ANNUAL REPORT
2014-15

INDIAN INSTITUTE OF TECHNOLOGY ROPAR

ANNUAL REPORT
2014-2015

INDIAN INSTITUTE OF TECHNOLOGY ROPAR
Nangal Road, Rupnagar, Punjab-140001 (INDIA)

Contents

1. FROM THE DIRECTOR'S DESK

Indian Institute of Technology Ropar started functioning from the academic year 2008-09 from the campus of IIT Delhi, the mentor institute. The Institute currently operates from the premises of Government Polytechnic College for Women in Ropar. The foundation stone laying ceremony was held on 24th February, 2009. Indian Institute of Technology Ropar has been registered as Society under the Societies' Registration Act 1860 on 29th July, 2009. The transit campus of IIT Ropar was inaugurated on 19th August, 2009. In a few years, the institute will be relocated to its own campus, spread over an area of 500 acres on the banks of the river Satluj. Three batches (2008-09, 2009-10 and 2010-11) of Undergraduate students have earned their B.Tech. Degrees in the Convocation. In addition, IIT Ropar has awarded PhD degree in the Convocation held on 15th November 2014. Presently the Institute has 476 UG, 42 PG and 138 PhD students.

The temporary campus for IIT Ropar is equipped with all the required facilities. Classrooms fitted with multimedia, faculty offices and administrative wing are all in place. There are four hostels: three for boys and one for girls. These hostels are equipped with modern mess units. Faculty recruitment, creation of laboratories and other support facilities are in full swing.

The new campus is under construction and is moving at a fast pace. Campus construction is expected to be completed by the end of 2016.

The overall academic system for IIT Ropar is designed to provide science-based engineering education with a view to produce quality engineers and scientists. The curriculum provides broad based knowledge and simultaneously builds a temper for lifelong learning and exploration. The undergraduate programme begins with a set of science and general engineering courses which are reflected in the course plan for the first year. These courses provide a foundation for further discipline-specific topics.

The Institute also undertakes a number of research and consultancy projects sponsored by a wide spectrum of funding agencies, including the Government and Industry. The Institute has undertaken major research activities in areas of national importance such as non-conventional energy, sensors, drug delivery, materials synthesis and their modification, image processing, cloud computing, networks, robotics, pattern recognition, renewable energy systems, microelectronics and nanodevices, mathematical biology, fluid dynamics, pure mathematics, quantum optics and quantum control, soft matter physics, ion beam physics, renewable energy, nanophotonics and metamaterials, surface patterning, sustainable energy, biomechanics, nanofluids, complex fluids, nanocomposites, Neuro-cognition, financial mathematics and markets, phonetics, etc.

The Institute provides adequate funds to the departments and faculty members for the up-gradation of laboratories and creation of research facilities. This has enabled our faculty to take up research projects in frontier and emerging areas of science and technology.

The Training & Placement cell is actively involved in organizing practical training of the undergraduate students and has been playing a catalytic role in finding placements for its final year students. Reorganization of Training & Placement cell is in the process and soon it will be known as Career Development and Corporate Relations Centre.

IIT Ropar has undertaken the task of redefining its vision and mission and to put a strategic plan to achieve them. It is also working on overhauling its UG programs and introduces new PG streams. IIT Ropar is in the process of finding its research focus particularly in the inter-disciplinary areas.

In fine it can be said that IIT Ropar is in the path of a steep growth for the years to come.

Prof. Sarit K. Das
Director

2. IIT ROPAR-MILESTONE

Milestone	Date
❖ Date of notification of IIT Ropar (Mentor Institute IIT Delhi)	May 9, 2008
❖ Registered as society under Societies' Registration Act 1860	July 29, 2008
❖ Foundation stone laid on	February 24, 2009
❖ First Director of the Institute joined on	June 10, 2009
❖ First Registrar of the Institute joined on	July 10, 2009
❖ Inauguration of the transit campus	August 19, 2009
❖ Commencement of classes at the transit campus	August 20, 2009
❖ Master plan approval by Board of Governors for the new campus	October 3, 2013
❖ Bhoomi poojan of new campus	November 14, 2014
❖ Commencement of actual construction	January 15, 2015

3. VISION

Indian Institute of Technology Ropar will be the leading centre for learning and creation/ advancement of knowledge in Science/Engineering and other interdisciplinary/multi-functionary areas of human endeavor.

MISSION

To train the high quality Engineers/Technologists having capacity and ability to find the solution to 21st century grand challenges of Engineering.

To utilize new and existing knowledge to connect with mainstream societal issues, such as affordable healthcare, agriculture productivity, drinking water and sustainable energy requirement of large sectional of people of India .

4. BOARD OF GOVERNORS

CHAIRPERSON

Padmashree (Mrs.) Lila Poonawalla
Chairperson,
Indian Institute of Technology Ropar

MEMBERS

Prof. M. K. Surappa
Director
Indian Institute of Technology Ropar

Shri Sarvesh Kaushal, IAS
Chief Secretary to Government of Punjab
Room No. 28, 6th Floor
Punjab Civil Secretariat
Chandigarh – 160 001

Prof. N. Sathyamurthy
Director
Indian Institute of Science Education and Research Mohali
Knowledge City, Sector 81, SAS Nagar
Manauli, Punjab – 140306

Shri Chetan Pahwa
Director
Avon Ispat & Power Ltd.
G.T. Road, Ludhiana
Punjab - 141014

Dr. V. Sumantran
Vice-Chairman
Ashok Leyland Ltd.
1-Sardar Patel Road, Guindy
Chennai – 600032

Shri Sanjiv Goyal
Chairman & Managing Director
Nectar Life Sciences Ltd.
SCO 38-39, Sector 9-D
Chandigarh – 160009

Prof. S. M. Ishtiaque
Professor
Department of Textile Technology
Indian Institute of Technology Delhi
Hauz Khas, New Delhi - 110016

Prof. P. K. Raina
Professor Incharge
(Academics & Research)
Indian Institute of Technology Ropar

SPECIAL INVITEE

Prof. R. K. Shevgaonkar
Director
Indian Institute of Technology Delhi
Hauz Khas, New Delhi- 110 016

Sh. Alok Mishra,
Director (IITs),
Ministry of Human Resource Development,
Department of Higher Education,
Technical Section-1,
Shastri Bhawan, New Delhi-110001

SECRETARY

Prof. Javagal K. Sridhar
Officiating Registrar
Indian Institute of Technology Ropar

5. FINANCE COMMITTEE

CHAIRPERSON

Padmashree (Mrs.) Lila Poonawalla
Chairperson, Board of Governors,
Indian Institute of Technology Ropar

MEMBERS

Prof. M. K. Surappa
Director
Indian Institute of Technology Ropar

Shri Amarjeet Sinha
Additional Secretary (Higher Education)
Ministry of Human Resource Development
Shastri Bhawan, New Delhi-110001

Shri Yogendra Tripathi, IAS
Joint Secretary & Financial Advisor
Room No. 306, 'A' Wing,
Ministry of Human Resource Development
Shastri Bhawan, New Delhi-110001

Prof. R. K. Shevgaonkar
Director
Indian Institute of Technology Delhi
Hauz Khas, New Delhi- 110016

SPECIAL INVITEE

Sh. Alok Mishra
Director (IITs)
Govt. of India
Ministry of Human Resource Development
Shastri Bhawan, New Delhi-110001

SECRETARY

Prof. Javagal K. Sridhar
Officiating Registrar
Indian Institute of Technology Ropar

6. BUILDING AND WORKS COMMITTEE

CHAIRMAN

Prof. M. K. Surappa
Director
Chairman, B & WC
Indian Institute of Technology
Ropar

SECRETARY

Prof. Javagal K. Sridhar
Officiating Registrar
Indian Institute of Technology
Ropar

MEMBERS

Prof. A. Sridharan
40, West Park Road
Between 13th & 14th Cross
Malleswaram, Bangalore-560003

Er. S. Ramanujam
C/o S.S. Rajan
New No. 7, Old No. 4, 1st Floor
Mannar Reddy Street
T. Nagar, Chennai-600017

Er. A. K. Sarin
840, Sector 17
Faridabad-121002

7. SENATE

CHAIRMAN

Prof. M. K. Surappa
Director
Indian Institute of Technology Ropar

MEMBERS

Prof. N. Sathyamurthy
Director
Indian Institute of Science Education and Research
Knowledge City, Sector 81
SAS Nagar, Manauli
Punjab-140306

Prof. Arun Kumar Grover
Vice Chancellor
Punjab University
Chandigarh-160014

Prof. M. L. Munjal
Emeritus Professor
Department of Mechanical Engineering
Indian Institute of Science
Bangalore – 560012

Prof. P. K. Raina
Professor and Head
Department of Physics
Indian Institute of Technology Ropar

Prof. Sanjoy Roy
Professor
Department of Electrical Engineering
Indian Institute of Technology Ropar

Dr. Somdev Kar
Assistant Professor and Coordinator
Department of Humanities & Social Sciences
Indian Institute of Technology Ropar

