11	8

Patent & IPR

Course Name	L-T-P	Course Belongs To
AIR POLLUTION AND CONTROL	3-0-2	PG
AIR QUALITY MODELLING	3-0-0	PG
INDUSTRIAL WASTE MANAGEMENT	3-0-0	UG
MINI PROJECT (CE)	0-0-6	UG
MAJOR PROJECT PART 1 (CE)	0-0-6	UG
MAJOR PROJECT PART 2 (CE)	0-0-14	UG
POLLUTION PREVENTION AND CONTROL	3-0-0	UG
ENVIRONMENTAL STUDIES	3-0-0	UG

Awards & Distinctions

- Dr. M. G. Deshpande Memorial Prize, National Society of Fluid Mechanics & Fluid Power, India, University of Roorkee, Roorkee.
- National Merit Scholarship, Ministry of Education, Govt of India;

- National Scholarship for Study Abroad, Govt of India, Ministry of Education.
- Overseas Research Student (ORS) Award, Committee of Vice Chancellors and Principals, UK
- University Grant Fellowship Award
- Best Outgoing Student Award, Civil Engineering Department, University of Roorkee, India
- DAAD Fellow Award, KIT Germany
- Honorary Patron, Planet Earth Institute, London
- Joint Advisory Council, Indo-French Unit for Water and Waste Technologies, IIT Delhi-MEN, France (2000-2003)
- State Environmental Impact Assessment Authority (SEIA), Department of Environment, Government of National Capital Region, Delhi, India (2011-2014)
- Expert Advisor, Blacksmiths Institute, USA (2000- to-date)
- International Panel, "Ten Most Polluted Sites in the World", Blacksmiths Institute, USA (2000-2001)
- Research Review Committee, Foundation for Research Development, (FRD), Pretoria, South Africa (1999 – to-date)
- Expert Advisor, National Research Foundation, Pretoria, South Africa (1999-to-date)
- International Sustainable Technology Association (ISTA), Arizona State University, USA (2000-to-date)
- Expert Member, Water & Sewerage Authority (WASA), Government of Trinidad & Tobago (2006-2007)
- Expert Advisor, Delhi Master Plan Committee, Delhi Development Authority, Delhi (1997-1999)
- Expert Member, Member, Advisory Board, EKonnnect, Environmental Management Centre, Mumbai (2013-todate)
- Founder Member, Council for Sustainable Development, Delhi
- Expert Founder Member, Global Scientific Committee (GSC), Planet Earth Institute (PEI), London.
- Expert Member, R&D Area Review Expert (RARE) Committee on Traffic and Transport Planning, Central Road Research Institute, New Delhi
- Independent Director, Board of Directors, Hindustan Copper Limited, A Government of India Undertaking, Kolkata (January, 2007 – January 2010)
- Independent Director, Board of Directors, Central Mine Planning Design Institute (CMPDI), Ranchi, Jharkhand (January, 2011 - to date)
- Biographical data inclusion in 16th, 18th and 19th editions of MARQUIS Who's Who in the World.
- Biographical data inclusion in Asia Pacific Who's Who, vol.II and III.
- Founder Member, Editorial Board, International Journal of Environment and Waste Management (IJEWM), Inder Science Publishers, USA
- Founder Member, Editorial Board, International Journal of Environment Engineering (IJEE), Inder Science Publishers, USA
- Guest Editor, Special Issue on Urban Air Pollution Problems, Control Technologies and Management Practices, IJEWM, USA
- Member, Board of Studies, Maharishi Dayanand University, Rohtak (2009 - till date)
- Member, Board of Studies, National Institute of Technology, Kurukshetra, India

Society Membership, Certification & Training & Any Other Details

- Fellow, Wessex Institute of Great Britain, UK
- Fellow, Institution of Engineers, India
- Fellow, Indian Water Works Association (IWWA)
- Member (Life), Indian Association of Environmental Management (IAEM).
- Member (Life), Indian Society for Wind Engineers (ISWE)
- Member (Life), Indian Society for Environmental Management (ISEM).
- Member (Life), Indian Society for Air Pollution Control (NSAPC).

- Member (Life), Newcastle University Student Alumni Association
- Member (Life), Roorkee University Student Alumni Association.
- Member (Life), Administrative Staff College of India (ASCI).

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
SHASHI MATHUR	1988	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	I.I.T. Delhi	1977
M.Tech.	Water Resources	I.I.T. Delhi	1979
Ph.D.	Flow Through Porous Media	University of Delaware, Newark, Delaware, USA	1984

Research Areas and Highlights

Groundwater Contamination Bioremediation of Soils, Flow through Porous Media, Phyto-remediation, Biodegradation in Landfills. The publications during the past 5 years are appended below

Experience

I started my Civil Engineering career after a Masters degree with Engineering Construction Corporation (L&T) and worked there till August 1981 during which I was posted as a Site Engineer at the Bahai House of Worship (Lotus Temple), Delhi. I thereafter moved to USA in August 1981 to pursue a Ph.D degree in the area of Flow Through Porous Media at the University of Delaware, Newark, Delaware. The numerical study involved prediction of Land Subsidence due to withdrawal of water from the vadose zone. After completing my Ph.D in July 1984, I moved to TSU, Texas A & M University system in August 1984 where I was employed as an Assistant Professor in the Hydrology Department. I moved to IIT Delhi in May 1988 and joined the Department of Civil Engineering as an Assistant Professor.

Significant Publications

- Sudheer Ch., Shrivastava, N., Panigrahi, B. and Mathur S., "Stream Flow Forecasting using SVM-PSO", Swarm, Evolutionary and Memetic Computing, (Springer), vol 7076, pp 731-741, 2011 , Books Chapter , International
- Sudheer Ch. And Mathur S., "Modeling of Contaminant Transport below Municipal Solid Waste Landfills", Urban Environment and Geoinformatics, pp: 255-266, 2009 , Books Chapter , International
- Yadav, B.K. and Mathur, S., Mathematical Model of Phytoextraction of Heavy Metal (lead) from Contaminated soils, WASET, World Academy of Science International conference, Lucerne, Oct. 2013 , Conference , International
- Mathur S., "Biodegradation of MSW landfills", 3rd Indo-German Conference on Research for Sustainability on Water and Waste Management, New Delhi, 2010 , Conference , International
- Shishir Gaur, B. R. Chahar, Sudheer Chintalapati, Mathur S., "Morphometric Analysis for Delineating Groundwater Potential Zones in Semi Arid Area" An International Perspective on Environmental and Water Resources, ASCE, Thailand, 2010. , Conference , International
- Sudheer ch., Suryanarayana and Mathur S., "Optimal dewatering system in subsurface zone using bacterial foraging technique". International Conference on Water, Environment, Energy and Society, page no 1394-1398. International Conference on Water, Environment, Energy and Society, 12-16 January New Delhi, 2009 , Conference , International
- Prasad, R. K. and Mathur, S. "Simulation of aerobic and anaerobic biodegradation processes for contaminated aquifers." Proc. of Int. Conf. on Water, Environment, Energy and Society (WEES)-2009, New Delhi, India, 12-16 Jan. 2009 , Conference , International
- Sudheer Ch., Suryanarayana and Mathur S., "Optimal dewatering system in subsurface zone using bacterial foraging technique", WEES, Proc. of Int. Conf. on Water, Environment, Energy and Society (WEES)-2009, New Delhi, India, 12-16 Jan. 2009 , Conference , International

- Sudheer Ch and Mathur S., "Groundwater flow and contaminant transport simulation using adaptive neuro fuzzy inference systems", Int. conf on perspective on Environmental and water resources, ASCE, Thailand, 2009 , Conference , International
- Shishir gaur, B R Chahar, S Chintalapati, Mathur S., "Artificial neural network based optimization modeling for groundwater resources", Int. conf on perspective on Environmental and water resources, ASCE, Thailand, 2009 , Conference , International
- Shishir gaur, B R Chahar, S Chintalapati, Mathur S., "Morphometric Analysis for delineating groundwater potential zones in semi arid area", Int. conf on perspective on Environmental and water resources, ASCE, Thailand, 2009. , Conference , International
- Yadav, B. K., Siebel, M. A. and Mathur, S., "Modeling Phytoremediation of Heavy Metal Contaminated Soils" in 1st International Conference on G16 Research Frontiers in Chalcogen Cycle Science and technology, held on May 28-29 at Wageningen University, The Netherlands, 2008 , Conference , International
- Yadav, B. K., Mathur, S. and Siebel, M. A., "Unsaturated Groundwater Flow Modeling in Presence of Plant Roots" in International Groundwater Conference on Groundwater dynamics and Global Change held at Rajasthan University, Jaipur, India on March 11-14, 2008 , Conference , International
- Sudheer Ch., S .K. Jain and Mathur S., "Numerical modeling of biodegradation process of contaminated aquifers", Proceedings of International Congress of Environmental Research, December 2008 , Conference , International
- Sudheer Ch., Suryanarayana and Mathur S., "Design of cost effective dewatering system in subsurface zone, Proc. of International convention on Water resources developments and management ICWRDM-2008 , Conference , International
- Yadav, B. K., Mathur, S. and Siebel, M. A. "Unsaturated Groundwater Flow Modeling in Presence of Plant Roots", International Groundwater Conference on Groundwater dynamics and Global Change, Jaipur, India, 2008 , Conference , International
- Shishir gaur, B R Chahar, S Chintalapati, Mathur S., "Groundwater flow and optimization modeling: A Case study for Ramgarh Reservoir basin, India", MODFLOW and More: Groundwater and Public policy conference proceedings, 274-278, 2008 , Conference , International
- Sudheer Ch., Mathur S., and Jain. S. K., "Migration of contaminants below Municipal solid waste landfills in variably saturated soils", 12th International conference for computer methods and advances in Geomechanics, 1-4 Oct, Goa, India, 2008 , Conference , International
- Deepak kumar and Mathur S., Proxy simulation of In-situ bioremediation system using Artificial Neural Network. International Journal of Computer Applications, Vol 66 (15), pp 13:17, March 2013 , Journal , International
- Kumar D, Ch. S., Mathur S., and Panigrahi, B. K., Hybrid algorithm performance with varying population size for multi-objective optimization of in-situ bioremediation of groundwater., International Journal of Bio-Inspired Computation, Inderscience, vol 5, no 3, pp:164-174, 2013 , Journal , International
- Ch. Sudheer., Kumar, D., Prasad, R. K., and Mathur, S., Optimal design of an in-situ bioremediation system using Support Vector Machine and Particle Swarm optimization., Journal of Contaminant Hydrology, Elsevier, vol 151, pp:105-116, 2013. , Journal , International
- Chakma, S. and Mathur, S., Post closure long term settlement of MSW Landfills, Journal of Hazardous, Toxic and Radioactive Waste (ASCE), vol 17, No 2, pp: 81-88, April 2013 , Journal , International
- Ch. S and Mathur, S., Groundwater level forecasting using SVM-PSO, International Journal of Hydrology, Science and technology, Inderscience, vol 2, no 2, pp: 201-218, 2012 , Journal , International
- Ch. S., Nitin, A., Panigrahi, B.K. and Mathur S., Streamflow Forecasting by SVM with quantum behaved Particle Swarm Optimization, Journal of Neuro Computing, Elsevier, vol101, pp: 18-23, Feb. 2013 , Journal , International
- Ch. S., Maheswaran, R., Panigrahi, B.K. and Mathur S., A hybrid SVM-PSO model for forecasting monthly streamflow, Journal of Neural Computing and Applications, Springer-Verlag, online 1433-3058, Feb. 2013 , Journal , International
- Sudheer Ch. and Mathur S., Particle Swarm Optimization Trained Neural Network for aquifer parameter estimation, KSCE Journal of Civil Engineering, Springer, vol.16, No3, 298-307, 2012 , Journal , International
- Chakma S, and Mathur S., Estimation of primary and mechanical compression in MSW Landfills, Journal of Hazardous, Toxic and radioactive Waste, ASCE, 0.1061/ASCE, HZ. 2153-5515, 2011 , Journal , International
- Ram Kailash Prasad and Mathur S., "Health –risk-based remedial alternatives for contaminated aquifer management", Practice Periodical of Hazardous Toxic and Radioactive Waste Management, (ASCE) Volume 14, Issue 1, pp. 61-69, 2010 , Journal , International
- Sudheer ch and Mathur Shashi., "Modeling uncertainty analysis in flow and solute transport model using Adaptive Neuro fuzzy inference system"

KSCE Journal of Civil Engineering, (Springer), Volume 14, Issue 6, pp. 941-951, 2010 , Journal , International

- Prasad, R. K. and Mathur, S., "Groundwater remediation using Simulation – optimisation approach: A review", International Journal of Environmental Engineering and Waste Management,(Interscience), 2 (1) 110-pp: 138, 2010 , Journal , International
- Yadav, B. K., Mathur, S. and Siebel, M. A., "Soil moisture dynamics modeling considering the root compensation mechanism for water uptake by plants" Journal of Hydrologic Engineering, (ASCE), Volume 14, Issue 9, pp. 913-922, September 2009 , Journal , International
- Yadav, B. K., Mathur, S. and Siebel, M. A., "Soil Moisture Flow Modeling with Water Uptake by Plants (Wheat) under varying soil and moisture conditions", Journal of Irrigation and Drainage Engineering, (ASCE), May/June 2009. Vol. 135, No. 3, June 1, 2009 , Journal , International
- Mathur, S and Yadav, B. K., "Phytoextraction Modeling of Heavy Metal (Lead) Contaminated Site using Maize (Zea mays)", Practice Periodical of Hazardous, Toxic and Radioactive Waste Management, (ASCE) Volume 13, Issue 4, pp. 229-238, October 2009 , Journal , International
- Yadav, B. K. and Mathur, S. "Modeling Soil Water Extraction by Plants Using Non-Linear Dynamic Root Density Distribution Function", Journal of Irrigation and Drainage Engineering, (ASCE), 134 (4), 430-436, 2008 , Journal , International
- Prasad, R. K. and Mathur, S., Potential well locations in in-situ bioremediation design using neural network embedded Monte Carlo approach, Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, American Society of Civil Engineers, (ASCE), 12(4), 260- 269, 2008 , Journal , International
- Mathur S. and L. Jayawardena, "Thickness of compacted natural clay barriers in MSW landfills", Practice Periodical of Hazardous , Toxic and Radioactive Waste Management, (ASCE), 12 (53), 2008 , Journal , International
- Prasad R. K. And Mathur S., Closure to "Groundwater flow and contamination transport simulation with imprecise Parameters", Journal of Irrigation and Drainage Engineering, (ASCE),134, 268, 2008 , Journal , International
- Sudheer Ch., Shrivastava, N., Panigrahi, B. and Mathur S., "Stream Flow Forecasting using SVM-PSO", Swarm, Evolutionary and Memetic Computing, (Springer), vol 7076, pp 731-741, 2011 , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	10	3

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	4	97

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	58	21

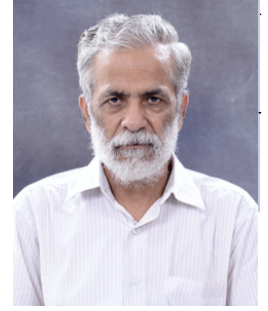
Patent & IPR

Course Name	L-T-P	Course Belongs To
ADVANCED HYDRAULICS	3-0-0	PG
SURFACE WATER QUALITY MODELING AND CONTROL	3-0-0	PG
HYDROLOGY AND HYDRAULICS	3-1-4	UG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
A.K. NAGPAL		Civil Engineering , Emeritus Fellow

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Bombay	1968
M.Tech.	structural Engineering	IIT Delhi	1971
Ph.D.	structural Engineering	IIT Delhi	1976

Research Areas and Highlights

Tall Buildings, Composite Structures, Earthquake Engineering and Bridge Engineering

Experience

Teaching and research since 1975. About 200 consultancy projects in various areas of Structural Engineering

Significant Publications

- Kamatchi, P., Ramana, G. V., Nagpal, A. K. and Iyer, N. R. (2011). "Specific response of framed buildings for long distance earthquake including the effect of depth of soil stratum." Earthquake Research and Analysis, INTECH Publisher, Croatia, ISBN 979-953-307-273-8. , Books Chapter , International
- Singh, Y., and Nagpal, A. K. (1999). "Behaviour and Analysis Techniques of Tubular Buildings." Gordon and Breach International Series in Engineering, Technology and Applied Science, Volumes on Structural Dynamic Systems, Computational Techniques and Optimization, Chapter 11, Techniques in Buildings in Buildings and Bridges, 163-192. , Books Chapter , International
- Kamatchi, P., Rajasankar, J.,Nagesh R. Iyer, Lakshmanan, N., Ramana, G. V. and Nagpal, A. K. (2010). "Effect of depth of soil stratum on performance of buildings for site specific earthquakes." Soil Dynamics and Earthquake Engineering, 30(8), 647-661. , Journal , International
- Chaudhary, S., Pendharkar, U., and Nagpal, A. K. (2007). "Hybrid procedure for cracking and time-dependent effects in composite frames at service load." Journal of Structural Engineering, ASCE, 133(2), 166-175. , Journal , International
- Maru, S., Asfaw, M., Sharma, R. K. and Nagpal, A. K. (2003). "Effect of creep and shrinkage on R.C. Frames with high beam stiffness." Journal of Structural Engineering, ASCE, 129(4), 536-543. , Journal , International
- Singh, Y., and Nagpal, A. K. (1994). "Negative shear lag in framed-tube buildings." Journal of Structural Engineering, ASCE, 120(11), 3105-3121. , Journal , International
- Basu, A. K., Nagpal, A. K., Bajaj, R. S., and Guliani, A. K. (1979). "Dynamic characteristics of coupled shear.", Journal of Structural Division, ASCE, 105(1), 44-47. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	50	7
M.Tech.	Completed	115	15
M.Tech.	In Progress	6	6

Ph.D.	Completed	13	0
Ph.D.	In Progress	5	5

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	2	59
Consultancy	200	300

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	39	10
Journal	National	3	2
Books Chapter	International	2	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
PSC/COMPOSITE STRUCTURES	3-0-0	PG
FEM IN STRUCTURAL ENGINEERING	2-1-0	PG
ADVANCE FEM AND PROGRAMING	2-0-2	PG
DESIGN OF TALL BUILDINGS	2-1-0	PG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
ARVIND KUMAR NEMA	2002	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
Ph.D.	Environmental Engineering	Indian Institute of Technology Bombay	1997

Research Areas and Highlights

Environmental Systems Modelling and Optimization; Impact Assessment and Risk Mitigation; Carbon Sequestration; Integrated Waste Management

Experience

Significant Publications

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
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Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
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Type of Publication	Level of Publication	Total Publication	In last 5 years
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Patent & IPR

Course Name	L-T-P	Course Belongs To
ENVIRONMENTAL IMPACT ASSESSMENT	3-0-0	PG
MAJOR PROJECT PART-I	0-0-12	PG
MAJOR PROJECT PART-II	0-0-24	PG
ENVIRONMENTAL SYSTEMS ANALYSIS	3-0-2	PG
ENVIRONMENTAL STUDIES	3-0-0	UG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
VENKATA RAMANA GUNTURI	1997	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	S V H College of Engineering (Nagarjuna University)	1989
M.Tech.	Geotechnical Engineering	Indian Institute of Technology Madras	1991
M.S.(Research)	Civil Engineering	Rensselaer Polytechnic Institute, Troy, NY	1996
Ph.D.	Geotechnical Earthquake Engineering	Rensselaer Polytechnic Institute, Troy, NY	1996

Research Areas and Highlights

Geotechnical Earthquake Engineering, Dynamic Site Characterization, Machine Foundations, Environmental Geotechnology, Geosynthetics.