Dr. J. S. Sahambi
Associate Professor & Head
Department of Electrical Engineering
Indian Institute of Technology Ropar

Dr. Harpreet Singh
Associate Professor
School of Mechanical, Materials & Energy Engineering
Indian Institute of Technology Ropar

Dr. M. Prabhakar
Assistant Professor and Coordinator
Department of Mathematics
Indian Institute of Technology Ropar

Dr. Nitin Auluck
Assistant Professor and Coordinator
Department of Computer Science & Engineering
Indian Institute of Technology Ropar

Dr. Narinder Singh
Assistant Professor and Coordinator
Department of Chemistry
Indian Institute of Technology Ropar

Dr. Navin Kumar
Assistant Professor and Coordinator
School of Mechanical, Materials & Energy Engineering
Indian Institute of Technology Ropar

Dr. Himanshu Tyagi
Assistant Professor
School of Mechanical, Materials & Energy Engineering
Indian Institute of Technology Ropar

Dr. Jitendra Prasad
Assistant Professor
School of Mechanical, Materials & Energy Engineering
Indian Institute of Technology Ropar

SPECIAL INVITEES

Prof. S. M. Ishtiaque
Professor
Department of Textile Technology
Indian Institute of Technology
Delhi
Hauz Khas, New Delhi-110016

Prof. S. R. Kale
Professor
Department of Mechanical
Engineering
Indian Institute of Technology
Delhi
Hauz Khas, New Delhi-110016

Dr. Rano Ringo
Assistant Professor and Warden
Department of Humanities &
Social Sciences
Indian Institute of Technology
Ropar

Dr. Dinesh K.S.
Deputy Librarian
Indian Institute of Technology
Ropar

Dr. R. Srivastava
Assistant Professor
Department of Chemistry
Indian Institute of Technology
Ropar

SECRETARY

Prof. Javagal K. Sridhar
Officiating Registrar
Indian Institute of Technology
Ropar

8. ACADEMIC COMMITTEE FOR UNDERGRADUATE STUDIES (ACUGS)

Sr. No.	Name
1	Prof. P. K. Raina, Professor Incharge (Academics & Research)
2	Dr. Himanshu Tyagi, UG Coordinator
3	Dr. Navin Kumar, PG Coordinator
4	Dr. Anupam Agrawal, School of Mechanical, Materials & Energy Engineering
5	Dr. Apurva Mudgal, Department of Computer Science & Engineering
6	Dr. Anshu Dhar Jayal, School of Mechanical, Materials & Energy Engineering
7	Dr. Chakradhar Reddy Chandupatla, Department of Electrical Engineering
8	Dr. Deepti R. Bathula, Department of Computer Science & Engineering
9	Dr. Ekta Singla, School of Mechanical, Materials & Energy Engineering
10	Dr. Harpreet Singh, School of Mechanical, Materials & Energy Engineering
11	Dr. Jung hyun Jun, Department of Computer Science & Engineering
12	Dr. Jitendra Prasad, School of Mechanical, Materials & Energy Engineering
13	Dr. Jyotindra S. Sahambi, Head of Department, Department of Electrical Engineering
14	Dr. Nitin Auluck, Coordinator, Department of Computer Science & Engineering
15	Dr. Madeti Prabhakar, Coordinator, Department of Mathematics
16	Dr. Narinder Singh, Coordinator, Department of Chemistry
17	Dr. Prabal Banerjee, Department of Chemistry
18	Dr. Rakesh Kumar, Department of Physics
19	Dr. Ramjee Repaka, School of Mechanical, Materials & Energy Engineering
20	Dr. Ravi Shankar R. V., Department of Electrical Engineering
21	Dr. Ravibabu Mulaveesala, Department of Electrical Engineering
22	Dr. Ravi Mohan Prasad, Faculty Incharge (Training & Placement)
23	Dr. Rohit Y. Sharma, Department of Electrical Engineering
24	Dr. Ranjana Sodhi, Department of Electrical Engineering
25	Dr. Samaresh Bardhan, Department of Humanities & Social Science
26	Dr. Subhendu Sarkar, Department of Physics
27	Dr. Subash Martha, Department of Mathematics
28	Dr. Satwinder Jit Singh, School of Mechanical, Materials & Energy Engineering
29	Dr. Somdev Kar, Coordinator, Department of Humanities & Social Science
30	Dr. Subrahmanyam Murala, Department of Electrical Engineering
31	Mr. C. S. Sham Sunder, Assistant Registrar (Academics)

9. RESEARCH PROGRAMME EVALUATION COMMITTEE (RPEC)

Sr. No.	Name
1	Prof. P. K. Raina, Professor Incharge (Academics & Research)
2	Dr. Navin Kumar, Coordinator, RPEC
3	Dr. Asoka Biswas, Department of Physics
4	Dr. Chakradhar Reddy Chandupatla, Department of Electrical Engineering
5	Dr. Dhilip K. Thoguluva, Department of Chemistry
6.	Dr. Harpreet Singh,School of Mechanical, Materials & Energy Engineering
7	Dr. Jyotindra S. Sahambi, Head, Department of Electrical Engineering
8	Dr. Kamal Kumar Choudhary, Department of Humanities & Social Sciences
9	Dr. Manju Khan, Department of Mathematics
10	Dr. Madeti Prabhakar, Coordinator, Department of Mathematics
11	Dr. Nitin Auluck, Coordinator, Department of Computer Science & Engineering
12	Dr. Narinder Singh, Coordinator, Department of Chemistry
13	Dr. Ramjee Repaka, School of Mechanical, Materials & Energy Engineering
14	Dr. Rajendra Srivastava, Department of Chemistry
15	Dr. Somdev Kar, Coordinator, Department of Humanities & Social Science
16.	Mr. C. S. Sham Sunder, Assistant Registrar (Academics)

10. ADMINISTRATION

KEY OFFICIALS		
Sr. No.	**Designation**	**Name**
1	Director	Prof. M. K. Surappa
2	Professor Incharge (Academic & Research)	Prof. P. K. Raina
3	Professor Incharge (Student Affairs)	Prof. Sanjoy Roy
4	Officiating Registrar	Prof. Javagal K. Sridhar
	OTHER OFFICIALS	
5	Head, Department of Physics	Prof. P. K. Raina
6	Head, Department of Electrical Engineering	Dr. J. S. Sahambi
7	Coordinator, Department of Humanities and Social Sciences	Dr. Somdev Kar
8	Coordinator, Department of Computer Science & Engineering	Dr. Nitin Auluck
9	Coordinator, School of Mechanical, Materials & Energy Engineering	Dr. Navin Kumar
10	Coordinator, Department of Chemistry	Dr. Rajendra Srivastava
11	Coordinator, Department of Mathematics	Dr. M. Prabhakar
12	Coordinator, Centre for Biomedical Engineering	Dr. Jitendra Prasad
13	PG Coordinator	Dr. Navin Kumar
14	UG Coordinator	Dr. Himanshu Tyagi
15	UG Coordinator (Curriculum)	Dr. Jitendra Prasad
16	Chairman, Library Committee	Dr. Rajendra Srivastava
17	Faculty Incharge (Training and Placement)	Dr. Ravi Mohan Prasad
18	Faculty Incharge (Guest House)	Dr. Rajesh V. Nair
19	Hostel Wardens	I.Dr. Prabal Banerjee II.Dr. C. N. Tharamani III.Dr. Anupam Agrawal
20	Chairperson, Counselling Cell	Prof. Sanjoy Roy
21	Deputy Librarian	Dr. Dinesh K. S.
22	Deputy Registrar, Establishment & Stores & Purchase	Sh. Ravinder Kumar
23	Executive Engineer	Sh. T. S. Anand
24	Assistant Registrar, Accounts	Sh. Lagvish Kumar
25	Assistant Registrar, Academics & Student Affairs	Sh. C. S. Shyam Sundar
26	Sports Officer	Sh. Ajeetpal Singh
27	Assistant Executive Engineer (Civil)	Sh. Saurabh Sharma

11. LIBRARY COMMITTEE

CHAIRMAN

Dr. Rajendra Srivastava
Assistant Professor
Department of Chemistry

CONVENER

Dr. Dinesh K. S.
Deputy Librarian

MEMBERS

Dr. C. K. Narayanan
Assistant Professor
Department of Computer Science & Engineering

Dr. Asoka Biswas
Assistant Professor
Department of Physics

Dr. Ramjee Repaka
Assistant Professor
School of Mechanical, Materials, Energy Engineering

Dr. Subrahmanyam Murala
Assistant Professor
Department of Electrical Engineering

12. STUDENTS' BODY

The students listed below are the office holders for various student activities for the academic year 2014-15.

Secretaries		
Name of the post	**Name**	**Entry Number**
General Secretary	Mohd. Uzair Khan	2012CSB1017
Cultural Secretary	Tushar Verma	2012EEB1079
Mess Secretary (for Mess-I)	Anubhav Agarwal	2013CSB1002
Mess Secretary (for Mess-II)	Sunil Panwar	2011ME1117
Sports Secretary	Agrim Bansal	2012CSB1004
Science & Technology Secretary	Amogh Agrawal	2012EEB1046
Student Activity Center Secretary	Ishneet Singh	2012MEB1098
Hostel Maintenance Secretary	Saurabh Khoria	2013CSB1029

Board of Cultural Activities		
Name of the post	**Name**	**EntryNumber**
Music Club Representative	S. Deepak Srinivas	2012CSB1032
Dramatics Representative	Ashish Singh	2012EEB1049

Board of Sports Activities		
Name of the post	**Name**	**Entry Number**
Table Tennis Representative	Shubham Beniwal	2013CSB1033
Basketball Representative	Himanshu Gupta	2013CSB1011
Volleyball Representative	Rohan Mishra	2012MEB1113
Athletics Representative	Ramraj Meena	2013EEB1067
Football Representative	Akshay Dahiya	2013MEB1084
Badminton Representative	T. Jagadeesh Chandra	2012CSB1037
Cricket Representative	Shubham Gupta	2013EEB1071
Lawn Tennis Representative	Paras Garg	2013MEB1099
Girls Representative (Ground Sports)	Apoorva Rao	2012CSB1007
Girls Representative (Racquet Sports)	Arushi Gupta	2012EEB1048

Board of Science & Technology		
Name of the post	**Name**	**Entry Number**
Quiz and Puzzles Club Representative	Jaspal Singh	2013CSB1013
Computer Integrated Manufacturing Club Representative	Alok Agarwal	2012MEB1087
Robotics Club Representative	Piyush Rai	2012MEB1109
Coding Club Representative	Rahul Mittal	2012CSB1027
Video Editing and Animation Club	Ananya Kirti	2013EEB1048
Astronomy Club	Kshitij Aggarwal	2013EEB1060

Students Activity Center		
Name of the post	**Name**	**Entry Number**
Gym Representative	Muhammed Roshan	2012MEB1105
Fine Arts Club Representative	Kashish Grover	2013EEB1059
Literary Society Representative	Sanyam Jain	2012MEB1114
Public Speaking Representative	Gaurav Mittal	2012CSB1013
Photography Club	Parth Jaggi	2012MEB1108

13. FACULTY JOINED DURING 2014-15

Sr. No.	Name of the Employee	Designation	Department
1	Dr. Chittaranjan Mishra	Assistant Professor	Mathematics
2	Dr. G. Sankara Raju Kosuru	Assistant Professor	Mathematics
3	Dr. Vijaya Sankara Rao Pasupureddi	Assistant Professor	Electrical Engineering
4	Dr. Tapas Chatterjee	Assistant Professor	Mathematics
5	Dr. Subrahmanyam Murala	Assistant Professor	Electrical Engineering
6	Dr. Ravi Shankar Reddy V.	Assistant Professor	Electrical Engineering
7	Dr. Narayanan C. Krishnan	Assistant Professor	Computer Science & Engineering
8	Sh. Steven Moulin	French Tutor	Humanities & Social Sciences
9	Prof. Avtar Singh	Visiting Professor	Electrical Engineering
10	Prof. Gurvinder Singh Virk	Visiting Professor	School of Mechanical, Materials, Energy Engineering

14. NON TEACHING STAFF JOINED DURING 2014-15

Sr. No.	Name of the Employee	Designation	Department
1	Sh. Saurabh Sharma	Assistant Executive Engineer (Civil)	Works & Estate
2	Dr. Abi Manue Sharma	Medical Officer	Medical Center
3	Sh. Jitender Kumar Sayal	Jr. Attendant (Semi-Skilled)	Director's Office
4	Sh. Jaspreet Singh	Jr. Attendant (Semi-Skilled)	Electrical Engineering
5	Sh. Sahil Kapoor	Jr. Attendant (Semi-Skilled)	Physics
6	Sh. Sarabjeet Singh	Jr. Attendant (Semi-Skilled)	Dean Office

15. FINANCE & ACCOUNTS

15.1. EXTERNAL RESEARCH & CONSULTANCY PROJECTS SANCTIONED DURING THE FINANCIAL YEAR 2014-15

Sr. No.	Project Head	Name of Faculty Member	Title of Project	Total Sanctioned Amount (Rs.)
1	Department of Science and Technology	Dr. Jitendra Prasad	Invertible computer model for bone adaptation to mechanical environment	15,00,000
2	Department of Science and Technology	Dr. Anshu Dhar Jayal	Surface engineering of cutting tools for sustainable dry, near dry and cryogenic machining	31,00,000
3	Department of Science and Technology	Dr. Avijit Goswami	Syntheses and application of heteroation substituted cyclooctateraenes (COTs)	51,70,000
4	Department of Science and Technology	Dr. Prof. P. K. Raina	Calculation of nuclear transition matrix elements and measurement of experimental half-life for nuclear beta decay	21,00,000
5	Department of Science and Technology	Dr. Ravibabu Mulaveesala	Matched filter approach for chirp excited infrared imaging for non-destructive characterization	45,30,400
6	Department of Science and Technology	Dr. Ramjee Repaka	Assessment of thermally induced damage of healthy cell volume during radiofrequency ablation of breast malignant tissues	20,60,000
7	Department of Science and Technology	Dr. Deepti R. Bathula	Neuroimaging: towards integrated analysis of multi-site functional MRI data	17,77,000
8	Department of Science and Technology	Dr. S. C. Martha	Surface wave interaction with irregular bottom topography and barriers	13,32,000
9	Department of Science and Technology	Dr. Partha Sharathi Dutta	Non-equilibrium dynamics and predictability of plankton communities in a seasonal environment	6,80,000
10	Department of Science and Technology	Dr. Harpreet Singh	Engineering driven sustainable supply networks - a UK/India collaborative	48,76,000
11	Department of Science and Technology	Dr. Rajesh V. Nair	Finite-size and disorder-induced modification of spontaneous emission in nanophotonic structures	25,65,000
12	Council of Scientific & Industrial Research	Dr. T. J. Dhilip Kumar	A first-principles study of metal grafted calix{n}arenes as hydrogen storage material	5,00,000
13	Council of Scientific & Industrial Research	Dr. C. N. Tharamani	Development of sustainable oxygen depolarized cathode material of hcl electrolysis	4,00,000
14	Council of Scientific & Industrial Research	Dr. Rajendra Srivastava	Synthesis of mono-cationic and multi-cationic ionic liquids and their application in catalysis and material synthesis	4,50,000

15	Defence Research & Development Organisation	Dr. Ravi Babu	Non-destructive testing of carbon fiber reinforced polymers (CFRP) using non-stationary thermal technique	21,89,000
16	Department of Atomic Energy	Dr. Manju Khan	Normal complement in the unit group and its structure	9,89,500
17	Indian Council of Social Science Research	Dr. Samaresh Bardhan	Finance and Growth: Regional Perspectives in India	4,00,000
18	Central Power Research Institute	Dr. C. C. Reddy	Investigations on new nano-composite materials for electrical insulation	45,00,000
19	DRDO (Defence Research & Development Organisation)	Dr. Rohit Y. Sharma	Design verification and analysis of electronic impact cum time delay sensing module	9,72,000
20	DRDO (Defence Research & Development Organisation)	Dr. C. C. Reddy	Design and development of compact firing circuit	9,12,000
21	Industrial Consultancy	Dr. Ravi Shankar R. Velampati	Developing semiconductor thin film layers in next generation toolsets for advanced semiconductor devices.	20,000
			TOTAL	**4,10,22,900**

Rupees Four crores ten lacs twenty two thousand and nine hundred only

15.2 RECEIPT AND PAYMENT ACCOUNT FOR THE FINANCIAL YEAR 2014-15

RECEIPT	Amount (in Rs.) 31.03.2015	PAYMENT	Amount (in Rs.) 31.03.2015
I. Opening Balances		**I. Expenses**	
a) Cash Balance	0	a) Establishment Expenses	150194343
b) Bank Balance		b) Academic Expenses	59840566
i) In Current accounts	0	c) Administrative Expenses	31433680
ii) In deposit accounts (FDR with SBI)	496784590	d) Transportation Expenses	2830242
iii) Savings accounts (Institute)	28288141	e) Repair & Maintenance	10553124
iv) Savings accounts (R & D)	11781383	f) Prior Period Expenses	0
II. Grant-in-Aid	1138400000	**II. Payment against Earmarked/Endowment Funds**	0
III. Academic Receipts	30124210	**III. Payment against Sponsored Projects/Schemes**	28484890
IV. Receipt against Earmarked/Endowment Funds	0	**IV. Payment against Sponsored Fellowships and Scholarships**	4091463
V. Receipt against Sponsored Projects/Schemes	33923880	**V. Investment and Deposits made**	
		(a) Out of Earmarked/ Endowment Funds	0
VI. Receipt against Sponsored Fellowships and Scholarships	5242993	(b) Out of Own Funds (Investments - Others)	0
VII. Income on Investments from		**VI. Term Deposits with Scheduled Banks**	
a) Earmarked/Endowment Funds	0	FDR (R&D)	189586520
b) Other Investments	0	FDR (R&D-PDIF)	45367180
VIII. Interest received on		**VII. Expenditure on Fixed Assets and Capital Works in Progress**	
a) FDR	31646585	a) Fixed Assets	124925633
b) Loans and Advances	0	b) Capital Work in Progress	917217240
c) Savings Bank Accounts	3209760		
d) Savings Bank Accounts (TIDE)	227431	**VIII. Other Payments including statutory payments**	10216064