Experience

Significant Publications

- Principles of Soil Dynamics, Second Edition, CENGAGE, January 2010 (with Prof. Braja Das) , Books , International
- Usmani, A. Ramana, G. V. and Sharma, K. G. (2011) "Experimental Evaluation of Shear Strength Behaviour of Delhi Silt under Static Loading Conditions" Journal of Materials in Civil Engineering, ASCE,23(5), pp. 533-541
, Journal , International
- Gurung, N, Haneberg, W.C., G. V. Ramana and Datta, M (2011)., "Engineering geology and stability of the Laprak landslide, Gorkha District, Western Nepal", Environmental and Engineering Geoscience, Vol. 17, No. 1, pp. 23 – 38. , Journal , International
- Kamatchi, P., Rajasankar, J., Nagesh R.Iyer, Lakshmanan, N., Ramana, G.V., and Nagpal, A.K. (2010), "A methodology for performance evaluation of buildings for site-specific earthquakes" Soil dynamics and Earthquake Engineering, 30 (8), 647–661 , Journal , International
- Ravi Sankar, J., G. V. Ramana and Datta, M. (2010), "Shear Behavior of Loose and Compacted Pond Ash", Geotechnical and Geological Engineering, Vol. 28, No. 6, pp. 763 – 778. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	8	2
Ph.D.	In Progress	7	5
M.S.(Research)	Completed	1	0
M.Tech.	Completed	55	22
B.Tech.	Completed	31	14

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
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Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	23	12
Journal	National	10	5
Books	International	1	1
Conference	International	35	13
Conference	National	26	7
Books Chapter	National	1	0
Books Edited	International	1	1
Books Edited	National	2	0

Patent & IPR

Course Name	L-T-P	Course Belongs To
ENGINEERING BEHAVIOUR OF SOILS	3-0-0	PG
SHALLOW AND DEEP FOUNDATIONS	3-0-0	PG
ROCK ENGINEERING	3-0-0	UG
GEOENVIRONMENTAL ENGINEERING	3-0-0	PG
SOIL DYNAMICS AND GEOTECHNICAL EARTHQUAKE ENGG.	3-0-0	PG
GROUND IMPROVEMENT	3-0-2	UG
LANDFILLS AND ASH PONDS	3-0-0	PG
ENGG. GEOLOGY & SOIL MECHANICS	3-1-3	UG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG
SOIL ENGINEERING LABORATORY	0-0-6	PG
PRACTICAL TRAINING	0-0-0	UG
FIELD EXPLORATION AND MEASUREMENT	3-0-0	PG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

- Member, Indian Society for Earthquake Technology
- Member, Indian Geotechnical Society
- Member, Indian Society for Technical Education

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
JAGDISH TELANGRAO SHAHU	2002	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
M.Tech.	Geotechnical Engineering	Indian Institute of Technology Kanpur	1988
B.Tech.	Civil Engineering	Nagpur University	1994
Ph.D.	Geotechnical Engineering	Indian Institute of Technology Kanpur	1994

Research Areas and Highlights

Geotechnology for Tracks and Pavements, Ground Improvement, Geosynthetics.

Experience

1993-2002: Lecture, Department of Civil Engineering, Visvesvaraya National Institute of Technology (VNIT), Nagpur.

2002-2008: Assistant Professor, Department of Civil Engineering, IIT Delhi.

2008-2012: Associate Professor, Department of Civil Engineering, IIT Delhi.

2012 onwards: Professor, Department of Civil Engineering, IIT Delhi.

1996-1998: Post Doctoral Research Fellow, Institute of Lowland Technology, Saga University, Japan.

1998-1999: Visiting Associate Professor, Institute of Lowland Technology, Saga University, Japan.

2006-2007: Visiting Professor, Institute of Lowland Technology, Saga University, Japan.

Significant Publications

- Patra, S. and Shahu, J.T. (2012). Pasternak Model for Oblique Pullout of Inextensible Reinforcement. Journal of Geotechnical and Geoenvironmental Engineering. ASCE. 138 (12). December 2012. pp. 1503-1513. , Journal , International
- Shahu, J.T., Patel, S., and Senapati A. (2012). Engineering properties of copper slag-fly ash-dolime mix and its utilization in base course of flexible pavements. Journal of Materials in Civil Engineering. ASCE. doi no. 10.1061/(ASCE)MT.1943-5533.0000756. Published online before print. , Journal , International
- Shahu, J.T., Sharma, K.G. and Kausar Ali (2012), "Model tests on geosynthetic reinforced stone columns: A comparative study" Geosynthetics International. August. pp. 422-432. , Journal , International
- Shahu, J.T. and Reddy, Y.R. (2011). Clayey soil reinforced with stone column group: model tests and analysis. Journal of Geotechnical and Geoenvironmental Engineering, ASCE. 137 (12), December. pp. 1265-74. , Journal , International
- Shahu, J.T. and Hayashi, S. (2009). Analysis of extensible reinforcement subject to oblique pull. Journal of Geotechnical and Geoenvironmental Engineering, ASCE. Vol.135, No.5, pp. 623-634. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	15	8
M.Tech.	Completed	29	13

Ph.D.	Completed	6	6
Ph.D.	In Progress	5	0

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	7	7500000
Consultancy	25	5000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	26	17
Conference	International	22	5
Conference	National	25	9

Patent & IPR

Course Name	L-T-P	Course Belongs To
MAJOR PROJECT PART-I	0-0-12	PG
GEOENVIRONMENTAL ENGINEERING	3-0-0	PG
GEOSYNTHETICS	3-0-0	PG
GEOENVIRONMENTAL AND GEOTECHNICAL ENGG.LAB.	0-0-6	PG
GEOTECHNICAL ENGINEERING	3-1-3	UG

Awards & Distinctions

- Received the best paper award in Third Indian Young Geotechnical Engineers Conference (3IYGEC 2011), New Delhi.
- Received the prestigious IGS Delhi Chapter Leadership award 2011.
- Received best paper award in an International Conference from Australian Research Council at Wollongong, Australia. 2012.

Society Membership, Certification & Training & Any Other Details

- Executive Board Member, International Association of Computer Methods and Advances in Geomechanics (IACMAG)
- Editorial Board Member, Lowland Technology International (LTI), Journal of International Association of Lowland Technology
- Life member, Indian Geotechnical Society (IGS)
- Life member, International Society for Lowland Technology (ISLT)
- Member, Soil and Foundation Engineering Sectional Committee, CED 43 of Bureau of Indian Standards (BIS)
- Member, International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)
- Member, Embankment, Ground improvement and Drainage (H-4) Committee, Indian Roads Congress (IRC)
- Member, Soil Quality and Fertilizers Sectional Committee (FAD 7), Bureau of Indian Standards
- Member, Technical Committee on Laboratory testing, TC 101, ISSMGE
- Life Member, Indian Society for Technical Education (ISTE)
- Life Member, Indian Association of Structural Engineers (IAStructE)

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
K.G. SHARMA	1980	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Birla Institute of Technology & Science, Pilani	1971
ME	Structural Engineering	Birla Institute of Technology & Science, Pilani	1973
Ph.D.	Geotechnical Engineering	University of Wales, Swansea (UK)	1980

Research Areas and Highlights

Constitutive Modelling of Geologic Materials, Rock Mechanics and Rock Engineering, Geotechnical Engineering, Dams, Foundations, Underground Structures, Slope Stability, Computational Methods.

Experience

Teaching experience of last 33 years at IIT Delhi. Visiting Professor at University of Arizona for 19 months. Taught courses at UG and PG levels earlier and now at PG level.

Consultancy experience in the areas of analysis and design of foundations, dams, underground tunnels and powerhouse, slopes, Kolkata Metro, Seepage.

Research experience in the areas of constitutive modelling, numerical modelling of geotechnical and rock structures.

Significant Publications

- Pande, G.N. and Sharma, K.G.(1983). "Multilaminate model of clays a numerical evaluation of the influence of rotation of the principal stress axes", International Journal of Numerical and Analytical Methods in Geomechanics, Vol. 7, pp. 397-418. , Journal , International
- Sharma, K.G. and Pande, G.N. (1988). "Stability of rock masses reinforced by passive, fully grouted rock bolts", Int. J. Rock Mech. Min. Sci. & Geomech. Abstr., Vol. 25, pp. 273-285. , Journal , International
- Varadarajan, A., Sharma, K.G., Desai, C.S. and Hashemi, M. (2001). "Constitutive modelling of a schistose rock in the Himalaya", International Journal of Geomechanics, Vol. 1, No. 1, pp. 83-107. , Journal , International
- Varadarajan, A., Sharma, K.G., Abbas, S.M. and Dhawan, A.K. (2006). "Constitutive model for rockfill materials and determination of material constants", International Journal of Geomechanics, ASCE, Vol. 6, No. 4, pp. 226-237. , Journal , International
- Usmani, A. Ramana, G. V. and Sharma, K. G. (2012) "Stress-Strain-Volume Change Modeling of Delhi Silt in Triaxial Compression and Extension", International Journal of Geomechanics, ASCE, Vol. 12, No. 3, pp. 323-326. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
M.Tech.	Completed	87	13
Ph.D.	Completed	25	3
Ph.D.	In Progress	5	5

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	10	20000000
Consultancy	200	50000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	34	7
Journal	National	19	2
Conference	International	96	19
Conference	National	59	20
Books Edited	National	6	6
Books Chapter	National	2	2

Patent & IPR

Course Name	L-T-P	Course Belongs To
ANALYSIS AND DESIGN OF UNDER GROUND STRUCTURES	3-0-0	PG
FINITE ELEMENT METHOD IN GEOTECHNICAL ENGG.	3-0-0	PG
COLLOQUIUM (CE)	2-0-2	UG
PRACTICAL TRAINING	0-0-0	UG
ENGINEERING PROPERTIES OF ROCKS & ROCK	3-0-0	PG
STRUCTURAL GEOLOGY	2-0-2	PG
ROCK MECHANICS LAB-I	0-0-6	PG
ROCK MECHANICS LAB-II	0-0-6	PG
SLOPES AND FOUNDATIONS	3-0-0	PG

Awards & Distinctions

- Central Board of Irrigation and Power Award of "Distinction in Engineering Technology" for the year 1983-84 for the paper entitled, "Foundation Analysis of Karjan Dam by Finite element Method".
- IGS HEICO Award for the best paper on Rock Mechanics published in Indian Geotechnical Journal: "Elasto plastic finite element analysis of horse shoe tunnels", 1987.
- IGS Smt.Indra Joshi Award for the best paper published in Conferences/Symposia: "A new model for flow through joint", 1987.
- International Association for Computer Methods and Advances in Geomechanics (IACMAG) Award in the Category CONSTITUTIVE LAWS & APPLICATIONS for Significant Paper, May, 1994.
- IACMAG Award in the Category CONSTITUTIVE LAWS for Significant Paper, November, 1997.
- IACMAG IJOG Excellent Paper Award, October, 2008.
- IGS Lecture Award: Delivered 30th IGS Annual Lecture on Numerical Analysis of Underground Structures in IGC-2008 at Bangalore.
- Life Time Achievement Award - IGS Delhi Chapter, 27th September, 2012.

Society Membership, Certification & Training & Any Other Details

- International Society for Rock Mechanics
- International Society for Soil Mechanics and Geotechnical Engineering
- International Association for Computer Methods and Advances in Geomechanics
- International Tunnelling Association

- Indian Geotechnical Society
- Indian Society for Rock Mechanics & Tunnelling Technology
- Indian Society of Earthquake Technology
- Indian Society for Technical Education
- Chairman, Program Advisory Committee of National Geotechnical Facility, Department of Science and Technology, New Delhi, 2008-2012.
- President, The Committee of the International Society for Rock Mechanics (India), 2005-2011.
- Member of Editorial Board: Computers and Geotechnics, International Journal Published by Elsevier Applied Science.

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
GEETAM TEWARI	1990	Civil Engineering , Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Architecture	University of Roorkee, India	1980
M.Tech.	Transport planning and POlICY	University of Illinois at Chicago, USA	1984
Ph.D.	Transport Planning and Policy	University of Illinois at Chicago, USA	1987

Research Areas and Highlights

Transportation Planning, Public Transport Systems, Non-Motorised Vehicle Planning, Traffic Safety.

Transportation Planning and Modelling, Public Transport Systems Planning, Non-Motorised Transport Planning, Traffic Safety.

Experience

I have about 25 years of professional experience in the areas of Transport Planning, and Traffic Engineering in India ,USA and Bangladesh and African Countries. I have been teaching transpot planning and modelling, traffic engineering, geometric design of highways and Transport Economics at graduate and undergraduate level at the Indian Institute of Technology in Delhi since 1990. I have been involved in interdisciplinary research including traffic safety, public transport systems since 1997 as member of Transportation Research and Injury Prevention Programme at IIT Delhi. I have taught short term courses in Australia, The Netherlands,Iran and South Africa,Thailand and Uganda. I have extensive research experience in dealing with transportation issues of special relevance to low income countries. These include development of systems and designs that would make transportation efficient, safer and less polluting with a special focus on vulnerable road users and commuters.

Significant Publications

- Tiwari, G. J. Fazio, S. Gaurav, N. Chatterjee,(2008) Continuity Equation validation for nonhomogeneous traffic, Journal of Transportation Engineering, vol 134/no.3, ASCE, March , Journal , International
- G.Tiwari, Planning for Non-Motorized Traffic- A prerequisite for Sustainable Transport System, IATSS Research, Vol.23 No.2, 1999. , Journal , International
- D.Mohan and G.Tiwari, Mobility,Environment and Safety in Megacities-Dealing with a complex future, IATSS Research Vol.24, No.1, 2000. , Journal , International
- G.Tiwari, Urban Transport Priorities: Meeting the Challenge of Socio-Economic Diversity in Cities Cities, June 2002. , Journal , International
- Anand A. and G.Tiwari, 2005. A gendered perspective of the shelter-transport-livelihood link: The case of poor women in Delhi, Transport Reviews, Transport Reviews vol26, No.1, pp63-80 , Journal , International
- Tiwari, G. Bangdiwala, Arvind Saraswat, Sushant Gaurav, Pedestrian Risk Exposure at Signalized Intersections Using Survival Analysis, Transportation Research Part F, 2006 , Journal , International
- Patanker M Vaishali, Rakesh Kumar and Geetam Tiwari, Impacts of Bus Rapid Transit Lanes on Traffic and Commuter Mobility, Journal of Urban Planning and Development, ASCE, vol 133, Issue 2, June 1, 2007 , Journal , International
- Woodcock J, Edwards P, Tonne C. G. Tiwari, et al. (2009) Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport. The Lancet, 2009DOI:10.1016/S0140-6736(09)61714-1 , Journal , International

- Gupta, U., G.Tiwari, N.Chatterjee, J.Fazio,(2010) Case Study of Pedestrian Risk Behavior and Survival Analysis, Journal of the Eastern Asia Society for Transportation Studies, Vol.8, 2010 , Journal , International
- Thynell, M., G.Tiwari, D.Mohan, (2010) Sustainable Transport and the Modernisation of Urban Transport in Delhi and Stockholm , Cities , Journal , International
- Sen, A., G.Tiwari, V.Upadhaya, (2010), Estimating marginal external cost of transport in Delhi, Journal of Transport Policy, vol. 17, 27-37 , Journal , International
- GADEPALLI , S. B. Ravi, Geetam TIWARI(2011) Evaluating the Impact of Free Left Turns on Traffic Behavior at Signalized Intersections in Heterogeneous Traffic Conditions , Journal of the Eastern Asia Society for Transportation Studies , Vol. 9 (2011) , 1700-1714 , Journal , International
- Tiwari,G, Mariya KHATOON, Niharika SINGH, Prateek CHOUDHARY, Joseph FAZIO(2011), Modification of a Highway Capacity Manual Model for Evaluation of Capacity and Level of Service at a Signalized Intersection in India , Journal of the Eastern Asia Society for Transportation Studies , Vol. 9 (2011) , 1558-1571 , Journal , International
- Tiwari, G. & Jain, D. (2012) Accessibility and safety indicators for all road users: case study Delhi BRT. Journal of Transport Geography, 22, 87-95. , Journal , International
- Khatoon, M, G. Tiwari, N. Chatterjee(2013) Impactof grade separator on pedestrian risk taking behavior, Accident Analysis and prevention, vol 50, pp 861-870 , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	4	2

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	3	20000000
Consultancy	15	7000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
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Patent & IPR

Course Name	L-T-P	Course Belongs To
URBAN & REGIONAL TRANSPORTATION PLANNING	2-0-0	PG
PUBLIC TRANSPORTATION SYSTEMS	3-0-0	PG
MAJOR PROJECT PART-I	0-0-12	PG
MAJOR PROJECT PART-I	0-0-12	PG
TRANSPORTATION & TRAFFIC INFRASTRUCTURE DESIGN	3-0-0	PG
MAJOR PROJECT PART-II	0-0-24	PG
MAJOR PROJECT PART-II	0-0-24	PG
ADVANCED TRANSPORTATION MODELLING	2-0-2	PG
TRANSPOTATION ECONOMICS & FINANCE	3-0-0	PG

Awards & Distinctions

- I received International Velocity Falco Lecture 2nd Prize, Barcelona, Spain,
- IRTE & Prince Michael International Road Safety Award 2002 for “extraordinary contribution toward road safety in

India.”.

- the Stockholm Partnerships Award for local impact, innovative thinking and a potential for replication or transferability for establishing Transportation Research and Injury Prevention Programme at th
- Lucknow Management Association woman’s achiever award for 2010.
- Adlerbretska Guest Professor for sustainable development at the Chalmers Institute of Technology, Gothenborg 2007-2010.
- Honorary Doctor of technology from Chalmers University of technology May 2012.