e) FDR (R&D)	3014975		
f) FDR (R&D-PDIF)	2133026	**IX. Refunds of Grants (Projects)**	1803325
IX. Investments Encased		**X. Deposits and Advances**	33477773
Endowment Fund	0		
		XI. Other Payments	5984
X. Term Deposits with Scheduled Banks Encased			
FDR (R&D)	178715290		
FDR (R&D-PDIF)	44255679	**XII. Closing Balances**	
		a) Cash Balance	0
XI. Other Income (including Prior Period Income)	4635728	b) Bank Balance	
		i) In Current accounts	0
		ii) In deposit accounts (FDR with SBI)	388507765
XII. Deposits and Advances	7129301	iii) Savings accounts (Institute)	15762199
XIII. Miscellaneous Receipts including Statutory Receipts	2620246	iv) Savings accounts (R & D)	7835228
TOTAL	**2,02,21,33,218**	**TOTAL**	**2,02,21,33,218**

Rupees Two hundred & two crores twenty one lacs thirty three thousand two hundred & eighteen only.

15.3 ISIRD PROJECT GRANT SANCTIONED DURING THE FINANCIAL YEAR 2014-15

Sr. No.	Name of Faculty Member	Title of Project	Amount in Rupees
1	Dr. Prabhat K. Agnihotri	An investigation on the properties of interface/Interphase in carbon nanotube based composites	59,76,475
2	Dr.Vijay Sankara Rao Pasupureddi	Design and development of simultaneous bidirectional signalling chip-to-chip data communication link in CMOS technology	33,50,000
3	Dr. G. Sankara Raju Kosuru	Eigenvalue Estimations on Schur Products	1,70,000
4	Dr. Narayanan Chatapuram Krishnan	Human activity modeling in smart environments	8,20,000
5	Dr. Chittaranjan Mishra	GUP Computing and numerical methods for pricing financial options	11,00,000
6	Dr. Ravi Shankar R. Velampati	Nonvolatile memory and photovoltaic devices based on nanocrystals and quantum dots	64,00,000
7	Dr. Subrahmanyam Murala	Underwater image enhancement and object detection using computer vision-based techniques	23,00,000
8	Dr. Dhiraj K. Mahajan	An investigation into role of microstructure on fatigue behavior metals under hydrogen environment	42,00,000
9	Dr. Jung hyun (Peter) Jun	Last mile networking protocols and system design for internet of things	10,36,000
10	Dr. Tapas Chatterjee	Nature of special values of certain L-functions	2,30,000
		Total Amount	**2,55,82,475**

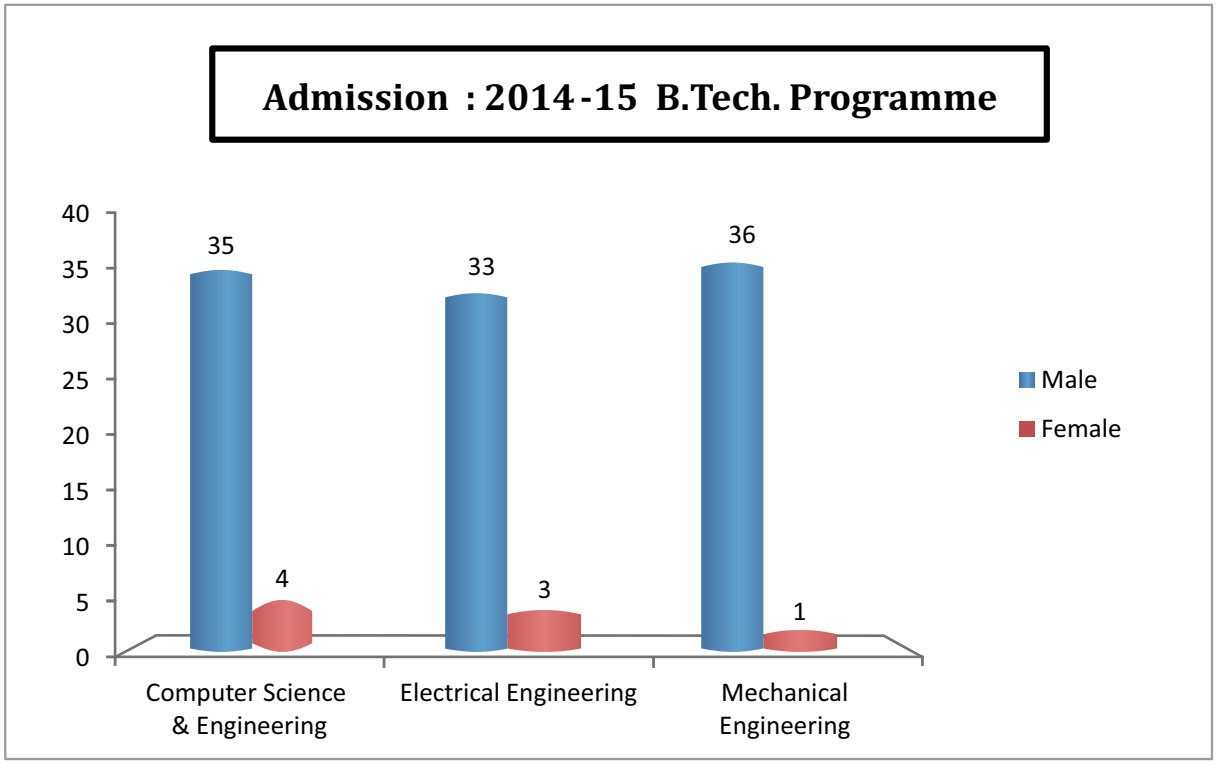
Rupees– Two crores fifty five lacseighty two thousand four hundred and seventy five only.