Society Membership, Certification & Training & Any Other Details

- Editor in Chief, International Journal of Injury Control and Safety promotion, Taylor and Francis publication, U.K. 2009-present
- Member , H1 committee(Traffic and Transport Planning), Indian Roads Congress
Member Secretary , H-7 committee(Safety) Indian Roads Congress
- Executive Board member Transport Research Group, India
- Member International Scientific Committee EASTS(Easts Asia Society for Transport Studies, Japan)
- Member, Institute of Urban Transport, India
- Senate NIT Hamirpur: Invited member
Senate IP University: Invited member
- Member Editorial Board Journal of Safety Research
- Member, Board of Directors,Urban Mass Transport Company (IL&FS and MUD, Government of India) since 2006
Promoter and Chairperson Board of Directors, Innovative Transport Solutions Ltd, an IITD TBUI,
- Member Board of Directors LEAD India(An international nongovernmental organization of sustainable environment leadership

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
R. AYOTHIRAMAN	2008	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	PSNA College of Engg. & Technology, Madurai Kamaraj University	1998
ME	Soil Mechanics and Foundation Engineering	College of Engineering Guindy, Anna University	2000
Ph.D.	Geotechnical Engineering (Pile Dynamics)	Indian Institute of Technology Madras	2005

Research Areas and Highlights

Soil Dynamics and Earthquake Geotechnical Engineering

Pile Foundations

Deep Excavation and Tunneling in Soils

Ground Improvement

Experimental Geotechnics

Experience

Associate Professor, Department of Civil Engineering, Indian Institute of Technology Delhi (December 2012 to till date)

Assistant Professor, Department of Civil Engineering, IIT Delhi (December 2008 to December 2012)

Research Fellow, Institute of Soil Mechanics and Rock Mechanics, University of Karlsruhe, Germany (May to July 2006)

Assistant Professor, Department of Civil Engineering, IIT Guwahati (May 2005 to December 2008)

Senior Lecturer, Department of Civil Engineering, IIT Guwahati (January to May 2005)

Project Officer, Department of Civil Engineering, IIT Madras (July to December 2004)

Visiting Faculty, Department of Civil Engineering, College of Engineering Guindy, Anna University (January to May 2004)

Significant Publications

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	In Progress	9	9
M.Tech.	Completed	24	20
B.Tech.	Completed	15	15
M.Tech.	In Progress	5	5
B.Tech.	In Progress	4	4

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
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Type of Publication	Level of Publication	Total Publication	In last 5 years
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Patent & IPR

Course Name	L-T-P	Course Belongs To
MINOR PROJECT	0-0-6	PG
SOIL DYNAMICS AND GEOTECHNICAL EARTHQUAKE ENGG.	3-0-0	PG
EARTH PRESSURES AND RETAINING STRUCTURES	3-0-0	PG
FIELD EXPLORATION AND MEASUREMENT	3-0-0	PG
INDEPENDENT STUDY	0-3-0	PG
DESIGNS OF FOUNDATION; EARTH AND EARTH RETAINING S	3-1-0	UG
ENGG. GEOLOGY & SOIL MECHANICS	0-0-2	UG
GEOTECHNICAL ENGINEERING	0-1-2	UG
GROUND IMPROVEMENT	3-0-2	UG
INTRODUCTION TO CIVIL ENGINEERING	0-0-2	UG
DESIGN CONCEPTS IN CIVIL ENGG.	1-0-2	UG
GEOENVIRONMENTAL AND GEOTECHNICAL ENGG.LAB.	0-0-6	PG

Awards & Distinctions

- IEI Young Engineers Award by Institution of Engineers India (2010)
- Outstanding Young Faculty Fellow sponsored by Kusuma Trust/awarded by IIT Delhi (2009-2014)
- Young Scientist Award under SERC-Fast Track Scheme by DST, India (2006)
- GOLD MEDAL and Dr. Kancheepuram Natarajan Gunalan Award - Best Outgoing Student of M.E (Soil Mechanics and Foundation Engineering), Department of Civil Engineering, Anna University (2000)
- DAAD Fellow, Institute of Soil and Rock Mechanics, University of Karlsruhe (TH), Germany (2006)
- Selected Candidate for Early Faculty Induction Programme (EFIP) by AICTE (2003)
- Third rank, B.E.- Civil Engineering (1998)

Society Membership, Certification & Training & Any Other Details

- Life Member, Indian Geotechnical Society (IGS)
- Life Member, Indian Society of Earthquake Technology (ISET)
- Life Member, Indian Society for Technical Education (ISTE)
- Member, International Society for Rock Mechanics (ISRM)
- Member, International Tunneling Association (ITA)
- Associate Member, American Society of Civil Engineers (ASCE)
- Member, International Society of Environmental Geotechnology (ISEG)
- Member, Deep Foundation Institute, (DFI)

**Brief CV
of
Dr. Gurmail S. Benipal**



In my doctoral thesis, I constructed a theory of statics of a class of nonlinear elastic mechanical systems called First Order Homogeneous Mechanical (FOHM) Systems, e.g., cracked concrete structures and elastoflexible cables. Under my solo/joint supervision, nonlinear dynamic response of cracked elastic concrete beams has been studied. Static and dynamic stability (buckling, snap-through, divergence, parametric resonance, flutter) of cracked elastic concrete beam-columns has also been investigated. Bimodular elastic damage constitutive model for concrete as a FOHM system has been constructed which has been used as the basis for proposing its coupled damage-elastoplasticity constitutive model. Using my dissolution precipitation mechanism, a theory of linear visco-elasticity of reacting concrete under constant temperature is constructed. Based upon my earlier work, a doctoral thesis is in progress under my co-supervision which deals with nonlinear dynamics of elastoflexible cables.

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
SURESH BHALLA	2004	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Delhi	1995
ME	Structures and Mechanics	NTU (Singapore)	2001
Ph.D.	Structures and Mechanics	NTU (Singapore)	2004

Research Areas and Highlights

Structural Mechanics, Structural Health Monitoring, Smart Materials & Structures, Tensegrity Structures, Underground Structures, Bio-mechanics, Green Structures.

Structural health monitoring; smart material and structures; non-destructive evaluation; system identification; computational mechanics; adaptation and transfer of aerospace technologies to mechanical and civil engineering systems; bio-mechanics; energy harvesting; tensegrity structures; engineered bamboo structures.

Experience

December 2010-Present: Associate Professor, Department of Civil Engineering, Indian Institute of Technology Delhi, India.

(2) December 2004-December 2010: Assistant Professor, Department of Civil Engineering, Indian Institute of Technology Delhi, India.

March 2004-December 2004: Project officer, School of Civil & Environmental Engineering, Nanyang Technological University, Singapore.

Project Title: Comprehensive Structural Monitoring of Underground Structures During Construction and Operation, sponsored by Defence Science Technology Agency (DSTA), Singapore, under Underground Technology and Rock Engineering (UTRE) programme.

July 1996-December 2000: Structural Design Engineer, Structural Engineering Department, Engineers India Ltd.

July 1995 – July 1996: Management Trainee, Structural Engineering Department, Engineers India Ltd., Bhikaji Cama Place, New Delhi –110 066. (India)

Significant Publications

- Soh, C. K., Yang, Y. W. and Bhalla, S. (2012) "Smart Materials in Structural Health Monitoring, Control and Bio-mechanics", Springer, ISBN: 978-3-642-24462-9 (Print) 978-3-642-24463-6 (Online), Books, International
- Bhalla, S. and Suresh, R. (2013), "Condition Monitoring of Bones using Piezo-Transducers", *Meccanica*, Vol. 48, No. 9(Nov), pp. 2233-2244. DOI: 10.1007/s11012-013-9740-9
Click here to open --> <http://dx.doi.org/10.1007/s11012-013-9740-9>
, Journal, International
- Bhalla, S. and Moharana, S. (2013), "A Refined Shear Lag Model for Adhesively Bonded Piezo-Impedance Transducers" *Journal of Intelligent Material Systems and Structures*, Vol. 24, No. 1 (Jan), pp. 33-48. DOI: 10.1177/1045389X12457837

Click here to open --> <http://dx.doi.org/10.1177/1045389X12457837>

, Journal , International

- Bhalla, S., Panigrahi, R. and Gupta, A. (2013), "Damage Assessment of Tensegrity Structures using Piezo-Transducers", *Meccanica*, Vol. 48, No 6, pp. 1465-1478.

DOI : 10.1007/s11012-012-9678-3

Click here to open --> <http://dx.doi.org/10.1007/s11012-012-9678-3>

, Journal , International

- Visalakshi, T., Bhalla, S., and Gupta, A. (2014) "Corrosion Assessment of RC Structures Based on Equivalent Structural Parameters Using EMI Technique", *Journal of Intelligent Material Systems and Structures*, Vol. 25, No. 4 (Mar), pp. 484-500.

DOI: 10.1177/1045389X13498317

Click here to open --> <http://dx.doi.org/10.1177/1045389X13498317>

, Journal , International

- Bhalla, S., Vittal, A. P. R and Veljkovic, M. (2012), "Piezo-Impedance Transducers for Residual Fatigue Life Assessment of Bolted Steel Joints", *Structural Health Monitoring, An International Journal*, Vol. 11, No 6 (Nov), pp. 733-750. DOI: 10.1177/1475921712458708

Click here to open --> <http://dx.doi.org/10.1177/1475921712458708>

, Journal , International

- Kaur, N. and Bhalla, S. (2014), "Feasibility of Energy Harvesting from Thin Piezo Patches via Axial Strain (d31) Actuation Mode", *Journal of Civil Structural Health Monitoring*, Vol. 4, No. 1 (Feb), pp. 1-15, DOI: 10.1007/s13349-013-0048-1

Click here to open --> <http://dx.doi.org/10.1007/s13349-013-0048-1>

, Journal , International

- Moharana, S. and Bhalla, S. (2014), "A Continuum Based Modelling Approach for Adhesively Bonded Piezo-Transducers for EMI Technique" *International Journal of Solids and Structures*, Vol. 51, No. 6 (Mar), pp. 1299-1310. DOI: 10.1016/j.ijsolstr.2013.12.022

Click here to open --> <http://dx.doi.org/10.1016/j.ijsolstr.2013.12.022>

, Journal , International

- Shanker, R., Bhalla, S. and Gupta, A. (2011), "Dual Use of PZT Patches as Sensors in Global Dynamic and Local EMI Techniques for Structural Health Monitoring", *Journal of Intelligent Material Systems and Structures*, Vol. 22, No. 16 (Nov), pp. 1841-1856

DOI :10.1177/1045389X11414219

Click here to open --> <http://dx.doi.org/10.1177/1045389X11414219>

, Journal , International

- Bhalla, S., Tuli, S., and Arora, R. (2011), "Defect Detection in Concrete Structures Using Thermal Imaging Technique", *Experimental Techniques*, Vol. 35, No.4 (July/August), pp.39-43. DOI: 10.1111/j.1747-1567.2010.00658.x

Click here to open --> <http://dx.doi.org/10.1111/j.1747-1567.2010.00658.x>

, Journal , International

- Bhalla, S. and Deb, S. K. (2011), "A Cost-Effective Approach for Traffic Monitoring Using Piezo-Transducers", *Experimental Techniques*, Vol. 35, No. 5 (Sep/Oct), pp. 30-34.

DOI: 10.1111/j.1747-1567.2010.00645.x

Click here to open --> <http://dx.doi.org/10.1111/j.1747-1567.2010.00645.x>

, Journal , International

- Shanker, R., Bhalla, S. and Gupta, A. (2010), "Integration of Electro-mechanical Impedance and Global Dynamic Technique for Improved Structural health Monitoring", *Journal of Intelligent Material Systems and Structures*, Vol. 21, No. 2 (Feb), pp.285-295.

DOI: 10.1177/1045389X09356609

Click here to open --> <http://dx.doi.org/10.1177/1045389X09356609>

, Journal , International

- Bhalla, S., Kumar, P., Gupta, A. and Datta, T. K. (2009), "A Simplified Impedance Model for Adhesively-Bonded Piezo-Impedance Transducers", Journal of Aerospace Engineering, ASCE, Vol. 22, No. 4 (October), pp. 373-382.
DOI: 10.1061/(ASCE)0893-1321(2009)22:4(373)
Click here to open --> [http://dx.doi.org/10.1061/\(ASCE\)0893-1321\(2009\)22:4\(373\)](http://dx.doi.org/10.1061/(ASCE)0893-1321(2009)22:4(373))
, Journal , International
- Panigrahi, R., Bhalla, S. and Gupta, A. (2009), "A Low-Cost Variant of Electromechanical Impedance (EMI) Technique for Structural health Monitoring", Experimental Techniques, Vol. 34, No. 2 (March-April), pp. 25-29. DOI: 10.1111/j.1747-1567.2009.00524.x
Click here to open --> <http://dx.doi.org/10.1111/j.1747-1567.2009.00524.x>
, Journal , International
- Panigrahi, R., Gupta, A. and Bhalla, S. (2009), "Dismountable Steel Tensegrity Grids as Alternate Roof Structures", Steel and Composite Structures, Vol 9, No 3 (June), pp. 239-253.
, Journal , International
- Bhalla, S., Gupta, A., Bansal, S. and Garg, T. (2009), "Ultra Low Cost Adaptations of Electro-Mechanical Impedance Technique for Structural Health Monitoring", Journal of Intelligent Material Systems and Structures, Vol. 20, No. 8 (May), pp. 991-999. DOI:10.1177/1045389X08100384
Click here to open --> <http://dx.doi.org/10.1177/1045389X08100384>
, Journal , International
- Suresh, R., Tjin, S. C. and Bhalla, S. (2009), "Multi-Components Force Sensor Using Embedded Fiber-Bragg Grating", Optics and Laser Technology, Vol. 41, No. 4 (June), pp. 431-440. DOI:10.1016/j.optlastec.2008.08.004
Click here to open --> <http://dx.doi.org/10.1016/j.optlastec.2008.08.004>
, Journal , International
- Bhalla, S., Gupta, A., Shanker, R., Sethi, A., Jain, S. and Medury, (2009), "Performance and Condition Monitoring of Structures Using Discrete Strain Measurements", International Journal of COMADEM, Vol. 12, No. 1 (Jan), pp. 2-14. , Journal , International
- Bhalla, S., Gupta, S., Puttaguna, S. and Suresh, R. (2008), "Bamboo as Green Alternative to Concrete and Steel for Modern Structures", Journal of Environmental Research and Development, Vol. 3, No. 2, (Oct-Dec), pp. 362-370. , Journal , International
- Bhalla, S. and Bajaj, S. (2008), "Bone Characterization Using Piezo-Transducers as Bio-Medical Sensors", Strain, Vol. 44, No. 6 (Dec), pp. 475-478.
DOI:10.1111/j.1475-1305.2007.00397.x
Click here to open --> <http://dx.doi.org/10.1111/j.1475-1305.2007.00397.x>
, Journal , International
- Panigrahi, R., Gupta, A. and Bhalla, S. (2008), "Design of Tensegrity Structures Using Artificial Neural Networks", Structural Engineering and Mechanics, Vol. 29, No. 2 (May), pp.223-235. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	4	3
Ph.D.	In Progress	5	5
M.Tech.	Completed	25	15
B.Tech.	Completed	42	20

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	9	105000000

Consultancy	20	8500000
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Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	36	20
Conference	International	44	21
Conference	National	9	5
Books	International	1	1
Books Chapter	International	3	3

Patent & IPR

- Concrete Vibration Sensor (CVS)
- Hybrid Passive damper for multipurpose vibration control of structures

Course Name	L-T-P	Course Belongs To
DESIGN OF INDUSTRIAL STRUCTURES	2-1-0	PG
STRUCTURAL ANALYSIS II	3-1-2	UG
STRUCTURAL HEALTH MONITORING	2-0-2	PG
STRUCTURAL ANALYSIS II	3-1-2	UG
CONCRETE MATERIAL & DESIGN	3-1-4	UG
ADVANCED STRUCTURAL ANALYSIS	3-0-0	PG

Awards & Distinctions

- Best Paper Award, 2012, during CORCON 2012, 26-29 September, 2012 for paper "Early Detection of Corrosion in RC Structures Using EMI Technique", by T. Visalakshi and S. Bhalla.

Teaching Excellence

- Teaching Excellence Award, 2011, First Semester 2010-11, for Structural Analysis II (CEL 331), Indian Institute of Technology Delhi.
- Outstanding Young Faculty Award, 2008, awarded by Kusuma Trust, Gibraltar
- Young Researcher Fellowship Award, 2003, Second MIT Conference on Computational Fluid and Solid Mechanics, Massachusetts Institute of Technology (MIT), USA.
- Gold Medal, September 2001, National Science and Technology Board (NSTB), Singapore, for best M.Eng. Thesis in Civil Engineering.
- Silver Medal, August 1995, for securing highest Cumulative Grade Point Average (CGPA) among the 1995 graduating batch in Civil Engineering at the Indian Institute of Technology, Delhi, India.

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
KUMAR NEERAJ JHA	2006	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	NIT Calicut (Formerly REC Calicut)	1993
M.Tech.	Building Science and Construction Management	IIT Delhi	2000
Ph.D.	Construction Project Management	IIT Delhi	2004

Research Areas and Highlights

Construction Project Management, Project Success Factors, Schedule-Cost Estimation, Computer Applications in Project Management, Asset Management.

Experience

Dr Kumar Neeraj Jha started his career with Larsen and Toubro Ltd and was instrumental in successful completion of a number of construction projects of national importance. Subsequently he joined IIT Kanpur for a brief period and thereafter he has been with the Department of Civil Engineering at IIT Delhi.

Significant Publications

- Gayatri Vyas, K.N.Jha, and Dilip Patel, Comparative study of rating systems for green building in developing and developed countries. Third International Conference on Construction in Developing Countries (ICCIDC-III, Advancing Civil, Architectural, and Construction Engineering and Management , July 4-6, 2012, Bangkok, Thailand. , Conference , International
- Dilip Patel, K.N.Jha, and Gayatri Vyas, The role of employer in construction safety in context of Indian legislation. Third International Conference on Construction in Developing Countries (ICCIDC-III), July 4-6, 2012, Bangkok, Thailand. , Conference , International
- Dilip Patel and K.N.Jha, A comparative study of OSHA 1970 vs BOCW 1996, CIB W099, International Conference on Modeling and Building Health and Safety, Sep 10-11, 2012, Singapore. , Conference , International
- Dilip Patel and K.N.Jha, A comparative study of OSHA 1970 vs BOCW 1996, CIB W099, International Conference on Modeling and Building Health and Safety, Sep 10-11, 2012, Singapore. , Conference , International
- Dilip Patel and K.N.Jha, Evaluation of construction projects in terms of cost, schedule, and safety performances,CIB W099, International Conference on Modeling and Building Health and Safety, Sep 10-11, 2012, Singapore. , Conference , International
- K.N.Jha, M.Kumar, and P.Juneja, A study of working pattern of construction managers in construction projects, ICIDA 2013, Proceedings of the second international conference in construction engineering and project management, 17-19 March 2013, Johannesburg, South Africa. , Conference , International
- S.Z.S.Tabish and K.N.Jha, Success traits for a construction project, ASCE Journal of Construction Engineering and Management, Vol 138, Issue 10,Year 2012, pp 1131-1138. , Journal , International
- S.Z.S.Tabish and K.N.Jha, Success traits for a construction project, ASCE Journal of Construction Engineering and Management, Vol 138, Issue 10,Year 2012, pp 1131-1138. , Journal , International
- Hasan A. and Jha K.N. (2013).Safety Incentive and Penalty Provisions in Indian Construction Projects and their Impact on Safety Performance,

- Sanjay Wakchaure and K.N.Jha, Methodology for visual inspection for concrete bridges, Indian Road Congress Seminar, Coimbtore, India. , Conference , National
- K.N.Jha, M.Kumar, and P.Juneja, A study of working pattern of construction managers in construction projects, ICIDA 2013, Proceedings of the second international conference in construction engineering and project management, 17-19 March 2013, Johannesburg, South Africa. , Conference , National
- S. Wakchaure, V.Jayan, and K.N.Jha, Factors affecting priority of maintenance for bridges, Indian Concrete Journal, Vol. _____, Issue _____, Year 2013, pp_____ . , Journal , National
- S. Wakchaure, V.Jayan, and K.N.Jha, Factors affecting priority of maintenance for bridges, Indian Concrete Journal, Vol. 87, Issue 2, Year 2013, pp 37-45. , Journal , National
- S. Wakchaure, V.Jayan, and K.N.Jha, Factors affecting priority of maintenance for bridges, Indian Concrete Journal, Vol. 87, Issue 2, Year 2013, pp 37-45. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	Completed	2	2
M.Tech.	Completed	55	46
B.Tech.	Completed	10	10

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	5	12500000
Consultancy	20	20000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Books	National	2	2
Books	International	1	1
Journal	National	8	6
Journal	International	19	16
Conference	International	21	12

Patent & IPR

Course Name	L-T-P	Course Belongs To
CONSTRUCTION MANAGEMENT	3-1-0	UG
CONSTRUCTION CONTRACT AND ECONOMICS	2-1-0	UG
PROJECT PLANNING & CONTROL	2-1-0	PG
CONSTRUCTION AND CONTRACT MANAGEMENT	3-0-0	PG
COMPUTATION LAB FOR CONSTRUCTION MANAGMENT	0-0-6	PG
QUANTITATIVE METHODS IN CONSTRUCTION MANAGEMENT	2-1-0	PG
CONSTRUCTION ENGINEERING PRACTICES	3-0-0	PG
CONSTRUCTION ECONOMICS AND FINANCE	3-0-0	PG

Awards & Distinctions

- Vishwakarma Achievement Award for Academician- Awarded by Construction Industry Development Council for the

service to construction industry and construction students,

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
RAMACHANDRA RAO KALAGA	2003	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	Andhra University	1989
M.Tech.	Transportation Engineering	National Institute of Technology Warangal	1991
Ph.D.	Transportation Engineering	IIT Kharagpur	1998

Research Areas and Highlights

Traffic Flow Modelling, Mass Transit Planning, and Travel Demand Modelling, Road safety, Low carbon Mobility Planning.

Experience

I am trained as a Transportation Engineering specialist. After completing PhD in Transportation Engineering at IIT Kharagpur in 1998, I have started my teaching career in School of Engineering - University of KwaZulu Natal, Durban, South Africa (formerly University of Durban-Westville). Subsequently I worked in IIT Guwahati in Civil Engineering Department as Assistant Professor. Since 2003, I am working in IIT Delhi. Besides teaching and research, I am involved in various projects at national and international levels. The main focus area of the work during the past 5 years has been on development of traffic models in heterogeneous and safe environments. Besides, I am working on improvements of Bus transport systems, road safety and low carbon mobility.

Significant Publications

- G. Pandey, K. Ramachandra Rao D. Mohan, 'Gap maintaining behaviour on Urban Arterials', 10th International Conference on Transportation Planning & Implementation Methodologies for Developing Countries 2012 (TPMDC-2012), IIT Bombay, Dec 2012. , Conference , International
- K. Ramachandra Rao, and G. Tiwari, 'Construction zone traffic management– a case study on national highways widening in India', 2nd International Conference on Infrastructure Development in Africa (ICIDA 2013, Johannesburg, South Africa, March 2013. , Conference , International
- Satish Pandey, K. Ramachandra Rao, Devesh Tiwari, 'Effect of Geogrid on Critical responses of Bituminous Pavements', 25th ARRB-Conference, Perth, Australia, Sep, 2012 , Conference , International
- A. Mohan Rao, K. Ramachandra Rao, Measuring Urban Traffic Congestion – A Review, International Journal of Traffic and Transport Engineering, 2012, Vol 2 (4), 286-305 , Journal , International
- A. Mohan Rao, K. Ramachandra Rao, 'Measuring Urban Traffic Congestion – A Review', International Journal of Traffic and Transport Engineering, 2012, Vol 2 (4), 286-305 , Journal , International
- S.B. Ravi Gadepalli, M. Jahed, K. Ramachandra Rao, G. Tiwari, "Multiple Classification Analysis for Trip Production Models using Household Data: Case study of Patna, India, Journal of Urban Planning and Development – ASCE, 2013 , Journal , International
- Ch. Mallikarjuna and K. Ramachandra Rao, "Heterogeneous Traffic Modelling: A Complete Methodology", Transportmetrica, Vol 7., Issue 5, 2011, 321-345; , Journal , International
- C. Mallikarjuna, K. Ramachandra Rao, S.N.V. Satish Kumar, "Analysis of Microscopic Data under Heterogeneous Traffic conditions", Transport, Vol. 28, No. 2, pp. 262-268, 2010; , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	20	7
M.Tech.	Completed	28	20
M.Tech.	In Progress	4	0
Ph.D.	In Progress	10	9
Ph.D.	Completed	2	2

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	4	188
Technology Development	2	24
Consultancy	35	192

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	11	5
Journal	National	6	2
Conference	International	29	12
Conference	National	9	0
Books Chapter	International	1	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
TRANSPORTATION ENGINEERING I	3-0-2	UG
TRAFFIC ENGG.	3-0-2	PG
GEOMETRIC DESIGN OF STREETS & HIGHWAYS	2-0-2	PG
TRAFFIC ENGINEERING & SIMULATION	2-0-2	PG

Awards & Distinctions

- Indo-US Research Fellowship, Indo-US Science & Technology Forum, 2008
- DST Project for Young Scientists by Science and Engineering Research Council (SERC), Department of Science and Technology, Government of India (Research: Heterogeneous Traffic Flow Modelling for India)

Society Membership, Certification & Training & Any Other Details

- Life Member, Indian Roads Congress (IRC), New Delhi
- Fellow, Institution of Engineers (I), Kolkata
- Life member, Institute of Urban Transport, N Delhi
- Manual of Road Safety, Training workshop sponsored by National Highway Authority of India (NHAI), National Institute for Training of Highway Engineers, Sep 2005
- Road Safety Audit, Pine Town, KwaZulu Natal Department of Transport, South Africa, March 1998

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
DEO RAJ KAUSHAL	2004	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	AMU Aligarh	1988
ME	Hydraulic Structures	AMU Aligarh	1990
Ph.D.	Sediment Transport	IIT Delhi	1996

Research Areas and Highlights

Hydraulic and Water Resources Engineering, Computational Fluid Dynamics, Sediment Transport, Hydraulic Structures, Slurry Pipeline, Flow Instrumentation.

Experience

Dr. Deo Raj Kaushal carried out his Ph.D. at IIT Delhi and Post Doctoral Research at KIT Japan in the field of sediment transport through pipeline and open channel. He has been an Associate Professor of Hydraulics in Civil Engineering Department at IIT Delhi since 2010, Assistant Professor at IIT Delhi during 2004-2010 and Lecturer at VNIT Nagpur during 1994-2004. During his teaching and postdoctoral research, he has carried out several research and consultancy projects. He has worked with several mining, mineral-processing and production companies, either through direct consultation or through collaboration with other companies or research organizations.

Significant Publications

- D.R. Kaushal (2012), Keynote Lecture on CFD modeling for pipeline flow of particles at high concentration, International Conference on Numerical Methods in Multiphase Flows (ICNMMF), Penn State University USA, June 12-14, 2012. , Conference , International
- Kumar, N., Kaushal, D.R. and Kumar, A. (2012), "Numerical investigation of slurry flow in a horizontal pipeline", Proceedings of the International Conference on Applications of Fluid Engineering (CAFE-2012), 20-22 Sept, G.L. Bajaj Institute of Technology and Management, Greater Noida. , Conference , International
- Kumar, N., Kaushal, D.R. and Kumar, A. (2012), "CFD simulation of solid-water slurry flow in horizontal pipeline", Proceedings of the International Conference on Computational Mechanics and Simulations (ICCMS2012), IIT Hyderabad, Dec 9-12. , Conference , International
- Kumar, A., Kaushal, D.R. and Kumar, N. (2012), "CFD modeling for pressure drop at different solid concentration in slurry pipeline", Proceedings of the International Conference on Computational Mechanics and Simulations (ICCMS2012), IIT Hyderabad, Dec 9-12. , Conference , International
- Kumar, N., Kaushal, D.R. and Kumar, A. (2012), "Computational study of the two-phase flow in horizontal slurry pipeline", Proceedings of the International Conference on Mechanical and Industrial Engineering, Goa, India, ISBN: 978-93-81693-89-6, pp. 101-106, 16th June 2012. , Conference , International
- Kaushal, D.R. and Kumar, N. (2013), " Design of pipeline for disposal of coal ash slurry at high concentration", The 16th International Conference on transport and Sedimentation of Solid Particles (T&S16), Rostock, Germany, September, 18-20, 2013. , Conference , International
- A. Kumar, D.R. Kaushal, M.M. Rao (2013), "CFD modeling for pressure drop for flow of slurry at different velocity in horizontal pipeline system", The 16th International Conference on transport and Sedimentation of Solid Particles (T&S16), Rostock, Germany, September, 18-20, 2013. , Conference , International
- Kaushal, D.R., Kumar, A., Tomita, Y., Kuchii, S. And Tsukamoto, H. (2013), "Flow of Mono-Dispersed Particles through Horizontal

- Bend", International Journal of Multiphase Flow, Elsevier Publications, Vol 52, June 2013, pp 71-91. , Journal , International
- Kaushal, D.R., Thinglas, T., Tomita, Y., Kuchii, S. And Tsukamoto, H. (2012), "CFD Modeling for Pipeline Flow of Particles at High Concentrations", International Journal of Multiphase Flow, Elsevier Publications, Volume 43, July 2012, pp 85-100. , Journal , International
 - Kaushal, D.R. and Tomita, Y. (2013), "Prediction of Concentration Profiles for Pipeline Flow of Highly Concentrated Slurry", Particulate Science and Technology, An International Journal, Taylor and Francis Publications, Volume 31, Issue 1, January 2013, pp28-34. , Journal , International
 - Kumar, N., kaushal, D. R. and Kumar, A. (2012). "Computational study of the twophase flow in horizontal slurry pipeline", International Journal of Mechanical and Production Engineering, Volume 1, 2012, pp 117-121. , Journal , International
 - Kaushal, D.R. and Kumar, N. (2013), "OPTIMUM DESIGN OF HIGH CONCENTRATION FLY ASH SLURRY DISPOSAL PIPELINE", ELECTRONIC JOURNAL OF POLISH AGRICULTURAL UNIVERSITIES, Vol.16, Issue 4, 2013. , Journal , International
 - Kaushal, D.R., Thinglas, T., Tomita, Y., Kuchii, S. And Tsukamoto, H. (2012), "Experimental Investigation on Optimization of Invert Trap Configuration for Sewer Solid Management", Powder Technology, An International Journal, Elsevier Publications, Volume 215-216, Issue 1, January 2012, pp 1-14. , Journal , International
 - Kumar, A., Kaushal, D.R. and Kumar, N. (2012), "CFD modeling for pneumatic conveying", Proceedings of the National Conference on Trends and Advances in Mechanical Engineering, YMCA University of Science & Technology, Faridabad, Haryana, Oct 19-20, 2012, pp 221-227. , Conference , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	31	15
M.Tech.	Completed	25	6
Ph.D.	Completed	2	2
Ph.D.	In Progress	5	5

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Consultancy	30	15000000
Sponsored Research Projects	3	3300000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	23	9
Journal	National	3	0
Conference	International	25	9
Conference	National	24	6

Patent & IPR

Course Name	L-T-P	Course Belongs To
RIVER MECHANICS	2-0-2	UG
DESIGN OF HYDRAULIC STRUCTURES	2-0-2	UG
WATER POWER ENGINEERING	3-0-2	UG
HYDROLOGY AND HYDRAULICS	0-0-4	UG
ADVANCED HYDRAULICS	3-0-0	PG
HYDROELECTRIC ENGG.	3-0-0	PG

DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
VASANT A. MATSAGAR	2009	Civil Engineering , Associate Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Government College of Engineering, Aurangabad, India	1997
ME	Structural Engineering	University of Pune, India	1998
Ph.D.	Structural (Earthquake) Engineering	Indian Institute of Technology Bombay, India	2005

Research Areas and Highlights

Structural Engineering, Earthquake and Wind Engineering, Offshore Structures, Fiber Reinforced Polymer Composites, Finite Element Analysis, Blast & Fire Engineering, Multi-hazard Protective Structures.

Experience

(1) Graduate Trainee Engineer in Maharashtra MSEB, 1 yr. (2) Visiting Faculty, Applied Mechanics Department, Government College of Engineering, Aurangabad, 2 yrs. (3) CAD Engineer, Nandadeep Building Centre, Aurangabad, 2 yrs. (4) Research Assistant and Research Associate at Department of Civil Engineering, Indian Institute of Technology (IIT) Bombay, Mumbai, India, 3 yrs, 8 mths. (5) Post-Doctorate Research Fellow and Adjunct Professor at Department of Civil Engineering, Lawrence Technological University (LTU), Southfield, Michigan, USA 3 yrs and 6 mths. (6) Senior Principal and Advisor for on call consultation to SumaTech, Inc., Katy, Texas, USA. (7) Currently serving as Associate Professor at Department of Civil Engineering, IIT Delhi.

Significant Publications

- Vasant A. Matsagar and R. S. Jangid, "Earthquake Base-Isolated Buildings", LAP Lambert Academic Publishing, Germany, ISBN 978-3-8383-8839-7, 2011, Paperback, 280 Pages. , Books , International
- S. K. Saha, V. A. Matsagar and A. K. Jain, "Seismic Response of Base-Isolated Liquid Storage Tanks for Different Shapes of Isolator Hysteresis Loop", 10th World Congress on Computational Mechanics (WCCM 2012), São Paulo, Brazil, 8 - 13 July 2012. , Conference , International
- Rohit Tiwari, Shashank Jain, Tanusree Chakraborty and Vasant Matsagar, "Dynamic Response of Reinforced Concrete Sacrificial Walls under Blast Loading", 10th World Congress on Computational Mechanics (WCCM 2012), São Paulo, Brazil, 8 - 13 July 2012. , Conference , International
- V. K. Kanaujia, R. Ayothiraman, and V. A. Matsagar, "Influence of Superstructure Flexibility on Seismic Response Pile Foundation in Sand", 15th World Conference on Earthquake Engineering (15 WCEE), Lisboa, Portugal, 24 - 28 September 2012. , Conference , International
- S. K. Saha, V. A. Matsagar and A. K. Jain, "Response of Base-Isolated Liquid Storage Tanks under Near-Fault Earthquakes", Indian Society of Earthquake Technology (ISET) Golden Jubilee Symposium, Roorkee, India, 20 - 21 October 2012, Paper No. D06. , Conference , International
- Said Elias and Vasant Matsagar, "Infrastructure Issues and Adaptation of High-Rise Buildings to Changing Wind Scenarios under Climate Change", Proceedings of the Indo-German Workshop on Identification of Issues for Sustainable Urban Built-Environment, Indian Institute of Technology (IIT) Delhi, 29 - 31 October, 2012. , Conference , International
- M. D. Goel and V. A. Matsagar, "Blast Resistant Sandwich Structures: A Numerical Study", 3rd Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS), Indian Institute of Technology (IIT) Delhi, India, 5 - 8 December 2012. , Conference , International
- M. D. Goel, P. Pawar and V. A. Matsagar, "Numerical Simulation of the Blast Response of Sandwich Structure", International Congress on

Computational Mechanics and Simulation (ICCMS), Indian Institute of Technology (IIT) Hyderabad, India, 10 - 12 December 2012. , Conference , International

- M. D. Goel, P. Altenhöfer, V. A. Matsagar, A. K. Gupta, C. Mundt and S. Marburg, "Shock Wave Interaction of Aluminum Metal Foam: An Experimental Study", 27th International Symposium on Ballistics, Fraunhofer (EMI), Freiburg, Germany, 22 - 26 April 2013, Volume 1, pp. 495 - 505. , Conference , International
- S. K. Saha, V. A. Matsagar and A. K. Jain, "Seismic Fragility of Base-Isolated Industrial Tanks", 11th International Conference on Structural Safety and Reliability (ICOSSAR 2013), 16 - 20 June 2013. , Conference , International
- Abdul Matin, Said Elias, Vasant Matsagar, "Seismic Control of Continuous Span Concrete Bridges with Multiple Tuned Mass Dampers", Istanbul, Turkey, August 24 - 29, 2014. (Communicated) , Conference , International
- Rohit Tiwari, Tanusree Chakraborty, Vasant Matsagar, "Dynamic Analysis of Underground Tunnels Subjected to Internal Blast Loading", 11th World Congress on Computational Mechanics (WCCM XI), Barcelona, Spain, July 20 - 25, 2014. (Abstract Communicated) , Conference , International
- Amar Sharma, Gazala Habib and Vasant Matsagar, "Behaviour of High Performance Concrete with Marble Dust at Elevated Temperatures", The International Conference on Trends and Challenges in Concrete Structures, Ghaziabad, NCR Delhi, India, 19 - 21 December 2013. , Conference , International
- Said Elias and Vasant Matsagar, "Wind Response Control of 76-Storey Benchmark Building with Distributed Multiple Tuned Mass Dampers", The Eighth Asia-Pacific Conference on Wind Engineering (APCWE8), Chennai, India, 10 - 14 December 2013. (Presented) , Conference , International
- Amar Sharma, Gazala Habib and Vasant Matsagar, "Durability Study on High Performance Concrete of M80 Grade with Marble Dust", Indian Concrete Institute-Innovative World of Concrete (ICI-IWC), Hyderabad, India, 23 - 26 October 2013. , Conference , International
- Said Elias and Vasant A. Matsagar, "Effective Provision of Multiple Tuned Mass Dampers for Earthquake Response Reduction in Buildings", Vienna Congress on Recent Advances in Earthquake Engineering and Structural Dynamics (VEESD), Vienna, Austria, 28 - 30 August 2013. (Presented) , Conference , International
- P. S. Jagtap, V. A. Matsagar, G. R. Reddy and K. K. Vaze, "Experimental Investigation of Base-Isolated Secondary Systems", 22nd International Conference on Structural Mechanics in Reactor Technology (SMiRT-22), San Francisco, California, USA, 18 - 23 August 2013, pp. 2149 - 2157. (Presented) , Conference , International
- D. Hari Hara Rohit, Pravin S. Jagtap, Vasant A. Matsagar, "Seismic Isolation of Anchored Non-Structural Components", International Conference on Recent Advances in Engineering, Technology and Management (SPICON-2012), Mumbai, India, 31 May - 2 June 2012. (Keynote Speech) , Conference , International
- M. C. Jacob, G. R. Dodagoudar and V. A. Matsagar, "Seismic Reliability Analysis of Base-Isolated Buildings", International Symposium on Engineering under Uncertainty Safety Assessment and Management, Shibpur, India, 4 - 6 January 2012. , Conference , International
- Manmohan Dass Goel, Tanusree Chakraborty and Vasant Matsagar, "Dynamic Response of Steel-Sand Composite Stiffened Plates under Blast Loading", International Symposium on Engineering under Uncertainty Safety Assessment and Management, Shibpur, India, 4 - 6 January 2012. (Presented) , Conference , International
- Pravin Jagtap, Tanusree Chakraborty and Vasant Matsagar, "Nonlinear Dynamic Behavior of Granular Materials in Base Excited Silos", 4th International Conference on Structural Stability and Dynamics (ICSSD-12), Jaipur, India, 4 - 6 January 2012. (Keynote Speech) , Conference , International
- Naveet Kaur and V. A. Matsagar, "Tuned Mass Damper on Base-Isolated Building under Near-Fault Earthquakes", 21st International Conference on Structural Mechanics in Reactor Technology (SMiRT-21), New Delhi, India, 6 - 11 November 2011. (Presented) , Conference , International
- Rohit Gogna and V. A. Matsagar, "Base-Isolated Structure with Tuned Mass Damper", 18th International Congress on Sound and Vibration (ICSV18), Rio de Janeiro, Brazil, 10 - 14 July 2011. , Conference , International
- Naveet Kaur, V. A. Matsagar and A. K. Nagpal, "Earthquake Response of Medium-Rise to High-Rise Buildings with Friction Dampers", 18th International Congress on Sound and Vibration (ICSV18), Rio de Janeiro, Brazil, 10 - 14 July 2011. , Conference , International
- M. Cibi Jacob, Steffen Marburg, Vasant A. Matsagar, "A Probabilistic Method to Generate Artificial Earthquake Ground Motions", 14th Symposium on Earthquake Engineering, Roorkee, India, 2010. (Presented) , Conference , International
- Mukesh Kumar, Vasant A. Matsagar, K. S. Rao, "Blast Loading on Semi-Buried Structures with Soil-Structure Interaction", Symposium on Plasticity