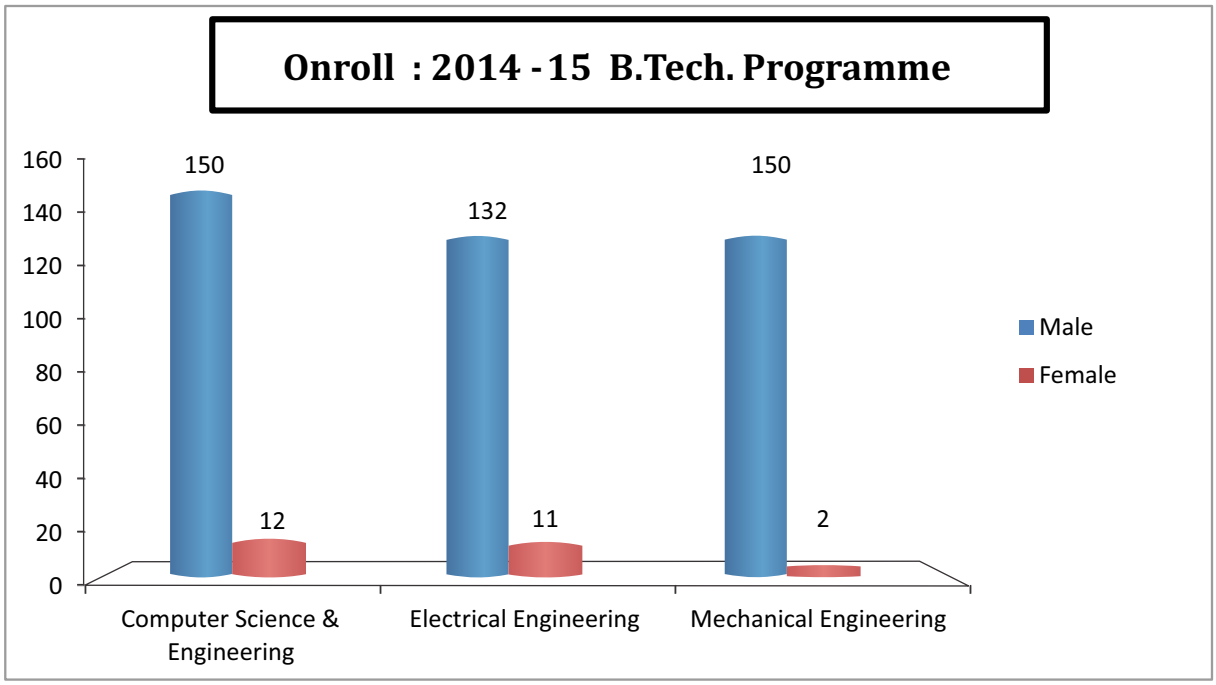
16. STUDENTS STATISTICS

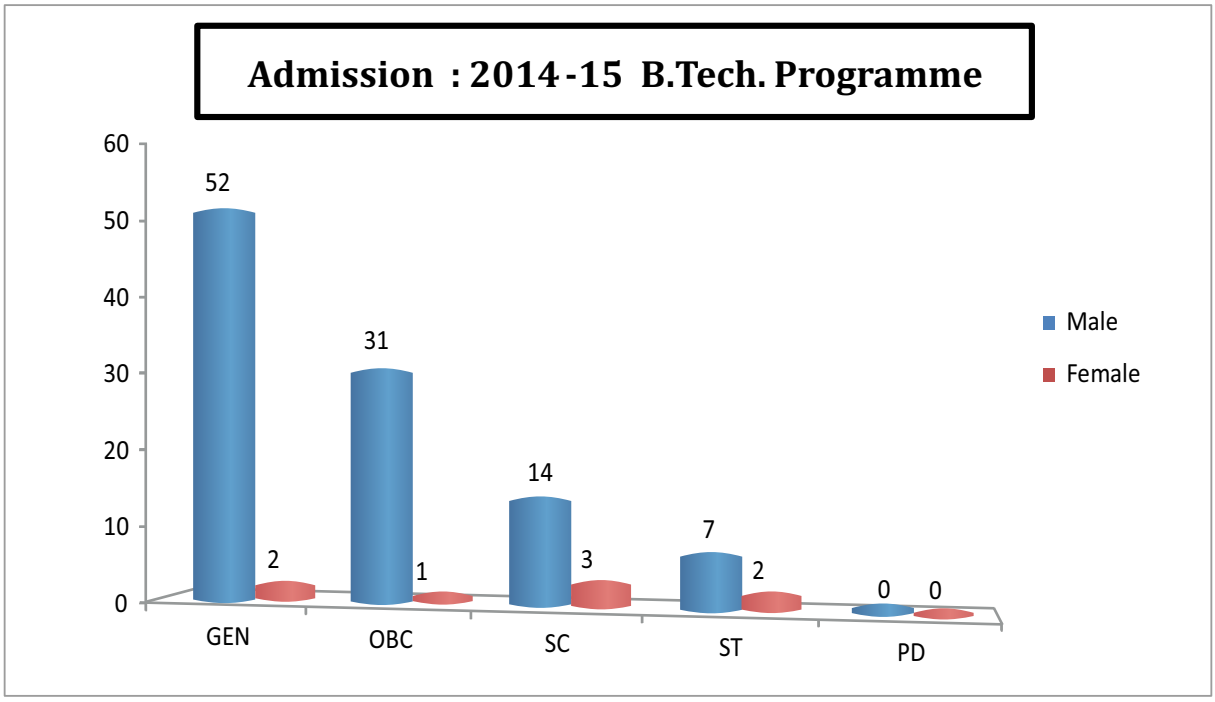
16.1 ENROLLMENT

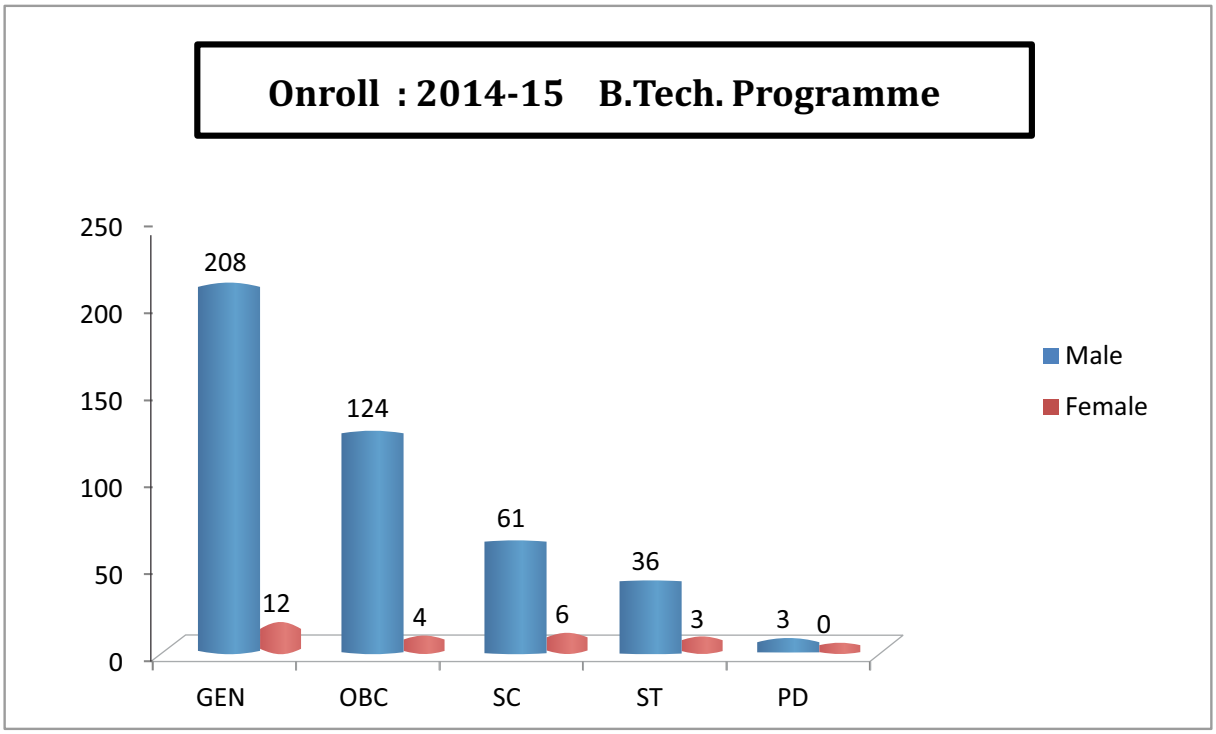
The Institute started functioning from the transit campus since August 19, 2009. The Institute admitted 112 students to the B.Tech. programme during the Academic Year 2014-15. These students were selected through the All India Joint Entrance Examination. The Institute offers courses in Computer Science and Engineering, Electrical Engineering and Mechanical Engineering. The details of students admitted to the various Departments are as follows:

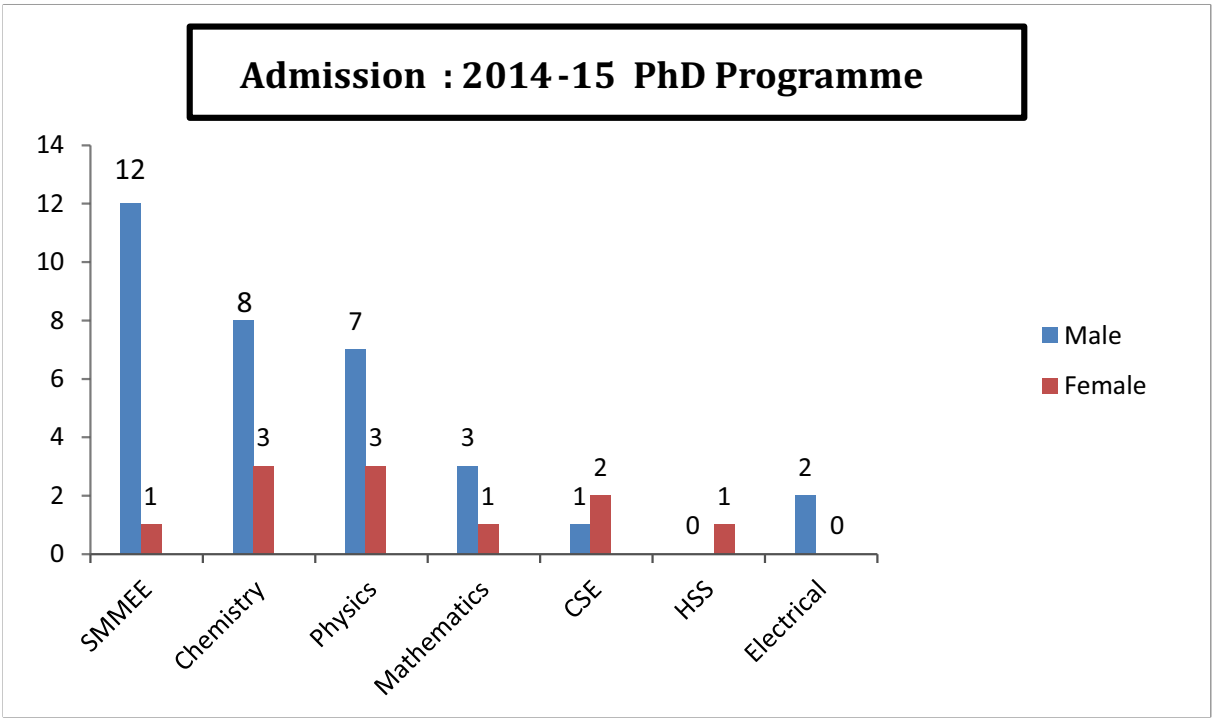
Distribution of students according to discipline and gender.

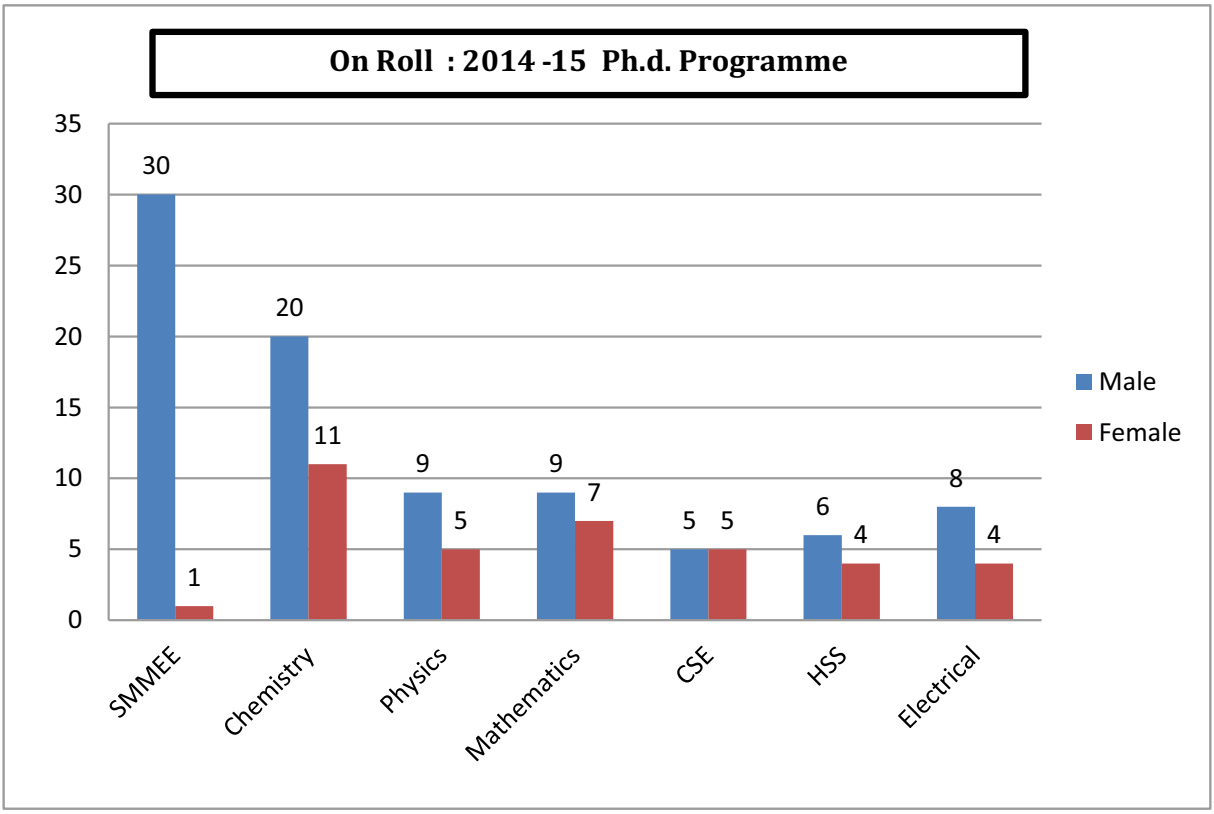





Admission : 2014-15 B.Tech. Programme
60
50
40
30
20
10
0
52
2
31
1
14
3
7
2
0
0
GEN
OBC
SC
ST
PD
Male
Female


Onroll : 2014-15 B.Tech. Programme
250
200
150
100
50
0
208
12
124
4
61
6
36
3
3
0
GEN
OBC
SC
ST
PD
Male
Female


Admission : 2014-15 PhD Programme
14
12
10
8
6
4
2
0
12
1
8
3
7
3
3
1
1
2
0
1
2
0
SMMEE
Chemistry
Physics
Mathematics
CSE
HSS
Electrical
Male
Female


On Roll : 2014-15 Ph.d. Programme
35
30
25
20
15
10
5
0
30
1
20
11
9
5
9
7
5
5
6
4
8
4
SMMEE
Chemistry
Physics
Mathematics
CSE
HSS
Electrical
Male
Female

16.2 DEGREE AWARDEES (Batch 2011)

Computer Science & Engineering		
Sr. No.	**Entry No.**	**Name of the Students**
1	2011CS1001	Abhinav Puri
2	2011CS1002	Abhishek Gambhir
3	2011CS1005	Ashish Dhingan
4	2011CS1008	Gurasis Singh
5	2011CS1009	Harsimran Singh
6	2011CS1010	Honey Singla
7	2011CS1011	Imroj Qamar
8	2011CS1012	Jaskaran Singh Virdi
9	2011CS1013	Kumar Harshad
10	2011CS1014	Lalit S Verma
11	2011CS1015	Medha Gupta
12	2011CS1016	Mishra Alok Sushilkumar
13	2011CS1017	Naina Bansal
14	2011CS1018	Nalam Naresh Kumar
15	2011CS1019	Naman Chhabra
16	2011CS1024	Pankaj
17	2011CS1025	Paramvir Singh
18	2011CS1026	Parmeet Singh
19	2011CS1027	Prakhar Asthana
20	2011CS1028	Prateek Singh
21	2011CS1029	Prikshit Kumar
22	2011CS1030	Rahul Kumar
23	2011CS1031	Rajeev Kumar
24	2011CS1033	Sahil Dabra
25	2011CS1034	Sankalp Maurya
26	2011CS1037	Swapnil Godbole
27	2011CS1039	Utkarsh Barnwal
28	2011CS1040	Vikas Almal
29	2011CS1057	Gourav Bansal
30	2011CS1079	Vishwash Batra

Electrical Engineering		
Sr. No.	**Entry No.**	**Name of the Students**
1	2011EE1041	Aayush Chourasiya
2	2011EE1043	Aiman Khan
3	2011EE1045	Ankit Rana
4	2011EE1046	Ashish Cherian Samuel
5	2011EE1047	Ashish Garg
6	2011EE1049	Chandan Prasad
7	2011EE1050	Chennur Megha Shyam
8	2011EE1051	Dilip Kumar
9	2011EE1052	Dinesh Kumar Verma
10	2011EE1053	Dinesh Kumawat
11	2011EE1054	Gagandeep Singh
12	2011EE1055	Ghanshyam Sahani
13	2011EE1056	Gitesh Aggarwal
14	2011EE1058	Harshit
15	2011EE1059	Kiran Meena
16	2011EE1060	Kushal Rahangdale
17	2011EE1061	M. Raquib Anjum
18	2011EE1064	Mishra Satyaprakash Harvansh
19	2011EE1065	Najish Muhammed
20	2011EE1066	Namami Ahirwar
21	2011EE1067	Naquid Khalili
22	2011EE1068	Pulkit Gera
23	2011EE1069	Rahul Sharma
24	2011EE1070	Roshan Agarwal
25	2011EE1071	Satyendra Maurya
26	2011EE1072	Sunil Kumar Meena
27	2011EE1073	Suprith B
28	2011EE1074	Tanmay Jain
29	2011EE1076	Vedprakash Meena
30	2011EE1077	Vikas Mohan Rana
31	2011 EE 1078	Vishal G J

Mechanical Engineering		
Sr. No.	**Entry No.**	**Name of the Students**
1	2011ME1038	Tushar
2	2011ME1081	Akshat Pandey
3	2011ME1082	Aman Kumar
4	2011ME1083	Anurag Kanojia
5	2011ME1084	Anurag Patel
6	2011ME1085	Ashraf Kamal Nasimi
7	2011ME1087	Atul Agrawal
8	2011ME1088	Ayush Bagla
9	2011ME1090	Boddu Venkata Nagarjuna Reddy
10	2011ME1091	Farshad O
11	2011ME1092	Harsh Jyot Singh
12	2011ME1093	Harsimran Jot Singh
13	2011ME1094	Hemant Meena
14	2011ME1096	Jogendra Singh
15	2011ME1097	L Siddharth
16	2011ME1098	Mahajan Gaurav Jaganath
17	2011ME1099	Mandla Manoj Kumar
18	2011ME1100	Mohit Aggarwal
19	2011ME1101	Nitin Jain
20	2011ME1103	R Rohan Prasad
21	2011ME1104	Rakesh Kumar
22	2011ME1105	Ravindra Meena
23	2011ME1108	Rohit Paul Kuruvilla
24	2011ME1109	Sachin Kumar
25	2011ME1110	Sahil Vijay
26	2011ME1112	Shah Yash Girish
27	2011ME1113	Shashank Saurabh
28	2011ME1114	Siddhartha Agarwal
29	2011ME1115	Sreeraj P J
30	2011ME1116	Sumanyu Maingi
31	2011ME1117	Sunil Panwar
32	2011ME1119	Yogesh Singhal
33	2011ME1123	Megraj Meena
34	2011ME1124	Jugal Kishore Meena