- and Impact (including Blast) Mechanics (IMPLAST), Providence, Rhode Island, USA, 2010. (Presented) , Conference , International
- M. D. Goel, V. A. Matsagar, G. S. Benipal, Anil K. Gupta, "Dynamic Response of Shell Structures Subjected to Explosive Loads", Symposium on Plasticity and Impact (including Blast) Mechanics (IMPLAST), Providence, Rhode Island, USA, 2010. (Presented) , Conference , International
 - M. D. Goel, V. A. Matsagar, Anil K. Gupta, "Study of Stiffened Plate under Spherical Air Blast", 1st International Conference of Protective Structures, Providence, Manchester, UK, 2010. (Presented) , Conference , International
 - Elin Jensen, Christopher Eamon, Xiuwei Shi, Vasant Matsagar, "Life-Cycle Cost Analysis of CFRP Reinforced Concrete Bridges", Transportation Research Board (TRB), 89th Annual Meeting, Washington DC, USA, January 2010, Paper 10-1103, pp. 20. , Conference , International
 - Nabil Grace, Elin Jensen, Christopher Eamon, Xiuwei Shi and Vasant Matsagar, "Life Cycle Cost Analysis of CFRP Prestressed Concrete Bridges", Proceedings of US-Japan Workshop on Life Cycle Assessment of Sustainable Infrastructure Materials, Sapporo, Japan, 2009, pp. 1-12. , Conference , International
 - Nabil Grace, Elin Jensen, Vasant Matsagar, Eslam Soliman and Joseph Hanson, "Use of Unbonded CFRP Strands in Transverse Post-Tensioning in Box-Beam Bridges", International Conference on Advances in Concrete, Structural and Geotechnical Engineering, Pilani, India, 2009. (Keynote Speech) , Conference , International
 - V. Gupa, N. Pathania and Vasant Matsagar, "Feasibility Study of Offshore Wind Farms along the Indian Coastline for Renewable Source of Alternate Energy", Indo-Canada Workshop on Electricity Generation using Renewable Energy, Delhi, India, 2009. (Presented) , Conference , International
 - Naveet Kaur, Vasant Matsagar and A. K. Nagpal, "Earthquake Response of Mid-Rise to High-Rise Buildings with Friction Dampers", International Journal of High-Rise Buildings, Volume 1, No. 4, 2012, pp: 311 - 332 , Journal , International
 - Nabil Grace, Elin Jensen, Vasant Matsagar and Prasadu Penjendra, "Performance of an AASHTO Beam Bridge Prestressed with CFRP Tendons", Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), Volume 18, No. 2, 2013, pp: 110 - 121 , Journal , International
 - Cibi Jacob M., Kheirollah Sepahvand, Vasant A. Matsagar and Steffen Marburg, "Stochastic Seismic Response of an Isolated Building", International Journal of Applied Mechanics, Volume 5, No. 1, 2013, pp: 1 - 21 , Journal , International
 - Manmohan Dass Goel, Vasant A. Matsagar, Anil K. Gupta and Steffen Marburg, "Strain Rate Sensitivity of Closed Cell Aluminium Fly Ash Foam", Transactions of Nonferrous Metals Society of China, Volume 23, No. 4, 2013, pp: 1080 - 1089 , Journal , International
 - Nabil Grace, Kenichi Ushijima, Vasant Matsagar and Chenglin Wu, "Performance of AASHTO-Type Bridge Model Prestressed with Carbon Fiber-Reinforced Polymer Reinforcement", ACI Structural Journal, American Concrete Institute (ACI), Volume 110, No. 3, 2013, pp: 491 - 502. , Journal , International
 - S. K. Saha, V. A. Matsagar and A. K. Jain, "Comparison of Base-Isolated Liquid Storage Tank Models under Bi-Directional Earthquakes", Natural Science, Volume 5, No. 8A1, 2013, pp: 27-37. , Journal , International
 - M. D. Goel, Vasant A. Matsagar, Steffen Marburg and Anil K. Gupta, "Comparative Performance of Stiffened Sandwich Foam Panels under Impulsive Loading ", Journal of Performance of Constructed Facilities, American Society of Civil Engineers (ASCE), Volume 23, No. 5, 2013, pp: 540-549. , Journal , International
 - Naseef Ummer, J. Uma Maheswari, Vasant A. Matsagar and Koshy Varghese, "Factors Influencing Design Iteration with a Focus on Project Duration", Journal of Management in Engineering, American Society of Civil Engineers (ASCE), Volume 30, No. 1, 2014, pp: 127-130. , Journal , International
 - Vasant A. Matsagar, "Materials for Sacrificial Blast Wall as Protective Structure", Proceedings of the Indian National Science Academy (INSA), Volume 79, No. 3, 2013, pp: 1 - 7. , Journal , International
 - Manmohan Dass Goel and Vasant A. Matsagar, "Blast Resistant Design of Structures", Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE). doi: [http://dx.doi.org/10.1061/\(ASCE\)SC.1943-5576.0000188](http://dx.doi.org/10.1061/(ASCE)SC.1943-5576.0000188). (Accepted, in Press) , Journal , International
 - Vasant A. Matsagar, "Computing Stress and Displacement Response of Composite Plates under Blast", Disaster Advances, Volume 7, No. 1, 2014, pp: 23-28. , Journal , International
 - M. D. Goel, Vasant A. Matsagar, Steffen Marburg and Anil K. Gupta, "Comparative Performance of Stiffened Sandwich Foam Panels under Impulsive Loading ", Journal of Performance of Constructed Facilities, American Society of Civil Engineers (ASCE), Volume 23, No. 5, 2013, pp:

540-549. , Journal , International

- Md. Shams Alam, Tanusree Chakraborty, Vasant Matsagar, K. Seshagiri Rao, Prince Sharma, Manjit Singh, "Characterization of Kota Sandstone under Different Strain Rates in Uniaxial Loading". (Communicated) , Journal , International
- Mohammad Nadeem, Tanusree Chakraborty and Vasant Matsagar, "Nonlinear Buckling Analysis of Slender Piles with Geometric Imperfections". (Communicated) , Journal , International
- Vaibhav Mittal, Tanusree Chakraborty and Vasant Matsagar, "Dynamic Analysis of Liquid Storage Tank under Blast using Coupled Euler Lagrange Formulations". (Communicated) , Journal , International
- S. K. Saha, V. A. Matsagar and A. K. Jain, "Dynamic Analysis of Base-Isolated Cylindrical Liquid Storage Tanks under Near-Fault Earthquakes". (Communicated) , Journal , International
- Vasant A. Matsagar, "Comparative Performance of Sacrificial Blast Walls". (Communicated) , Journal , International
- Shashank Jain, Rohit Tiwari, Tanusree Chakraborty and Vasant Matsagar, "Dynamic Response of Reinforced Concrete Sacrificial Wall under Blast Loading". (Communicated) , Journal , International
- M. D. Goel, P. Altenhöfer, V. A. Matsagar, A. K. Gupta, C. Mundt and S. Marburg, "Interaction of Shock Wave with Closed Cell Aluminum Metal Foam". (Communicated) , Journal , International
- Alok Dua, Mathias Clobes, Thomas Höbbel and Vasant Matsagar, "Dynamic Response of Transmission Tower-Line System under Turbulent Wind Load". (Communicated) , Journal , International
- S. K. Saha, V. A. Matsagar and A. K. Jain, "Earthquake Response of Base-Isolated Liquid Storage Tanks for Different Isolator Models". (Communicated) , Journal , International
- Pravin Jagtap, Tanusree Chakraborty and Vasant Matsagar, "Nonlinear Dynamic Behavior of Granular Materials in Base Excited Silos". (Communicated) , Journal , International
- Rajkumar Karmegam, Lothar Stempniewski and Vasant A. Matsagar, "Base Isolation in Machine Foundation Considering Soil-Structure Interaction". (Communicated) , Journal , International
- Nabil Grace, Elin Jensen, Vasant Matsagar and Prasadu Penjendra, "Performance of an AASHTO Beam Bridge Prestressed with CFRP Tendons", Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), Closure 07013002-1, 2013. , Journal , International
- S. K. Saha, K. Sepahvand, V. A. Matsagar, A. K. Jain and S. Marburg, "Stochastic Analysis of Base-Isolated Liquid Storage Tanks with Uncertain Isolator Parameters under Random Excitation", Engineering Structures, Volume 57, 2013, pp: 465-474 . , Journal , International
- Manmohan Dass Goel, Tanusree Chakraborty and Vasant A. Matsagar, "Dynamic Response of Steel-Sand Composite Stiffened Plates under Impulsive Loading", Journal of Battlefield Technology, Volume 15, No. 3, 2012, pp: 1 - 7. , Journal , International
- M. D. Goel, Vasant A. Matsagar, Anil K. Gupta and Steffen Marburg, "An Abridged Review of Blast Wave Parameters", Defence Science Journal, Volume 62, No. 5, 2012, pp: 300 - 306. , Journal , International
- Manmohan Dass Goel, Marco Peroni, George Solomos, Dehi Pada Mondal, Vasant A. Matsagar, Anil K. Gupta, Martin Larcher and Steffen Marburg, "Dynamic Compression Behavior of Cenosphere Aluminum Alloy Syntactic Foam", Materials and Design, Volume 42, 2012 pp: 418 - 423. , Journal , International
- M. D. Goel, V. A. Matsagar and A. K. Gupta, "Dynamic Response of Stiffened Plates under Air Blast", International Journal of Protective Structures, Volume 2, No. 1, 2011, pp: 139 - 155. , Journal , International
- Nabil Grace, Elin Jensen, Vasant Matsagar, Eslam Soliman and Joseph Hanson, "Use of Unbonded CFRP Strands in Transverse Post-Tensioning in Box Beam Bridges", International Journal of Earth Sciences and Engineering, Volume 3, No. 2, 2010, pp: 128 - 137. , Journal , International
- Nabil Grace, Elin Jensen, Tsuyoshi Enomoto, Vasant Matsagar, Eslam Soliman and Joseph Hanson, "Transverse Diaphragms and Unbonded CFRP Post-Tensioning in Box Beam Bridges", PCI Journal, Precast/Prestressed Concrete Institute, USA, Volume 55, No. 2, 2010, pp: 109 - 122. , Journal , International
- Vasant A. Matsagar and R. S. Jangid, "Impact Response of Torsionally Coupled Base-Isolated Structures", Journal of Vibration and Control, USA, Volume 16, No. 11, 2010, pp: 1623 - 1649. , Journal , International
- Vasant A. Matsagar and R. S. Jangid, "Analytical Solutions for Impact in Isolated Shear Beam", International Journal for Computational Civil and Structural Engineering, Volume 4, No. 1, 2008, pp: 101 - 113. , Journal , International

- Vasant A. Matsagar and R. S. Jangid, "Base Isolation for Seismic Retrofitting of Structures", Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE), Volume 13, No. 4, 2008, pp: 1 - 11. , Journal , International
- Alok Pradhan, Vasant Matsagar, Praveen Kumar, "Floor Response Spectra Considering Soil-Structure Interaction for Design of Secondary Structures", Technical Programme Discussion Meeting (TPDM 2013), Board of Research in Nuclear Sciences (BRNS), Bhabha Atomic Research Centre (BARC), Mumbai, India, 15 February 2013. (Presented) , Conference , National
- P. Bhatt, V. A. Matsagar and A. K. Nagpal, "Reinforced Concrete Portal Frames Subjected to Fire", National Conference on Fire Research and Engineering (FiRE 2014-022), India, March 01 - 02, 2014. (Accepted) , Conference , National
- P. S. Jagtap, Vasant A. Matsagar, R. S. Jangid, "Earthquake Retrofitting of Masonry Dome by Base Isolation: A Case Study", Workshop on Retrofitting and Rehabilitation, Mumbai, India, 2009. (Presented) , Conference , National
- V. Kulhari, V. Matsagar and B. Bhattacharjee, "Polymer Composite Rebar in Reinforced Concrete", 25th Annual Meeting of the Polymer Processing Society (PPS), Goa, India, 2009, CD Proceedings. , Conference , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	30	30
B.Tech.	In Progress	9	9
M.Tech.	Completed	36	36
M.Tech.	In Progress	16	16
M.S.(Research)	In Progress	2	2
Ph.D.	Completed	1	1
Ph.D.	In Progress	15	15

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	10	29992215
Consultancy	135	118841978

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	32	32
Journal	National	1	1
Conference	International	34	34
Conference	National	1	1
Books	International	1	1

Patent & IPR

- Base Isolation of Structures

Course Name	L-T-P	Course Belongs To
MAJOR PROJECT PART - I	0-0-12	PG
MAJOR PROJECT PART-II	0-0-24	PG
FEM IN STRUCTURAL ENGINEERING	2-1-0	PG
DESIGN OF STEEL STRUCTURES	3-1-2	UG
ADVANCED STRUCTURAL ANALYSIS	2-0-2	UG
PSC/COMPOSITE STRUCTURES	3-0-0	PG
INDEPENDENT STUDY	0-3-0	PG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG

DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG
INDEPENDENT STUDY	0-3-0	PG
STRUCTURAL ANALYSIS I	3-1-2	UG
CONCRETE MATERIAL & DESIGN	3-1-4	UG
MINI PROJECT (CE)	0-0-6	UG
STRUCTURAL ANALYSIS II	3-1-2	UG
PRACTICAL TRAINING	0-0-0	PG
MAJOR PROJECT PART 1 (CE)	0-0-6	UG
MAJOR PROJECT PART 2 (CE)	0-0-16	UG
DESIGN OF STEEL STRUCTURES	2-1-0	PG
MATHEMATICAL AND NUMERICAL METHODS	2-1-0	PG
MAJOR PROJECT PART-I	0-0-12	PG
MAJOR PROJECT PART-II	0-0-24	PG
MAJOR PROJECT PART-I	0-0-12	PG
MAJOR PROJECT PART-II	0-0-24	PG

Awards & Distinctions

- Awarded for the best paper presented in state level paper presentation competition INSEARCH-97 at Government College of Engineering Aurangabad, Maharashtra, India.
- "CIMR Post-Doctoral Fellowship" awarded by the Center for Innovative Materials Research, Lawrence Technological University, Southfield, Michigan, USA from 2005 to 2008.
- Awarded by the Parliament of India for second best paper entitled "The Temple of Legendry Visionaries" presented at the seminar "Role and Relevance of Rajya Sabha in Indian Polity".
- Grant awarded by Earthquake Engineering Research Institute (EERI), U.S.A. to participate and present paper in the 100th Anniversary Earthquake Engineering Conference held at San Francisco in 2006.
- Associate (Responsible) Editor of the Earthquake Spectra, an international journal of Earthquake Engineering Research Institute (EERI), USA.
- "Associate Member" of ACI Committee 216 on Fire Resistance and Fire Protection of Structures, American Concrete Institute (ACI), Farmington Hills, Michigan, USA.
- "Visiting Professor" appointment at the Department of Civil Engineering, Lawrence Technological University, Southfield, Michigan (MI), USA.
- "Outstanding Young Faculty Fellowship" awarded by the Indian Institute of Technology (IIT) Delhi in the year 2009.
- "IEI Young Engineer Award" awarded by the Institution of Engineers (India) in Civil Engineering Discipline in the year 2009.
- "IBC Award for Excellence in Built Environment" of Indian Buildings Congress (IBC) by Mr. S. Jaipal Reddy, Union Minister for Urban Development, Government of India.
- "DAAD Research Ambassador" by the Deutscher Akademischer Austausch Dienst, German Academic Exchange Programme for the academic session 2010-2011.
- "DAAD Award" for study visits to German universities such as, RWTH Aachen University; UniBW; TUD; and TUM, under faculty exchange programme in 2009 and 2012.
- "DAE Young Scientist Award" by the Board of Research in Nuclear Sciences (BRNS) at Bhabha Atomic Research Centre (BARC), Department of Atomic Energy (DAE), Government of India.
- "DST Young Scientist Award" by the Science and Engineering Research Council (SERC) at Department of Science and Technology (DST), Ministry of Science and Technology, Government of India.
- "Erasmus Mundus Award" under the Action 2 project India4EU II programme of the European Commission to conduct research in Civil Engineering at Ecole Centrale de Nantes (ECN), France in 2013.

- "Young Professional Award" conferred by the Institution of Engineers (India) and World Federation of Engineering Organisations (WFEO).
- DAAD award for students research meeting at TU München and RWTH Aachen in December 2013.

Society Membership, Certification & Training & Any Other Details

- Member of International Association of Protective Structures (IAPS)
- Charter Member of Engineering Mechanics Institute, American Society of Civil Engineers (ASCE)
- Member of Earthquake Engineering Research Institute (EERI), USA (e-affiliate)
- Member of American Concrete Institute (ACI)
- Member of American Institute of Steel Construction (AISC)
- Life Member of Indian Society for Wind Engineering (ISWE)
- Life Member of Indian Buildings Congress (IBC)
- Life Member of Indian Institution of Bridge Engineers (IIBE)
- Life Member of Indian Society of Structural Engineers (ISSE)
- Life Member of Indian Society of Earthquake Technology (ISET)
- Life Member of Institution of Engineers (India)

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
SHASHANK BISHNOI	2010	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	Indian Institute of Technology Kanpur	2002
ME	Civil Engineering	University of Tokyo	2004
Ph.D.	Materials Science	Ecole Polytechnique Fédérale de Lausanne	2008

Research Areas and Highlights

Experimental and Numerical Studies into Hydration of Cements and Supplementary Cementitious Materials, Sustainability, Durability and Life Cycle Costs of Concrete Structures.

Experience

Post-doctoral Researcher - EPFL, Switzerland (2008-2009)

Post-doctoral Researcher - Laval University, Canada (2009-2010)

Assistant Professor - IIT Delhi (2010-present)

Visiting Professor - EPFL, Switzerland (Summer 2012)

Significant Publications

- Bishnoi S., "Validity of simplifications in nucleation and growth equations" (Invited talk), Microstructure, Setting and Aging of Cement: from Soft Matter Physics to Sustainable Materials, Monte Verita, Switzerland, August 2012 , Conference , International
- Kaur A. and Bishnoi S., "Effect of chemical composition of fly-ashes on the properties of concrete", UKIERI Concrete Congress, Jalandhar, India, March 2013 , Conference , International
- Sarkar S., Halder A. and Bishnoi S., "Shrinkage in concretes containing fly ash", UKIERI Concrete Congress, Jalandhar, India, March 2013 , Conference , International
- Bishnoi S., "Modelling the effect of fine fillers on hydration of alite" (Plenary talk), CONMOD 2010, Lausanne, Switzerland, June 2010 , Conference , International
- Bishnoi S. and Scrivener K.L., "Modelling nucleation and growth kinetics of alite using μic " (Invited talk), ACI annual convention, Chicago, USA, March 2010 , Conference , International
- Bishnoi S. and Scrivener K.L., "Nucleation and growth kinetics and the density of C-S-H" (Invited talk), International summit on cement hydration kinetics, Quebec City, Canada, July 2010 , Conference , International
- Bishnoi S. and Scrivener K.L., "Numerical experimentation with cement using μic ", CONMOD 2008, Delft, The Netherlands, May 2008 , Conference , International
- Bishnoi S. and Scrivener K., "Micro-Structural Modelling of Cementitious Materials using Vector Approach", Proceedings of the 12th International Congress on the Chemistry of Cement, Montreal, Canada, July 2007 , Conference , International
- Guidoum A., Jaouadi I., Bishnoi S. and Navi P., "Modelling Mechanical Properties of Cement-Based Materials from their Microstructure",

Proceedings of the 12th International Congress on the Chemistry of Cement, Montreal, Canada, July 2007 , Conference , International

- Costoya M., Bishnoi S., Gallucci E. and Scrivener K., "Synthesis and Hydration of Tricalcium Silicate", Proceedings of the 12th International Congress on the Chemistry of Cement, Montreal, Canada, July 2007 , Conference , International
- Bishnoi S. and Scrivener K., "Modelling the Hydration of Portland Cement using μic ", Modelling of Heterogenous Materials with Applications in Construction and Biomedical Engineering, Prague, Czech Republic, June 2007 , Conference , International
- Bishnoi S. and Scrivener K., "Multi-Scale Numerical Characterisation of Cement Porosity", Proceedings of the 5th International Essen Workshop on Transport in Concrete, Essen, Germany, June 2007 , Conference , International
- Bishnoi S. and Scrivener K., "Optimised Continuum Cement Hydration Modelling", Proceedings of the 2nd International Symposium on Advances in Concrete through Science and Engineering, Quebec City, Canada, pp.63-74, September 2006 , Conference , International
- Costoya M., Bishnoi S., Gallucci E. and Scrivener K., "Effect of Particle Size Distribution of Alite on its Hydration", Cement and Concrete Science, Sheffield Hallam University, U.K., September 2006 , Conference , International
- Gallucci E., Scrivener K., Bishnoi S., Groso A. and Stamboni M., "3D imaging of the pore network of hydrated cement pastes. Experimental and modelling approaches", Cementitious Materials as Model Porous Media: Nanostructure and Transport Processes, Monte Verita, Switzerland, July 2005 , Conference , International
- Bishnoi S. and Uomoto T., "Strain variations in concrete under freeze-thaw conditions", Proceedings of the 59th Annual Meeting of Japan Society of Civil Engineers, Nagoya, Japan, 2004 , Conference , International
- Bishnoi S. and Uomoto T., "Temperature and strain variation in concrete under freeze-thaw conditions", Proceedings of the Annual Convention of Japan Concrete Institute, Kochi, Japan, 2004 , Conference , International
- Bishnoi S., Singh A. and Misra S., "Parameters affecting steel anchorages under shear", Proceedings of the Annual Convention of Japan Concrete Institute, Kyoto, Japan, 2003 , Conference , International
- Bishnoi S., "Geometric Limitations of Nucleation and Growth Models: Revisiting the Impingement Assumption", Cement and Concrete Research, Vol. 46, pp. 30-40, 2013 , Journal , International
- Do Q.H., Bishnoi S. and Scrivener K.L., "Numerical simulation of porosity in cements", Transport in Porous Media, Vol. 99, pp. 101-117, 2013 , Journal , International
- Kumar A, Bishnoi S. and Scrivener K.L., "Modelling early age hydration kinetics of alite", Cement and Concrete Research, Volume 42(7), pp. 903-918, 2012 , Journal , International
- Bishnoi S. and Scrivener K.L., "Discussion of the paper "Accelerated growth of calcium silicate hydrates" by Luc Nicoleau", Cement and Concrete Research, Volume 42(6), pp. 878-880, 2012 , Journal , International
- Thomas J.J., Biernacki J.J., Bullard J.W., Bishnoi S., Dolado J.S., Scherer G.W. and Luttge A., "Modeling and simulation of cement hydration kinetics and microstructure development", Cement and Concrete Research, Vol. 41(12), pp. 1257-1278, 2011 , Journal , International
- Bishnoi S. and Scrivener K.L., "Studying nucleation and growth kinetics of alite hydration using μic ", Cement and Concrete Research, Volume 39(10), pp. 849-860, 2009 , Journal , International
- Bishnoi S. and Scrivener K.L., " μic : A new platform for modelling the hydration of cements", Cement and Concrete Research, Volume 39(4), pp. 266-274, 2009 , Journal , International
- Bishnoi S. and Uomoto T., "Strain temperature hysteresis in concrete under cyclic freeze-thaw conditions", Cement and Concrete Composites, Volume 30(5), pp. 374-380, 2008 , Journal , International
- Joseph S. and Bishnoi S., "Numerical Simulations to choose Concrete Strategies to Prevent Thermal Cracks", 13th NCB International Seminar on Cement and Building Materials, New Delhi, India, November 2013 , Conference , National
- Kaur A. and Bishnoi S., "Investigations on early age hydration in cement - fly ash paste", 13th NCB International Seminar on Cement and Building Materials, New Delhi, India, November 2013 , Conference , National
- Medepalli S. and Bishnoi S., "Influence of fly ash parameters on cement hydration", 13th NCB International Seminar on Cement and Building Materials, New Delhi, India, November 2013 , Conference , National
- Bishnoi S., "Resolution-free numerical simulation of the pore-size distribution of cement paste", 3rd Asian conference on ecstasy in concrete, Chennai, India, December 2010 , Conference , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	31	31
M.Tech.	Completed	16	16
M.Tech.	In Progress	7	7
Ph.D.	Completed	1	1
Ph.D.	In Progress	6	6
M.S.(Research)	In Progress	1	1

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	5	16934588
Consultancy	84	17904516

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	8	7
Conference	National	6	6
Conference	International	17	5

Patent & IPR

Course Name	L-T-P	Course Belongs To
RECENT ADVANCES IN CONSTRUCTION MATERIALS	3-0-0	PG
CIVIL ENGG. MATERIALS	3-0-0	PG
CONCRETE MATERIAL & DESIGN	3-1-4	UG
STRUCTURAL ANALYSIS II	0-2-4	UG
COMPUTATION LAB FOR CONSTRUCTION MANAGMENT	0-0-6	PG
CONSTRUCTION MATERIALS & INFORMATION TECH. LAB	0-0-6	PG
CONCRETE TECHNOLOGY AND MATERIALS	2-0-0	UG

Awards & Distinctions

- My sense of satisfaction. (I do not believe in any other award.)

Society Membership, Certification & Training & Any Other Details

- Indian Concrete Institute



2012 - 2013

Faculty Details

Employee Code	Employee Name	Department	Designation
16507	SUMEDHA CHAKMA	Civil Engineering	Assistant Professor

INSTRUCTIONAL ELEMENTS

Teaching Load:

Category	Course Code	Course Name	L-T-P	Semester	Strength
UG	CE702	Water Resources Engineering I	3-1-0	1	90
UG	CE802	Water Resources Engineering II	3-1-0	2	90
UG	CE303	Surveying	3-1-1	1	110
UG	CE403	Geoinformatics (Part of subject)	3-1-1	2	110

Note: Courses taken at NIT Allahabad

B.Tech&M.Tech Project Supervision

Level	Students	Project Title
MTECH	Vinai Singh	Assessment of water quality near dumping yards at Allahabad city
BTECH	Bigyan, Homraj	Gas generation from MSW landfill

ACADEMIC RESEARCH AND PUBLICATION ELEMENTS

Publication

Journal Papers

1. **Chakma, S.** and Mathur, S. (2013). "Post closure long-term settlement for MSW landfills." Journal of Hazardous, Toxic, and Radioactive Waste, ASCE Journal, 17(2), 81-88.
2. **Chakma, S.** and Vaishya, R. C. (2013). "Assessment of composting, energy and gas generation potential for MSW at Allahabad City in India." International Journal of Research in Engineering and Technology, 02(08), 210-214.
3. **Chakma, S.** and Mathur, S. (2012). "Estimation of Primary and Mechanical Compression in MSW Landfills." Journal of Hazardous, Toxic, and Radioactive Waste, ASCE Journal, 16 (4), 298-303.

Conference Papers

1. **Chakma, S.** and Akhtara, H. (2012). "Quality Assessment of Ground and River water at Naini, Allahabad" ENSURE 2012: Environmentally Sustainable Urban Ecosystems", February 24-26, 2012 at IIT Guwahati, Assam, INDIA
2. **Chakma, S.** and Singh, V. K. (2012). "Bio-Reactor Landfill Potential in Allahabad." ENSURE 2012: Environmentally Sustainable Urban Ecosystems", February 24-26, 2012 at IIT Guwahati, Assam, INDIA
3. Kumar, S.R., **Chakma, S.** and Borah, M. K. (2013). "Infiltration studies at downstream of Kushi sub-basin" Assam Water Conference, February 21-22, 2013.

Technical Reports (External & internal)

Category	Title of Report	Authors Name	Author Status
External	Infiltration behaviour under various land use and its modeling in Kulsī River Basin (Assam/Meghalaya): submitted to Brahmaputra Board, Govt. of India (2013).	Kumar, S. R. and Chakma, S.	Accepted

Special & Invited Lectures / Meeting / Workshop / Seminars

Event Type	Level	Role	Details
Invited Lecture	National	Speaker	MSW Management at Allahabad University (2013)

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
TANUSREE CHAKRABORTY	2010	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Bengal Engineering College, Shibpur, India	2002
M.Tech.	Rock Mechanics	Indian Institute of Technology (IIT) Delhi, India	2004
Ph.D.	Soil Mechanics and Geotechnical Engineering	Purdue University, West Lafayette, USA	2009

Research Areas and Highlights

Foundation Engineering, Soil Plasticity and Constitutive Modeling, Blast Loading in Soil and Rock, Soil-Structure Interaction, Underground Construction in Soil and Rock, Energy Geotechnical Engineering, Offshore Geotechnical Engineering.

Experience

Indian Institute of Technology (IIT), Delhi, India

Assistant Professor (December 2010 – Present),

DS Simulia, Providence, Rhode Island, U.S.A.

Technical Support Engineer I (December 2008 – December 2010)

Significant Publications

- Chakraborty, T., Larcher, M. and Gebbeken, N. (2013). Comparative performance of tunnel lining materials under blast loading. Communicated to EURO:TUN 2013, 3rd International Conference on Computational Methods in Tunnelling and Subsurface Engineering, Ruhr University Bochum, 17-19 April 2013. , Conference , International
- W. Higgins, T. Chakraborty and D. Basu (2012). "Finite element analysis of tunnels in soil subjected to blast load using an advanced soil model." Proceedings of the Third Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS-2012), Narosa Publishing House, pp. 345-348. , Conference , International
- Misra, A., Chakraborty, T. and Basu, D. (2012). "Piles subjected to torsion." Proceedings of GeoManitoba 2012, Winnipeg, Manitoba, Canada, CD-ROM, September-October 2012. , Conference , International
- Rohit Tiwari, Shashank Jain, Tanusree Chakraborty, Vasant Matsagar (2012). "Dynamic response of reinforced concrete sacrificial walls under blast loading." 10th World Congress on Computational Mechanics (WCCM 2012), São Paulo, Brazil, 8 - 13 July, 2012. (Presented). , Conference , International
- Sumant Mohanto, Kamlakar Singh, Tanusree Chakraborty, Dipanjan Basu (2012). "Cyclic thermo-mechanical analysis of underground energy storage cavern." 13th World Conference of the Associated research Centers for the Urban Underground Space Underground Space Development – Opportunities and Challenges, 7 – 9 November 2012, Marina Bay Sands, Singapore. , Conference , International
- T. Chakraborty, R. Salgado, P. Basu, and M. Prezzi (2012). "Shaft capacity of drilled shafts in clay." Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Vol 139(4), pp. 548-563. , Journal , International

- Manmohan Dass Goel, Tanusree Chakraborty and Vasant A. Matsagar (2012). "Dynamic response of steel-sand composite stiffened plates under impulsive loading", Journal of Battlefield Technology, Vol 15(3), pp. 7-14. , Journal , International
- Higgins, W., Chakraborty, T. and Basu, D. (2012). "A high strain-rate constitutive model for sand and its application in finite element analysis of tunnels subjected to blast." International Journal for Numerical and Analytical Methods in Geomechanics, DOI: 10.1002/nag.2153. , Journal , International
- Martindale, H., Chakraborty, T. and Basu, D. (2013). "A strain-rate dependent clay constitutive model with parametric sensitivity and uncertainty quantification." Geotechnical and Geological Engineering, Vol 31(1), pp. 229-248. , Journal , International
- T. Chakraborty, R. Salgado and D. Loukidis (2013), "A two-surface plasticity model for clay." Computers and Geotechnics, Vol 49, pp. 170-190. , Journal , International
- Martindale, H., Chakraborty, T. and Basu, D. (2013). "A strain-rate dependent clay constitutive model with parametric sensitivity and uncertainty quantification." Geotechnical and Geological Engineering, Vol 31(1), pp. 229-248. , Journal , International
- Aditi Mishra, Rajni Saggi, Dipanjan Basu and Tanusree Chakraborty (2013). "Analysis of pile subjected to torsion in multilayered soil", International Journal of Numerical and Analytical Methods in Geomechanics. DOI: 10.1002/nag.2213. , Journal , International
- Basu, P., Prezzi, M. Salgado, R., Chakraborty, T. "Shaft resistance and setup factors for piles jacked in clays", Journal of Geotechnical and Geoenvironmental Engineering, ASCE. 10.1061/(ASCE)GT.1943-5606.0001018. , Journal , International
- T. Chakraborty (2013). "Impact simulation of rocks under SHPB test", Proceedings of the Indian National Science Academy (INSA), Vol 79(3), pp. 1 - 7. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	6	6
M.Tech.	Completed	7	7
M.Tech.	In Progress	8	8
M.S.(Research)	In Progress	1	1
Ph.D.	In Progress	3	3

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	3	7600000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	10	8
Journal	National	1	1
Conference	International	13	11
Conference	National	3	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
MINOR PROJECT	0-0-6	PG
MAJOR PROJECT PART-II	0-0-24	PG
ENVIRONMENTAL ROCK ENGG.	3-0-0	PG
ROCK MECHANICS LAB-II	0-0-6	PG
SITE INVESTIGATIONS AND GROUND IMPROVEMENT	3-0-0	PG
ADVANCED ROCK MECHANICS	3-0-0	PG

GROUND IMPROVEMENT	3-0-2	UG
ENGG. GEOLOGY & SOIL MECHANICS	0-0-1	UG
GEOTECHNICAL ENGINEERING	0-0-2	UG
MAJOR PROJECT PART-I	0-0-12	PG
SPECIAL TOPICS IN ROCK ENGINEERING	3-0-0	PG
ADVANCED ROCK MECHANICS	3-0-0	UG
DESIGN CONCEPTS IN CIVIL ENGG.	0-1-0	UG

Awards & Distinctions

- "DAE Young Scientist Award" by the Board of Research in Nuclear Sciences (BRNS) at Bhabha Atomic Research Centre (BARC), Department of Atomic Energy (DAE), Government of India.
- "DST Young Scientist Award" by the Science and Engineering Research Council (SERC) at Department of Science and Technology (DST), Ministry of Science and Technology, Government of India.
- "DAAD Award" for study visits to Universität der Bundeswehr München (UniBW), Germany under faculty exchange programme by the Deutscher Akademischer Austausch Dienst, German Academic Exchange Programme
- "DAAD Award" for mentor visit to Leibniz Universität Hannover, Germany in the year 2013.

Society Membership, Certification & Training & Any Other Details

1. Life Member, Indian Geotechnical Society
2. Member, International Association of Protective Structures
3. Associate Member, American Society of Civil Engineers
4. Member, Institution of Civil Engineers, The British Geotechnical Association
5. Member of International Society of Soil Mechanics and Geotechnical Engineering
6. Member of International Society of Rock Mechanics

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
DHANYA C.T.	2011	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	University of Kerala; College of Engineering Trivandrum	2004
M.Tech.	Hydraulics and Water Resources Engineering	Indian Institute of Technology Madras	2006
Ph.D.	Water Resources Engineering	Indian Institute of Science Bangalore	2010

Research Areas and Highlights

Hydroclimatological modeling, Climate change impact in water resources, Nonlinear dynamics and chaos theory, Stochastic hydrology, Optimization in water resource systems, Data mining in hydrology, Water resources management

Experience

Aug 2010 - Nov 2011: Research Associate, Department of Civil Engineering, Indian Institute of Science Bangalore

Nov 2011 - Till date: Assistant Professor, Department of Civil Engineering, Indian Institute of Technology Delhi

Significant Publications

- C.T. Dhanya and D. Nagesh Kumar (2013), Predictability and Chaotic Nature of Daily Streamflow, Australian Journal of Water Resources, Engineers Australia , Journal , International
- C.T. Dhanya and D. Nagesh Kumar (2011), Predictive uncertainty of chaotic daily stream flow using (wavelet networks, Water Resources Research, American Geophysical Union, 47 (6), W06507, doi: 10.1029/2010WR010173. , Journal , International
- C.T. Dhanya and D. Nagesh Kumar (2010), Nonlinear Ensemble Prediction of a Chaotic Daily Rainfall, Advances in Water Resources, 33 (3), 327-347. , Journal , International
- C.T. Dhanya and D. Nagesh Kumar (2009), Data Mining for Evolution of Association Rules for Droughts and Floods in India using Climate Inputs, Journal of Geophysical Research - Atmospheres, American Geophysical Union, 114, doi:10.1029/2008JD010485. , Journal , International
- C.T. Dhanya and D. Nagesh Kumar, Multivariate nonlinear ensemble prediction of daily chaotic rainfall with climate inputs, Journal of Hydrology, doi: 10.1016/j.jhydrol.2011.04.009, 2011. , Journal , International
- C.T. Dhanya and D. Nagesh Kumar, Data Mining for Evolving Fuzzy Association Rules for Predicting Monsoon Rainfall of India, Journal of Intelligent Systems, Freund & Pettman, UK, vol. 18, no. 3, pp. 193-209, 2009. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	9	9
M.Tech.	Completed	2	2
M.Tech.	In Progress	1	1
Ph.D.	In Progress	6	6

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	1	1460000
Consultancy	2	9500000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	7	7
Journal	National	2	2
Conference	International	4	4
Conference	National	2	2

Patent & IPR

Course Name	L-T-P	Course Belongs To
WATER RESOURCES MANAGEMENT	3-1-0	UG
HYDROLOGY AND HYDRAULICS	1-0-2	UG
WATER MANAGEMENT	3-0-0	PG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-1	UG

Awards & Distinctions

- Outstanding Reviewer Award by American Society of Civil Engineering
- Sapna Laroia Memorial Fellowship (Young Faculty Fellowship) by IIT Delhi
- Prof. N. S. Govinda Rao Gold Medal for Best Ph.D Thesis, Indian Institute of Science Bangalore

Society Membership, Certification & Training & Any Other Details

- Reviewer of international journals: Journal of Hydrology (Scimedirect), Journal of Earth System Science (Springer), Journal of Hydrologic Engineering (American Society of Civil Engg., ASCE), Water Re

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
ABHIJIT GANGULI	2011	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Bengal Engineering & Science University	1999
M.Tech.	Structural Engineering	IIT Bombay	2001
Ph.D.	Mechanical Engineering	Universite Libre de Bruxelles, Belgium	2005

Research Areas and Highlights

Non-destructive Evaluation, Structural Dynamics and Control Systems, Mechatronics, Ultrasonics, Solid Mechanics.

Experience

1. Associate Research Scientist, Northeastern University Boston USA, 2008-2011.
2. Research Associate, University of Massachusetts, Amherst, USA, 2006-2008
3. Ph.D Student, Universite Libre de Bruxelles, Belgium 2002-2005.
4. Assistant Systems Engineer, TATA Consultancy Services, Mumbai, 2001
5. MTech student, IIT Bombay, 1999-2001.

Significant Publications

- A. Ganguli , A. Deraemaekar, M. Horodincea, A. Preumont. Active damping of chatter in machine tools – demonstration with a “hardware in the loop” simulator, Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers, vol 219, 359-369, 2005. , Journal , International
- A. Ganguli , A. Deraemaekar, I. Romanescu, M. Horodincea, A. Preumont. Simulation and active control of chatter in milling via a mechatronic simulator, Journal of Vibration and Control, vol. 12(8), 817-848, 2006. , Journal , International
- A. Ganguli , C. M. Rappaport, D. Abramo, S. Wadia-Fascetti, Synthetic Aperture Imaging for Flaw Detection in a Concrete Medium, NDT&E International, vol 45, no. 1, 2012. , Journal , International
- A. Ganguli , R. X. Gao, K. Liang, J. Jundt, Experimental investigation of efficient ultrasonic focusing in attenuative solids, IEEE Transactions on Instrumentation and Measurement, vol. 59(9), 2261-2271, 2010. , Journal , International
- A. Ganguli , A. Deraemaekar, A. Preumont, Regenerative chatter reduction by active damping control, Journal of Sound and Vibration, vol 300, 2007. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
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B.Tech.	Completed	6	6
M.Tech.	Completed	1	1
M.Tech.	In Progress	3	3
Ph.D.	In Progress	2	2

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	2	2000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	7	3
Conference	International	12	8

Patent & IPR

Course Name	L-T-P	Course Belongs To
SOLID MECHANICS IN STRUCTURAL ENGG.	3-0-0	PG
MATHEMATICAL AND NUMERICAL METHODS	2-1-0	PG
STRUCTURAL ANALYSIS I	3-1-2	UG
CONSTRUCTION MATERIALS & INFORMATION TECH. LAB	0-0-6	PG

Awards & Distinctions

- Kusuma Outstanding Young Faculty Fellowship Award, IIT Delhi, 2011.

Natwarlal Harilal Bhagawati charity trust prize for outstanding performance in Civil Engineering, IIT Bombay, 2001.

Society Membership, Certification & Training & Any Other Details

- IEEE

Brief CV

Personal and Educational Details



Employee Name	@IITD Since	Department & Designation
GAZALA HABIB	2008	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	NIT-Raipur Chattisgarh	1997
M.Tech.	Environmental Engineering	VNIT- Nagpur	2000
Ph.D.	Air pollution/Environmental Engineering	Indian Institute of Technology Bombay	2006

Research Areas and Highlights

Source and Atmospheric Aerosol Characterization, Regional Air Quality, Health, Source Apportionment Modelling, Climate Effect and Climate Modelling.