Degree Awardees of Batch 2008		
Sr. No.	**Entry No.**	**Name of the Student**
1	P2008EE1027	Rahul Mehta

Degree Awardees of Batch 2009		
Sr. No.	**Entry No.**	**Name of the Student**
1	P2009ME1098	Javed Khan

Degree Awardees of Batch 2010		
Sr. No.	**Entry No.**	**Name of the Students**
1	2010EE1049	Awere Darshan Ashok
2	2010EE1050	Bingi Siddhartha
3	2010EE1051	Dinesh Kumar Tudu
4	2010ME1112	Nihal

16.3 HOSTELS

Student Residency Status

Year	Number	Hostel
Undergraduate boys		
First Year	104	Jupiter (Boys Hostel)
Second Year	113	Neptune (Boys Hostel)
Third Year	108	Mercury (Boys Hostel)
Fourth Year	104	Mercury (Boys Hostel)
Undergraduate girls		
First Year	8	Venus (Girls Hostel)
Second Year	4	
Third Year	8	
Fourth Year	5	
Undergraduate backlogers		
Fifth Year (2009 entry)	1	Mercury (Boys Hostel)
Sixth Year (2010 entry)	3	
Research Scholars		
Boys	44	Mercury (Boys Hostel)
Girls	30	Venus (Girls Hostel)
Total	**477 Boys & 55 Girls**	532 in all hostels

Boys Hostel	4
Girl Hostel	1
Total Hostel	5

16.4 STUDENTS' ACTIVITY CENTER

The aim of the Board of Science & Technology is to inculcate interest in technical activities among students, beyond their coursework, enabling them to apply what they learn while having fun.

Brief summary of all activities conducted:

- Fortnightly coding classes and small events (C, C++, Android)
- Fortnightly sessions of Robotics (Microcontrollers – ATMega, Arduino)
- Monthly competitions of quiz and puzzles ranging from IQ, Algorithms, Mathematics and Logic
- Purchase of new telescopes and binoculars for astronomy club
- Purchase of Arduino kits and other parts for Robotics Club
- Annual Techno-Cultural Fest:
    - Line-Follower
    - Dekode Puzzle event
    - Workshops on hacking and autonomous robotics through Robosapiens Ltd.

Active participation from many colleges across Punjab, Haryana and Delhi.

- Astronomy sessions: Seeing the Moon, Jupiter and other celestial bodies
- Workshop on Arduino by Dr. Rainer Haseitl
- Robotics sessions by Prof. Gurvinder Virk, University of Gävle, Sweden along with the ideas for working on real life projects.
- Tech - Week:
    - Coding Quiz
    - Algorithm Quiz
    - Finance and Economics Quiz
    - Online coding contest
    - Circuit designing

Intra-college technical week is organized for the participation of students from all branches and years.

16.5 ALUMNI CELL

The Institute has been actively working to ensure greater participation of its alumni in its educational and recreational activities by initiating various programs in association with the alumni association of IIT Ropar. The alumni association though in its nascent stages, has already started several programs like Alumni Student Mentorship Program and Scholarship Program to encourage students to participate in international conferences being held outside India. In addition to these, to promote Alumni-Student Interaction, the alumni association also holds web and in person sessions by eminent alumni. The alumni have shown a lot of enthusiasm to participate in these initiatives and to keep working towards building a brand for IIT Ropar.

17. FINANCIAL ASSISTANCE TO STUDENTS

17.1 MERITS-CUM-MEANS SCHOLARSHIP

The merit-cum-means scholarship is given to deserving undergraduate students. These are permissible to about 25% of the students. The present value of merit-cum-means scholarship is Rs. 1000/- per month for general students and the recipient is exempted from paying tuition fee. The criterion of merit for first year is the All India Rank in the JEE.

17.2 INSTITUTE FREE STUDENTSHIP

The Institute offers free studentship to 10% of the students on the basis of means alone.

17.3 INSTITUTE MERIT PRIZES AND CERTIFICATES

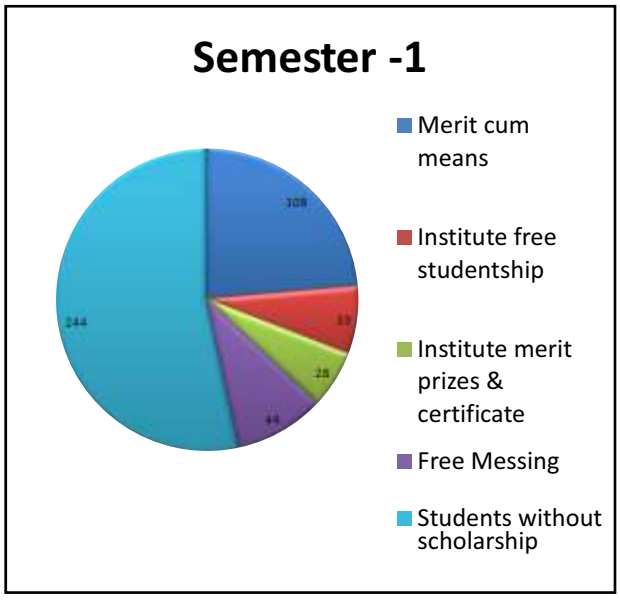
The Institute offers merit prizes and certificates to top 7% of the students of each 4 year B. Tech. programme for the 1st and 2nd semester. A total amount of Rs. 2500/- and a merit certificate is given to these students.

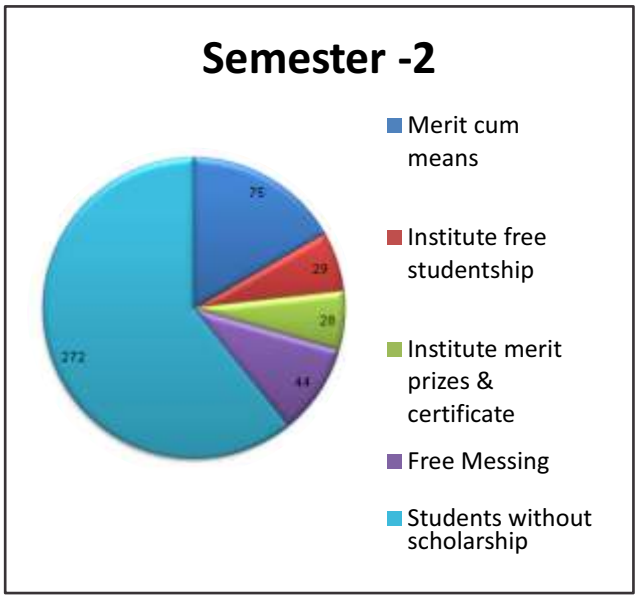
17.4 FREE MESSING

The Institute offers the award of free messing to SC/ST students.

Representation chart of the different scholarships

Sr. No.	Scholarship	Semester -1	Semester -2
1	Merit cum means	108	75
2	Institute free studentship	33	29
3	Institute merit prizes & certificate	28	28
4	Free Messing	44	44 (Tentative)
5	Students without scholarship	244	272





18. DEPARTMENTS, SCHOOL & CENTER

18.1 DEPARTMENT OF CHEMISTRY

Programmes offered : PhD
No. of students : 29
No. of publications : 82

Coordinator: Dr. Rajendra Srivastava

1. **Dr. Avijit Goswami**
   PhD (Heidelberg University, Germany)
   Synthetic organic and polymer chemistry.

2. **Dr. Debaprasad Mandal**
   PhD (Indian Institute of Technology Kanpur)
   Organic and organometallics chemistry.

3. **Dr. Nagaraja C. Mallaiah**
   PhD (Indian Institute of Science, Bangalore)
   Inorganic, organometallics and materials chemistry.

4. **Dr. Narinder Singh**
   PhD (Guru Nanak Dev University, Amritsar)
   Nano - particles and calix [n] arene and tripodal frameworks for chemo-sensor development.

5. **Dr. Prabal Banerjee**
   PhD (National Chemical Laboratory, Pune)
   Synthetic organic chemistry.

6. **Dr. Rajendra Srivastava**
   PhD (National Chemical Laboratory, Pune)
   The design, synthesis and catalytic investigation of functional nanoporous materials and ionic liquids.

7. **Dr. T. J. Dhilip Kumar**
   PhD (Indian Institute of Technology Madras)
   Electronic structure calculations, chemical kinetics and reaction dynamics.

8. **Dr. Tharamani C. N.**
   PhD (Bangalore University, Bangalore)
   Electrochemistry, fuel cells, nanostructured materials, electrocatalysis, metal finishing.

9. **Dr. Yashveer Singh**
   PhD (University of Allahabad, Allahabad)
   Design, development and evaluation of polymeric biomaterials for drug (anticancer), microbicide (HIV-prevention) and biotherapeutic (protein/siRNA) delivery.