Experience

Significant Publications

1. Venkataraman, C., A.D. Sagar, G. Habib, N. Lam , K.R. Smith (2010), The Indian National Initiative for Advanced Biomass Cookstoves: The benefits of clean combustion, Energy for Sustainable Development 14, 63–72. , Journal , International
2. Stone, E. A., J. J. Schauer, B. B. Pradhan, P. Man Dangol, G. Habib, C. Venkataraman (2010). Characterization of emissions from South Asian biofuels and application to source apportionment of carbonaceous aerosol in the Himalayas, J. of Geophysical Research, 115, D06301, doi:10.1029/2009JD011881. , Journal , International
3. Ranjit Bahadur, Gazala Habib, Lynn M. Russell (2009), Climatology of PM_{2.5} organic carbon concentrations from a review of ground-based atmospheric measurements by evolved gas analysis, Atmospheric Environment, 43, 1591–1602. , Journal , International
4. G. Habib, C. Venkataraman, T. C. Bond, J. J. Schauer (2008), Chemical, Microphysical and Optical Properties of Primary Particles from the Combustion of Biomass Fuels, Environmental Science and Technology, 42, 8829–8834. , Journal , International
5. G. Habib, C. Venkataraman, I. Chiappello, S. Ramachandran, O. Boucher, M.S. Reddy (2006). Seasonal and interannual variability in absorbing aerosols over India derived from TOMS: Relationship to regional meteorology and emissions, Atmospheric Environment, 40, 1909-1921. , Journal , International
6. C. Venkataraman, G. Habib, J. F. Leon, B. Crouzille, D. G. Streets, M. S. Reddy, O. Boucher, M. Shrivastava, D. Kadamba (2006). Emissions from biomass burning in India: Integrating inventory approaches with high-resolution MODIS active fire and land cover data, Global Biogeochemical Cycle, 20, GB2013, doi:10.1029/2005GB002547. , Journal , International
7. Bond T. C., G. Habib, R. W. Bergstrom (2006). Limitations in the Enhancement of Visible Light Absorption due to Mixing State, Journal of Geophysical Research, 111, D20211, doi:10.1029/2006JD007315. , Journal , International
8. C. Venkataraman, G. Habib, A. Eiguren-Fernandez, A.H. Miguel and S.K. Friedlander (2005). Residential biofuels in South Asia: carbonaceous aerosol emissions and climate impacts, Science, 307, 1454-1456. , Journal , International
9. Mudway, I. S., S. T. Duggan, C. Venkataraman, G. Habib, F. J. Kelly, J. Grigg (2005), Combustion of dried animal dung as biofuel results in the generation of highly redox active fine particulates Particle and Fibre Toxicology, 2(6) doi:10.1186/1743-8977-2-6. , Journal , International
10. G. Habib, C. Venkataraman, M. Shrivastava, R. Banerjee, J. Stehr and R. Dickerson (2004). New methodology to estimate biofuel consumption for cooking: Atmospheric emissions of black carbon and sulfur dioxide from India, Global Biogeochemical Cycles, 18, GB3007,

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	5	5
M.Tech.	Completed	8	8
M.Tech.	In Progress	4	4
Ph.D.	In Progress	6	6

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	2	3500000
Consultancy	3	300000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	10	10
Conference	National	8	8
Conference	International	14	14

Patent & IPR

Course Name	L-T-P	Course Belongs To
ELEMENTS OF SURVEYING	2-0-2	UG
POLLUTION PREVENTION AND CONTROL	3-0-0	UG
ADVANCED WATER AND WASTEWATER ENGINEERING	3-0-2	UG
INDUSTRIAL WASTE MANAGEMENT	3-0-0	UG

Awards & Distinctions

- Young scientist DST fast track award, 2010.
Grant 25.05 Lakhs

Society Membership, Certification & Training & Any Other Details

- American Association for Aerosol Research

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
SUPRATIC GUPTA	2003	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Madras	1990
M.Tech.	Structural Engineering	Nagoya University	1993
Ph.D.	Structural Engineering	Nagoya University, Japan	1997

Research Areas and Highlights

Structural Engineering, FEM Analysis, constitutive Modelling of Material & Structures, Concrete Mechanics, Self Compacting and High Performance Concrete. Utilization of marble and granite powder in concrete. Bamboo and bamcrete structures.

Experience

April 1996 - march 1999 - Research Associate, Nagoya Institute of technology

April 1999 - Jan 2003 Assistant Professor, Gunma University

Jan 2003- present Assistant Professor, IIT Delhi

Significant Publications

- Nasir S., Gupta S., Umehara H. and Hirasawa I. "An Efficient Method for the Construction of Bridge Piers", Engineering Structures, Elsevier Science Publications, Vol-23 (9) , pp. 1142-1151,2001 , Journal , International
- 2. Gupta, S and Tanabe, T., "Three Dimensional Analysis of Reinforced Concrete Members by Unified Concrete Plasticity Model", Journal of Materials, Concrete Structures and Pavements, JSCE, No. 592/V-39, pp. 169-180, May, 1998 , Journal , International
- Gupta S., Pusa V., Murumi K., and Anuj. Efficiency Factor of Fly Ash for Prediction of Compressive Strength of Concrete, Cement and Concrete Research (Submitted). , Journal , International
- Anuj, Murumi K., Tiwari A., and Gupta S. Importance of Moisture Correction in Fine Powder Materials for Concrete, Cement and Concrete Research (Submitted). , Journal , International
- Anuj, Murumi K., and Gupta S. Rheological Properties of Self Compacting Concrete using Marble and Granite Powder , Cement and Concrete Research (Under Preparation). , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	40	12
M.Tech.	Completed	40	15
Ph.D.	In Progress	5	5

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
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Sponsored Research Projects	6	82769200
Consultancy	396	69653747

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	14	1
Conference	International	34	4
Conference	National	8	0

Patent & IPR

- Unable to file and in fact forgoing them due to conflict with IIT. IIT is not responsibly answering my queries.

Course Name	L-T-P	Course Belongs To
ADVANCED DESIGN OF BRIDGES	2-1-0	PG
CONCRETE TECHNOLOGY AND MATERIALS	3-0-0	UG
DESIGN OF STEEL STRUCTURES	3-1-2	UG
CONCRETE MATERIAL & DESIGN	3-1-4	UG
CIVIL ENGG. MATERIALS	3-0-0	PG
CONSTRUCTION ENGINEERING PRACTICES	3-0-0	PG
INTRODUCTION TO CIVIL ENGINEERING	0-0-4	UG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-4	UG
INDEPENDENT STUDY	0-3-0	PG
PRACTICAL TRAINING	0-0-0	UG
STRUCTURAL ANALYSIS I	3-1-2	UG

Awards & Distinctions

- Best Group Award for Surveying Camp in IIT Madras.
- Prize of best paper and presentation from JSCE Chubu Chapter, 1997
- Best Presentation Award for JCI, 1997 Conference.
- Japanese Government Monbusho fellowship, 1991-1993
- Rotary Scholarship, 1994-1996
- Research grant for excellent young researcher by Japanese Government (2.2 million Japanese yen), 1999 April

Society Membership, Certification & Training & Any Other Details

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
ARUN KUMAR	2010	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil Engineering	IIT Kanpur India	2001
M.Tech.	Water treatment, Environmental Engineering	IIT Kanpur India	2004
Ph.D.	Water treatment, emerging contaminant, health risk assessment, environmental decision-making	Drexel University Philadelphia USA	2008

Research Areas and Highlights

Human Health Risk Assessment, Nanoparticles, Water Treatment, Decision-making.

Experience

1. Visiting Research Associate; Civil and Environmental Engineering, Michigan State University, East Lansing (USA); April 2009-June 2010; Adviser: Dr. Irene Xagorarakis
2. Visiting Research Faculty; Civil, Architectural and Environmental Engineering, Drexel University, Philadelphia (USA); January 2009-March 2009; Advisers: Dr. Patrick Gurian and Dr. Mira S. Olson
3. Project Associate; Environmental Engineering and Management Programme, IIT Kanpur (INDIA); Aug 2001-Aug 2002; Adviser: Dr. Vinod Tare

Significant Publications

- Kumar, A. , Baranidharan, S., Das, P., Singh, A. P., and Ananthitha, A. "Environmental Impacts of Nanoparticles: Issues for future directions"(in press). , Books Chapter , International
- (Poster) Sundaram, B. and A. Kumar. 2nd Water Research Conf. Singapore Feb 2013. , Conference , International
- (Poster) Singh, D. and A. Kumar. 2nd Water Research Conf. Singapore Feb 2013. , Conference , International
- Teng, J., A. Kumar , H. Zhang, M.S. Olson, and P.L. Gurian. Determination of Critical Rainfall Events for Quantitative Microbial Risk Assessment of Land-applied Soil Amendments". J. Hydrolog. Engg., doi:10.1061/(ASCE)HE.1943-5584.0000444 (2012). , Journal , International
- Kumar, A. "Making a Case for Human Health Risk-based Ranking Nanoparticles in Water for Monitoring Purposes". Environ. Sci. Technol. Viewpoint. DOI: 10.1021/es301507j (2012)[Citation=2] , Journal , International
- Kumar, P., Kumar, A. , and Lead, J.R. "Nanoparticles in Indian Environment: Knowns, unknowns and awareness". Environ. Sci. Technol. Viewpoint. (2012) , Journal , International
- Sundaram, B. and A. Kumar. "Engineered Nanomaterials-based Pollution in India". Curr. Sci. 110(10) (2012) . , Journal , International
- Teng, J., A. Kumar , P.L. Gurian, and M.S. Olson. "A Spreadsheet-Based Site Specific Risk Assessment Tool for Land-Applied Biosolids" The Open Env. Engg. J. 6(7-13). (2013). , Journal , International

- Galada, H.C., Rostad, N., Gurian, P. L., Olson, M. S., Teng, J., A. Kumar, Wardell, M., Eggers, S., Casman, E., and Richter, E. "Development and Assessment of Failure Scenarios for Biosolids Land Application Risk Assessment". Wat. Env. Res. 85(2):141-150.2013. , Journal , International
- Khanna, I. and A. Kumar Learned Discussion on "Including nanoparticles mixtures in human health risk assessment". IEAM (accepted). , Journal , International
- Singh, D. and Kumar, A. Identifying Knowledge Gaps in Assessing Health Risks due to Exposures of Nanoparticles from Contaminated Edible Plants. Springer proceeding volume *Management of Water, Energy and Bio-resources in the Era of Climate Change: Emerging Issues and Challenges . , Journal , International
- Chawla, J. and Kumar, A. Towards reducing toxicity of carbon nanotubes and fullerenes using surface modification strategy. Springer proceeding volume *Management of Water, Energy and Bio-resources in the Era of Climate Change: Emerging Issues and Challenges . , Journal , International
- (Oral)Ritika, A. Kumar, Mittal,A.K., and Ganguli, A.K. National Seminar Clean Water and Health April6-7th,2013, New Delhi. , Conference , National
- Sundaram, B. and A. Kumar. "Nanoparticles in Indian Water: An Emerging Contaminant Needing Regulatory Considerations ". NEBIO. Special Online Issue (2013) , Conference , National
- (Oral)Sejwal, K. and A. Kumar."Understanding the Role of Nanotechnology in Water Treatment and its Implication" National Conference- Relevance of Nanotechnology in Biology, New Delhi, Mar 2013. , Conference , National
- Ravindran, S., Pariyath, R.V., A. Kumar, and Nema, A.K. "Health Risk Estimation of Pesticides Exposure from Ganges Water". NEBIO. Special Online Issue (2013) . , Journal , National
- Sundaram, B. and A. Kumar. "Engineered Nanomaterials-based Pollution in India". Curr. Sci. 110(10) (2012) . , Journal , National
- Galada, H.C., Rostad, N., Gurian, P. L., Olson, M. S., Teng, J., A. Kumar, Wardell, M., Eggers, S., Casman, E., and Richter, E. "Development and Assessment of Failure Scenarios for Biosolids Land Application Risk Assessment". Wat. Env. Res. 85(2):141-150.2013. , Journal , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
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Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	5	13150000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	19	16
Journal	National	4	4
Books Chapter	International	1	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
MAJOR PROJECT PART-II	0-0-24	PG
WATER AND WASTE-WATER TREATMENT PROCESSES	3-0-0	PG
ENVIRONMENTAL ENGINEERING	3-0-4	UG
ENVIRONMENTAL RISK ASSESSMENT	3-0-0	PG

Awards & Distinctions

- Graduate Student Research Award from Department of Civil, Architectural, and Environmental Engineering, College of Engineering, Drexel University, U.S.A. (2007).

- Third Prize in Pennsylvania Section of the American Water Works Association Conference's Student-Young Professional Poster Presentation, Kumar, A., P.L. Gurian, R. H. Bucciarelli-Tieger. "Development
- George Hill, Jr. Fellowship from Department of Civil, Architectural, and Environmental Engineering, College of Engineering, Drexel University, U.S.A. (2005).

Society Membership, Certification & Training & Any Other Details

- Society of Risk Analysis
- American Water Works Association

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
J. UMA MAHESWARI	2008	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
B.Tech.	Civil & Structural Engineering	Annamalai University	1998
M.Tech.	Structural Engineering	Annamalai University	2000
Ph.D.	Construction Project Management	Indian Institute of Technology Madras	2006

Research Areas and Highlights

Design Management, Automation in Design and Construction, Planning for Fast-track and Concurrent Engineering Projects, Matrix based planning tools.

Experience

2 years as Young Scientist at IIT Madras prior to Assistant Professor, IIT Delhi

Significant Publications

- J. Uma Maheswari & Ratnesh Kumar, Project Scheduling with the Workers Skill Level, Second Project Management Research and Academic Conference, IIT Madras, India, 31st Jan to 2nd Feb. , Conference , International
- Purva Mujumdar & J. Uma Maheswari, A Design Iteration Framework for Construction Projects, RICS COBRA conference, 10-12 Sep, New Delhi, India. , Conference , International
- Amarnath, C B, Anil Sawhney & J. Uma Maheswari, Cloud Computing to enhance collaboration, coordination and communication in the construction industry,(WICT) World Congress on Information and Communication Technologies, 12-14 Dec, University of Mumbai, India. , Conference , International
- Anil Sawhney & J. Uma Maheswari, Design Coordination Using Cloud-based Smart Building Element Models, IJCISIM, International Journal of Computer Information Systems and Industrial Management Applications, Vol 5, 2013, 445-453. , Journal , International
- Naseef Ummer, J. Uma Maheswari, Vasant A. Matsagar & Koshy Varghese, Factors Influencing Design Iteration with a Focus on Project Duration, ASCE Journal of Management in Engineering, Posted Ahead of Print on 12 Jan 2013 , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	In Progress	3	3

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	2	2894000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	5	2
Conference	International	12	5
Books Edited	International	1	0

Patent & IPR

Course Name	L-T-P	Course Belongs To
CONSTRUCTION AND CONTRACT MANAGEMENT	3-0-0	PG
MANAGEMENT OF QUALITY AND SAFETY IN CONSTRUCTION	2-1-0	PG
SEMINAR	0-0-6	PG

Awards & Distinctions

Society Membership, Certification & Training & Any Other Details

- Associate Member, ASCE
Member, PMI

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
BAPPADITYA MANNA	2010	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Bengal Engineering College (D.U.), Shibpur	2001
M.Tech.	Geotechnical Engineering	Indian Institute of Technology Kanpur	2005
Ph.D.	Geotechnical Engineering	Indian Institute of Technology Kharagpur	2009

Research Areas and Highlights

- (1) Effect of Soil-Pile Separation on the Nonlinear Behaviour of Pile Foundations under Machine Induced Vibration : Dynamic testing on pile foundation in the field to determine the frequency-amplitude response and to measure soil-pile separation under different magnitude of dynamic loading and analyses of dynamic test data by continuum approach.
- (2) Dynamic Response of Pile Foundations in Nonlinear Soil Media with Non-Reflective Boundary under Vertical Excitation of Rotating Machine : Development of a new model of the boundary zone with a non-reflective boundary to compute the impedances of soil-pile system considering different boundary zone parameters.
- (3) Seismic Response and Deformation Characteristics of Nailed Soil Slopes - Shaking Table Testing and Analysis : Prediction of failure pattern of nailed soil slope and distribution of nail forces for various slope angles under different peak ground accelerations using Shaking Table test and finite element analysis.

Experience

- Teaching Experience - (i) Worked as Assistant Professor in Department of Civil Engineering, National Institute of Technology Rourkela from March 2009 to May 2010.
- (ii) Has been working as Assistant Professor in Department of Civil Engineering, Indian Institute of Technology Delhi since May 2010.

Significant Publications

- Manna, B. (2012), Nonlinear Response of Pile Foundations under Horizontal Excitation Acting below the C.G. of the Pile Cap-Loading System, The Seventh Asian Young Geotechnical Engineers Conference (7AYGEC), 12 - 14 September 2012, Japan. pp. 193 – 198. , Conference , International
- Sahoo, S., Manna, B. and Sharma, K. G. (2013). Stability analysis of steep nailed slopes in seismic conditions: numerical approach". In Proceedings 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos Island, Greece, June 12-14. , Conference , International
- 41. Sahoo, S., Manna, B. and Sharma, K. G. (2013). Slope stability analysis of an island surrounded by river under earthquake condition. Fourth Indian Young Geotechnical Engineers Conference, Chennai, India, May 17-18, pp. 263 - 267. , Conference , International
- Sahoo, S., Manna, B. and Sharma, K. G. (2013). Stability analysis of steep nailed slopes in seismic conditions: numerical approach". In Proceedings 4th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos Island, Greece, June 12-14. , Conference , International
- Zodinpuui, R, Manna, B., and Sharma, K. G. (2013). Experimental Study on the performance of Nailed Soil Slope under Surcharge Loads, Foundation and Soft Ground Engineering Conference, Thu Dau Mot University, Vietnam, June 5 –6, pp. 263 - 267. , Conference , International
- Biswas, S. and Manna, B. (2013), Three Dimensional Finite Element Nonlinear Dynamic Analysis of Full-Scale Piles under Vertical Excitations, 18th

- International Conference for Soil Mechanics and Geotechnical Engineering, Paris, France, September 2-5, 2013. , Conference , International
- Sahoo, S., Manna, B., and Sharma, K. G. (2014). Stability analysis of steep nailed slopes under seismic condition using 3-D finite element method. Geo-Congress (ASCE), Atlanta, Georgia, USA, February 23-26. , Conference , International
 - Biswas, S., Manna, B. (2014). A Study on Nonlinear Response of Full-Scale Pile under Machine Induced Coupled Vibration. Geo-Congress (ASCE), Atlanta, Georgia, USA, February 23-26. , Conference , International
 - Vaidyan, T. K. K., Manna, B., and Shahu, J. T. (2012). Response of Pile Foundations in Liquefiable Soils under Earthquake Loading, 2nd International Conference on Performance Based Design in Earthquake Geotechnical Engineering, 28 - 30 May, 2012, Taormina, Italy Paper No. 11.03, pp. 1211 – 1220 , Conference , International
 - Das, S. K., Manna, B., and Baidya, D. K. (2011), Prediction of the Separation Length at Soil-Pile Interface under Vertical Vibration using Artificial Neural Network Approach, 14th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, Hong Kong, China. , Conference , International
 - Das, S. K., Manna, B., and Baidya, D. K. (2011), Prediction of the dynamic soil-pile interaction under coupled vibration using artificial neural network approach, Geo-Frontiers 2011: Advances in Geotechnical Engineering, Foundation and ground Improvement Section (Geotechnical Special Publications 211, ASCE), Dallas, Texas, USA, pp. 1 – 10. , Conference , International
 - Manna, B., and Baidya, D. K. (2010), Nonlinear Dynamic Behavior of Pile Foundations in Horizontal Vibration, 2nd GeoShanghai International Conference: Dynamic Soil-Structure Interaction – Part 1 (Geotechnical Special Publications No. 201, ASCE), Shanghai, China, pp. 50 – 55. , Conference , International
 - Das, S. K., Manna, B., and Baidya, D. K. (2010), An Artificial Neural Network Approach for Prediction of Dynamic Pile-Soil-Pile Interaction under Vertical Motion, GeoFlorida 2010: Advances in Analysis, Modeling, & Design (Geotechnical Special Publication No. 199, ASCE), Proc. of the GeoFlorida 2010 Conference, Florida, USA, pp. 1422 – 1431. , Conference , International
 - Manna, B., and Baidya, D. K. (2010), Nonlinear Soil-Pile Interaction under Vertical and Coupled Motion, 5th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, San Diego, California, Paper No. 5.05a, Abstract Volume ISBN No: 1-887-0009-16-7, Proceedings CD ISBN No: 1-8870009-15-9. , Conference , International
 - Manna, B., and Baidya, D. K. (2009), Nonlinear Vertical Dynamic Response of Pile Groups, 17th International Conference on Soil Mechanics and Geotechnical Engineering, Egypt, Vol. 1, pp. 1128 – 1131. , Conference , International
 - Manna, B., Baidya, D. K., and Prusty, S. S. K. (2013), Prediction of Boundary Zone Parameters and Soil-Pile Separation under Horizontal and Rocking Vibrations, International Journal of Geotechnical Engineering, Ross Publishing Inc., USA, Vol. 7, Issue 1, pp. 45 - 54. , Journal , International
 - Kumar, A., Manna, B. and Rao, K. S., (2013), Dynamic Response of Footing Resting on Rock Foundation under Vertical Vibration, Indian Geotechnical Journal, Springer, Vol. 43, Issue 1, pp. 83 - 95. , Journal , International
 - Biswas, S., Manna, B., and S. S. Choudhary. (2013), Prediction of Nonlinear Characteristics of Soil-Pile System under Vertical Vibration. Geomechanics and Engineering, An International Journal, Techno Press., Vol. 5, No. 3, pp. 223 - 240. , Journal , International
 - Kumar, A., Manna, B. and Rao, K. S., (2013), Dynamic Response of Footing Resting on Rock Foundation under Vertical Vibration, Indian Geotechnical Journal, Springer, Vol. 43, Issue 1, pp. 83 - 95. , Journal , International
 - Rawat, S., Zodinpuii, R., Manna, B. and Sharma, K. G. (2013). Investigation on Failure Mechanism of Soil-Nailed Slopes under Surcharge Loading: Testing and Analysis, Geomechanics and Geoenvironment, An International Journal, Taylor & Francis, Vol. 9, Issue 1, pp. 18 - 35. , Journal , International
 - Biswas, S., Choudhary, S. S., Manna, B., and Baidya, D. K., (2013). Prediction of Nonlinear Parameters of Group Piles under Machine Induced Coupled Vibration, International Journal of Geoenvironment Case Histories, ISSMGE., Vol. 3, Issue 1, pp. 10 - 23. , Journal , International
 - Manna, B., and Baidya, D. K. (2012). Effect of Horizontal Excitation acting at Different Location of Pile Cap-Loading System on the Nonlinear Coupled Response of Pile Foundations, Geotechnical Testing Journal, ASTM International, USA, Vol. 35, Issue 6, pp. 1 -15. , Journal , International
 - Manna, B., and Baidya, D. K. Effect of Horizontal Excitation acting at Different Location of Pile Cap-Loading System on the Nonlinear Coupled Response of Pile Foundations, Geotechnical Testing Journal, ASTM International, USA, Vol. 35, Issue 6, pp. 1 -15. , Journal , International
 - Manna, B., and Baidya, D. K. (2010), Nonlinear Dynamic Response of Piles under Horizontal Excitation, Journal of Geotechnical and

Geoenvironmental Engineering, ASCE, Vol. 136, No. 12, pp. 1600 – 1609. , Journal , International

- Manna, B., and Baidya, D. K. (2010), Nonlinear Dynamic Response of Pile Foundations under Vertical Vibration, Soil Dynamics and Earthquake Engineering, Elsevier, Vol. 30, No. 6, pp. 456 – 469. , Journal , International
- Manna, B., and Baidya, D. K. (2009), Vertical Vibration of Full-Scale Pile - an Analytical and Experimental Study, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Vol. 135, No. 10, pp. 1452 - 1461. , Journal , International
- Manna, B., and Baidya, D. K. (2009), Dynamic Vertical Response of Model Piles - Experimental and Analytical Investigations, International Journal of Geotechnical Engineering, Ross Publishing Inc., Vol. 3, Issue. 2, pp. 271 - 287. , Journal , International
- Sundaram, R., Basha, B. M., Manna, B., and Ayothiraman, R. (2011). Proceedings of Third Young Geotechnical Engineers Conference (3IYGEC), March 25 - 26, Central Road Research Institute, New Delhi, India. , Books Edited , National
- Sahoo, S., Manna, B. and Sharma, K. G. (2013). Slope stability analysis of an island surrounded by river under earthquake condition. Fourth Indian Young Geotechnical Engineers Conference (4IYGEC), Chennai, India, May 17-18, pp. 237 - 240. , Conference , National
- Sahoo, S., Manna, B. and Sharma, K. G. (2013). Slope stability analysis of an island surrounded by river under earthquake condition. Fourth Indian Young Geotechnical Engineers Conference (4IYGEC), Chennai, India, May 17-18, pp. 237 - 240. , Conference , National

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	21	4
B.Tech.	In Progress	2	4
M.Tech.	Completed	10	4
M.Tech.	In Progress	4	4
Ph.D.	In Progress	4	4

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	4	6700000
Consultancy	8	53817890

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	11	5
Journal	National	2	5
Conference	International	11	5
Conference	National	10	5
Books Edited	National	1	5

Patent & IPR

Course Name	L-T-P	Course Belongs To
FOUNDATION ENGINEERING	3-0-0	PG
SLOPE STABILIGY AND EARTH DAMS	3-0-0	PG
SOIL ENGINEERING LABORATORY	0-0-3	PG
GEOENVIRONMENTAL AND GEOTECHNICAL ENGG.LAB.	0-0-3	PG
GEOTECHNICAL ENGINEERING	0-3-0	UG
ENGG. GEOLOGY & SOIL MECHANICS	0-0-3	UG
DESIGN CONCEPTS IN CIVIL ENGG.	0-0-2	UG

Awards & Distinctions

- ISTE-SGSITS National Award 2012 – 2013 for Young Teachers (below 35 years) of Engineering Colleges, sponsored by Indian Society For Technical Education.
- IEI Young Engineers Award 2012 - 2013 in Civil Engineering Discipline, sponsored by The Institute of Engineers (India).
- Best Paper Award in the Area of Deep Foundation for the Year 2011 sponsored by Indian Geotechnical Society, during Indian Geotechnical Conference 2012, New Delhi, India.
- DAAD Fellowship 2012 for "Research Stay" at Technical University of Dresden, Dresden, Germany.
- DAE Research Award for Young Scientists 2012, sponsored by Department of Atomic Energy (DAE) at Board of Research in Nuclear Sciences (BRNS), Government of India.
- National Nominated Candidate of the Year 2012 for Representing in the 7th Asian Young Geotechnical Engineering Conference in Japan, sponsored by Indian Geotechnical Society (IGS), New Delhi, India.
- DST Young Scientist Award 2011, sponsored by The Science and Engineering Research Council (SERC) at Department of Science and Technology (DST), Ministry of Science and Technology, Government of India.
- Outstanding Young Faculty Fellow in the Area of Engineering for the Year 2011, awarded by the Indian Institute of Technology (IIT) Delhi (sponsored by Kusuma Trust, Gibraltar Fellowship).
- Endeavour Research Fellowship – 2010, Post Doctoral Research, University of Wollongong, Australia.

Society Membership, Certification & Training & Any Other Details

- Member, American Society of Civil Engineers (M.ASCE, ID: 416084)
- Deep Foundations Institute, USA (DFI Member ID: 15205)
- International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE Membership No: IND110102)
- The Indian Society for Technical Education (Life Member, LM - 81151)
- Institution of Engineers (Member, M-145110-8)
- Indian Geotechnical Society (Life Member, Membership ID: LM 2595)
- Indian Society of Earthquake Technology (Life Member, LM 1524)
- Indian Society for Rock Mechanics and Tunneling Technology, ISRMTT (Life Member, LM - 1923)
- The Indian Science Congress Association (Life Member, No: L19340)
- The Indian Road Congress (Life Membership No: LM-38737)
- Indian Geotechnical Society, Delhi Chapter (Life Member, LM-930)

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
DIPTI RANJAN SAHOO	2010	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	Indira Gandhi Institute of Technology, Sarang/ Utkal University, Odisha	2001
M.Tech.	Structural Engineering	Indian Institute of Technology (IIT) Kanpur	2004
Ph.D.	Structural Engineering	Indian Institute of Technology (IIT) Kanpur	2008

Research Areas and Highlights

Earthquake Engineering/Structural Dynamics, Performance Based Seismic Design of structures, Seismic strengthening and retrofitting, Large-Scale seismic testing, Passive energy dissipation devices, Steel fiber reinforced concrete

Experience

-Assistant Professor, Department of Civil Engineering, Indian Institute of Technology Delhi(Dec. 2010-Till date)

-Assistant Professor, School of Infrastructure, Indian Institute of Technology (IIT) Bhubaneswar (Jun.-Dec., 2010)

-Post-doctoral Fellow, University of Texas at Arlington, USA (2008-2010)

Significant Publications

- Taraithia, S. S., Sahoo, D. R., and Madan, A. (2013), "Experimental study of combined yielding metallic passive devices for enhanced energy dissipation of structures", Pacific Structural Steel Conference, October 8-11, Singapore. , Conference , International
- Pandikkadavath, M. S., and Sahoo, D. R., (2013), "Seismic Performance of Steel Frame Structures with Hybrid Concentrically Brace Systems", International Conference on Rehabilitation and Restoration of Structures, February 13-16, Chennai, India. , Conference , International
- Sahoo, D.R., and Chao, S.H., (2012), "Performance-based plastic design (PBPD) of high-rise buckling-restrained braced frames", Paper No. 4027, 15th World Conference on Earthquake Engineering (15WCEE), September 24-28, Lisbon, Portugal. , Conference , International
- Chao, S. -H., Karki, N. B., and Sahoo, D. R.,(2013), "Seismic Behavior of Steel Buildings with Hybrid Braced Frames", Journal of Structural Engineering (ASCE), Vol. 139, No. 6. June, 2013, pp. 1019-1032. , Journal , International
- Sahoo, D.R., Flores, C.A. and Chao, S.H., (2013), "Discussion on behavior of steel fiber-reinforced concrete deep beams with large opening- Authors' Closure ", ACI Structural Journal, V. 110, No. 1, pp. 153-155. , Journal , International
- Sahoo, D. R., and Rai, D. C., (2013), "Design and evaluation of seismic strengthening techniques for RC buildings with soft-story", Engineering Structures, Vol. 56, No. 11, pp. 1933-1944. , Journal , International
- Sahoo, D. R., and Sharma, A., (2013), "Effect of Steel Fiber Content on Behavior on Concrete Beams with and without Shear Stirrups", ACI-Structural Journal, American Concrete Institute. (In press) , Journal , International
- Ghowsi, A. F., and Sahoo, D. R., (2013), "Seismic performance of buckling-restrained braced frames with varying beam-column connections", International Journal of Steel Structures, Vol. 13, No. 4, pp. , Journal , International
- Sahoo, D. R., Flores, C. A. and Chao, S. -H., (2012), "Behavior of Steel Fibers Reinforced Concrete Deep Beams with Openings ", ACI-Structural Journal, Vol. 109, No. 2, pp. 193-204. , Journal , International
- Chao, S. -H., Cho, J. -S., Karki, N. B., Sahoo, D. R. and Yazdani, N., (2011), "FRC Performance Comparison: Direct Tensile Test, Beam-type

Bending Test and Round-panel Test", ACI Special Publication 276-Durability Enhancements in Concrete with Fiber Reinforcement, , Vol. 276, pp. 1-20. , Journal , International

- Sahoo, D. R., and Chao, S. –H., (2010), "Performance-based Plastic Design of Buckling-restrained Braced Frames", Engineering Structures, Vol. 32, No. 9, pp. 2950-2958 , Journal , International
- Sahoo, D. R. and Rai, D. C., (2010), "Seismic strengthening of Non-ductile Reinforced Concrete Frames using Aluminum Shear Links as Energy-dissipation Devices", Engineering Structures, Vol. 32, No. 11, pp. 3548-3557 , Journal , International
- Sahoo, D. R. and Rai, D. C., (2009), "A Novel Technique Seismic Strengthening of RC Frame using Steel Caging and Aluminum Shear Yielding Device", Earthquake Spectra, Earthquake Engineering Research Institute (EERI), Vol. 25, No. 2, pp. 415-437. (, Journal , International
- Nagaprasad, P., Sahoo, D. R. and Rai, D. C., (2009), "Seismic Strengthening of RC Column by Steel Caging Technique", Earthquake Engineering and Structural Dynamics, John Wiley & Sons, Ltd., Vol. 38, No. 14, pp. 1563-1586. , Journal , International
- Jain, S., Rai, D. C. and Sahoo, D. R., (2008), "Post-Yield Cyclic Buckling Criteria for Aluminum Shear Panels", Journal of Applied Mechanics, American Society of Mechanical Engineers (ASME), Vol. 75, No. 2, pp. 021015 1-8. , Journal , International
- Sahoo, D. R. and Rai, D. C., (2007), "Battened Column under Cyclic Lateral Load", Thin-walled Structures, Elsevier Sciences, Vol. 45, No. 5, pp. 552-562. , Journal , International
- Kaushik, H. B., Dasgupta K., Sahoo, D. R. and Kharel G., (2006), "Performance of Structures during the Sikkim Earthquake of 14 February 2006", Current Science, Vol. 91, No. 4, pp. 449-455. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
B.Tech.	Completed	6	6
B.Tech.	In Progress	8	8
M.Tech.	Completed	1	1
M.Tech.	In Progress	4	4
Ph.D.	In Progress	6	6

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Sponsored Research Projects	3	10000000
Consultancy	24	10000000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	15	13
Conference	International	11	10
Conference	National	5	1
Books Chapter	International	1	1
Books Edited	International	1	1

Patent & IPR

Course Name	L-T-P	Course Belongs To
DESIGN OF STEEL STRUCTURES	2-1-0	PG
STRUCTURAL ENGG.LAB.	0-0-2	PG
STRUCTURAL ANALYSIS II	3-2-4	UG
DESIGN OF STEEL STRUCTURES	0-2-4	UG
CONCRETE MATERIAL & DESIGN	0-3-12	UG

Awards & Distinctions

- - INAE Young Associates, Indian National Academy of Engineering (INAE), India.

- INAE Young Engineer Award 2012, Indian National Academy of Engineering (INAE), India

- IEI Young Engineers Award
-
- Institute Assistantship (2001-08), Indian Institute of Technology Kanpur, India

- Indian Engineering Services (2002), Union Public Services Commission (UPSC), India

- Graduate Aptitude Tes

Society Membership, Certification & Training & Any Other Details

- - Member, American Concrete Institute (ACI), USA

- Life member, Indian Society of Earthquake Technology (ISET), India

- Affiliate member, Earthquake Engineering Research Institute (EERI), USA
- JOURNAL EDITORIAL BOARD

- Journal of Civil Engineering & Construction Technology,UK

MANUSCRIPT REVIEWER

- ACI Structural Journal, American Concrete Institute (ACI), USA

- Journal of

Brief CV



Personal and Educational Details

Employee Name	@IITD Since	Department & Designation
ARAVIND KRISHNA SWAMY	2012	Civil Engineering , Asstt. Professor

Degree	Specialization	Institute/University	Year
BE	Civil Engineering	National Institute of Engineering, Mysore. Affiliated to Visveswaraiah Technological University.	2001
M.Tech.	Transportation Systems Engineering	Indian Institute of Technology Kanpur, UP, India.	2005
Ph.D.	Constitutive Modeling of Pavement Materials and Pavement Engineering	University of New Hampshire, Durham, NH, USA.	2011

Research Areas and Highlights

Pavement design and modeling; Modeling of pavement systems; Evaluation of pavements; Maintenance and rehabilitation of pavements; Modeling behavior of pavement materials; Damage analysis using continuum approach; Rheology; Recycling of pavement materials; Airport engineering and systems; Optimization issues in pavement engineering

Experience

Assistant Professor, Indian Institute of Technology Delhi, Since Jan 2012.

Postdoctoral Fellow, University of New Mexico, June, 2011 – December, 2011.

Graduate Research/Teaching Assistant, University of New Hampshire, June, 2006 – May, 2011.

Senior Project Associate, Indian Institute of Technology Kanpur, September, 2005 – May, 2006.

Teaching Assistant, Indian Institute of Technology Kanpur, August, 2003 – June, 2005.

Site Engineer, Mott MacDonald, February, 2003 – July, 2003.

Significant Publications

- Tarefder, R.A., Bateman, D., and Swamy, A.K. (2013). "Comparison of fatigue failure criterion in flexural fatigue test." International Journal of Fatigue, 55, 213-219. , Journal , International
- Swamy, A.K. and Daniel, J.S. (2012). "Evaluating the Effect of Mode of Loading on Viscoelastic and Damage Properties of Asphalt Concrete." Transportation Research Record: Journal of the Transportation Research Board, 2296, 144-152. , Journal , International
- Swamy, A.K., Mitchell, L.F., Hall, S.J. and Daniel, J.S. (2011). "The Impact of RAP on the Volumetric, Stiffness, Strength and Low Temperature Properties of HMA." Journal of Materials in Civil Engineering, ASCE, 23(11), 1490-1497. , Journal , International
- Swamy, A.K. and Das, A. (2009). "Optimal Proportioning for Hot Recycled Mix Design Under Superpave Mix Design Consideration," Canadian Journal of Civil Engineering, 36(9), 1470-1477. , Journal , International

- Bhattacharjee, S., Swamy, A.K. and Daniel, J.S. (2009). "Application of the Elastic-Viscoelastic Correspondence Principle to Determine the Fatigue Endurance Limit of Hot Mix Asphalt." Transportation Research Record. 2126(1), 12-18. , Journal , International

Academic and Research Contributions

Research Guidance (Total Nos. & Last 5 Years Data)

Category	Guidance Status	Total Guidance	In last 5 years
Ph.D.	In Progress	6	6
M.Tech.	In Progress	1	1
B.Tech.	In Progress	5	5
M.Tech.	Completed	4	4
B.Tech.	Completed	7	7

Sponsored Research, Consultancy & Technology Development

Category	Total Projects	Total Value
Consultancy	5	2100000

Type of Publication	Level of Publication	Total Publication	In last 5 years
Journal	International	9	7
Conference	International	7	6
Conference	National	1	0

Patent & IPR

Course Name	L-T-P	Course Belongs To
TRANSPORTATION ENGINEERING II	3-1-0	UG
PAVEMENT MATERIALS AND CONSTRUCTION TECHNIQUES	2-0-2	PG
DESIGN & MAINTENANCE OF PAVEMENTS	3-0-2	PG

Awards & Distinctions

- Recipient of Outstanding Young Faculty Fellow in the area of Engineering
- Among the top 5% of the graduating class in undergraduate degree.
- Nominated for K.B. Woods award at Transportation Research Board 88th Annual Meeting, by chair of Transportation Research Board committee on design and construction group, 2009.
- Government of India fellowship for pursuing master's program.

Society Membership, Certification & Training & Any Other Details

- Selected for one week long training on inquiry-based instruction at Center for Excellence in Teaching and Learning (CETL), University of New Hampshire(2010).
- Member, Composite Pavements Committee, Indian Roads Congress.