❖ Ongoing activities

- Teaching and Research

❖ Thrust areas

- Nanoparticles and calix arene and tripodal frameworks for chemo -sensor development
- Synthetic organic and polymer chemistry
- Organic and organometallics chemistry
- Electronic structure calculations
- Chemical kinetics and reaction dynamics
- Inorganic and molecular materials chemistry
- Synthetic organic chemistry
- The design, synthesis and catalytic investigation of functional nanoporous materials and ionic liquids
- Electrochemistry
- Fuel cells
- Nanostructured materials
- Electrocatalysis
- Metal finishing
- Polymeric biomaterials
- Targeted drug delivery
- PEGylation
- Bioconjugate chemistry
- Noninvasive optical imaging
- Bioinorganic chemistry & chemo-sensor development

❖ Facilities

- Research laboratories for PG students
- 400 MHz NMR (JEOL)
- Single crystal X-ray diffractometer (Bruker CMOS)
- Fluorescence spectrophotometer
- UV-Vis spectrophotometer
- IR Spectrophotometer
- Dynamic light scattering (DLS) based particle size analyzer
- Electrochemical work station
- Surface area analyzer
- Semi-preparative HPCL system (waters)
- Gas chromatography
- Gas chromatography-mass spectrometry (GC-MS) (Model: Shimadzu QP 2010 Ultra)
- Microwave oven (Anton Paar; Multiwave PRO)
- In-house cluster systems:

  4-node, 16-processor AMD opteron rack servers

  2-node, 8-processor Intel Xeon rack servers
- MCR 102 modular compact rheometer
- (Anton Paar) to measure the viscoelastic properties of biomaterials (hydrogels, gels, etc.)
- Sorvall ST 16 R refrigerated centrifuge (Thermo scientific) o carry out centrifugation at low temperatures. Suitable for clinical protocols, cell culture applications, and microplate processing)
- Digital polarimeter (Anton Paar)
- TGA & DSC (Mettler Toledo)
- Glove Box workstation with integrated SPS system

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Dr. Jayanta Haldar Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore	"Bacterial cell membrane: targeting the Achilles' heel to combat drug-resistance and infections"	September 9, 2014
2	Dr. Kamlesh Kumar Technical University Eindhoven, Netherlands	"Synthesis of amylose inclusion complexes and carbon nano-structured materials"	October 29, 2014
3	Dr. Debasis Banerjee Stockholm University, Arrhenius laboratory, Stockholm, Sweden	"Transition metal-catalyzed sustainable processes: highly region and enantioselective synthesis of C-C and C-N bonds"	November 5, 2014
4	Dr. Jaideep Saha, Division of Organic Chemistry, University of Oxford, UK	"Synthetic methods enabling biological studies. A journey from the synthesis of ring-expanded carbohydrates and phosphine catalysis to development of bioreductive prodrugs for cancer"	November 19, 2014
5	Dr. Murugadoss Nanoscale Physics research laboratory, University of Birmingham, Edgbaston, Birmingham, UK	"Advanced nanostructured materials with controlled atomic distribution: A new model system for catalysis"	December 3, 2014
6	Dr. Pankaj Chauhan Institute of Organic Chemistry RWTH Aachen	"Organocatalytic domino/cascade reactions for the asymmetric synthesis of valuable cardo -and heterocyclic compounds"	January 14, 2015
7	Dr. Karunakaran A. Kalesh Department of Chemistry, Imperial College London, UK	"Chemical proteomics: coupling chemistry and biology to unravel drug targets, protein function and posttranslational modification."	February 4, 2015
8	Dr. Alakesh Bisai Indian Institute of Science Education and Research Bhopal	"Total synthesis of architecturally interesting and biologically active alkaloids sharing all-carbon quaternary stereocenters"	March 4, 2015
9	Dr. Sudipta Kumar Sinha University of Delaware, DE, USA	"In silico studies of bio-macro molecules in aqueous solutions"	March 18, 2015

Invited lectures by faculty

1. **Dr. Nagaraja C. M.**
   - "Construction of interpenetrating Metal-Organic Frameworks (MOFs)" in symposium on Chemical Frontiers-2014 organized by Indian Institute of Technology (IIT) Bombay and Jawaharlal Nehru Centre for Scientific Advanced Studies (JNCASR) Bangalore, Majorda Resort, Goa, India, August 17-19, 2014.
2. **Dr. Tharamani C. N.**
   - "Noble-metal free electrocatalysts based on modified carbonaceous materials for the oxygen reduction reaction" at National conference on Nanotechnology and Renewable Energy, New Delhi, India, April 28-29, 2014.
   - "Nitrogen containing carbon material based catalyst for low temperature fuel cells" in Prof. S. M. Mayanna Endowment Lecture at International Conference on Electrochemical Science and Technology (ICONEST)- 2014, organized by Electrochemical Society of India, Indian Institute of Science Bangalore, India, August 7-9, 2014.
3. **Dr. Yashveer Singh**
   - "An introduction to biotechnology, BE (I year)" at University Institute of Engineering, Chandigarh University, Mohali, Punjab, India, October 13, 2014.
   - "PEG-based hydrogels for vaginal microbicide delivery" at Second International Conference on Nanostructured Materials and Nanocomposites, M.G. University, Kottayam, Kerala, India, December 19-21, 2014.
   - "Polymer-based hydrogels and micelles for microbicide delivery to prevent HIV-1 infection" at National seminar on recent advances in materials, GGDSD College, Chandigarh, India, February 21, 2015.
   - "Polymeric nanocarriers for targeted anticancer drug delivery"at Center for Nanoscience and Nanotechnology, Panjab University, Chandigarh, India, March 5, 2015.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Nagaraja C. M.	Barcelona, Spain	Presented a poster "Design of Multifunctional Metal-Organic Frameworks (MOFs)" at Fourth International Conference on Multifunctional, Hybrid and Nanomaterials, March 9-13, 2015.
2	Dr. T. J. Dhilip Kumar	Fritz, Haber Institute, Berlin, Germany	Presented a paper "Frontiers of first-principles simulations: materials design and discovery" at CECAM/ Psik Research Conference, May 5, 2015.
3	Dr. Tharamani C. N.	Ruhr University Bochum, Germany	Visiting faculty: June-July, 2014.

18.2 DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Programmes offered : B. Tech. & PhD
No. of students : B. Tech. : 120
PhD : 10
No. of publications : 10

Coordinator: Dr. Nitin Auluck

1. **Dr. Apurva Mudgal**
   PhD (Georgia Institute of Technology, USA)
   Theoretical computer science, approximation algorithms, theoretical robotics, computational geometry.

2. **Dr. Balwinder Singh Sodhi**
   PhD (Indian Institute of Technology Kanpur)
   Cloud computing, software architecture, design patterns, web technologies, big data, knowledge discovery, distributed systems, EAI and IT security.

3. **Dr. C. K. Narayanan**
   PhD (Arizona State University, USA)
   Activity recognition, pattern recognition, machine learning, pervasive and mobile computing, pervasive health care, assistive and rehabilitative technology.

4. **Dr. Deepti R. Bathula**
   PhD (Yale University, USA)
   Medical image processing and analysis, pattern recognition, machine learning and computer vision.

5. **Dr. Jung Hyun Jun**
   PhD (University of Cincinnati, USA)
   Cyber - physical systems, mobile computing, sensor networks, participatory sensing, wireless networks, energy management.

6. **Dr. Nitin Auluck**
   PhD (University of Cincinnati, USA)
   Scheduling and resource allocation in parallel and distributed systems, real-time systems.

7. **Dr. Sudarshan Iyengar**
   PhD (Indian Institute of Science Bangalore)
   Network science, theoretical computer science, cryptography evolutionary psychology.

❖ Ongoing activities

- Teaching and research
- Six research scholars in the department working on problems in theory and systems.

❖ Thrust areas

- Parallel and distributed computing
- Approximation algorithms
- Image processing and pattern recognition
- Computational geometry
- Cloud computing and software architecture
- Performance modeling
- Cryptography
- Machine learning and artificial intelligence
- Network science
- Sensor networks

❖ Facilities

- 3 UG computer labs, 1 PG research lab, HPC facility (central facility), access to IEEE and ACM journals and conferences

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Dr. Dharma Agrawal University of Cincinnati, USA	"Introduction to wireless mobile systems and Wireless sensor networks"	June 5-6, 2014
2	Dr. Ravi Sundaram Northeastern University, USA	"From Akamai to Maygh – an overview for content delivery"	July 23, 2014
3	Dr. Sumantra Datta Roy Indian Institute of Technology Delhi, India	"Early detection of Parkinson's disease through data analytics and machine learning"	October 17, 2014

Invited lectures by faculty

1. **Dr. Balwinder Singh Sodhi**
   - Delivered a short course for SWAP, Indian Institute of Technology Kanpur, July 2 - 4, 2014.
   - Guru Nanak Dev Engineering College, July 8, 2014.
   - "Technologies for Autonomous Soldier Assist System" Jadavpur University, Kolkata, August 7- 8, 2014.
   - "2nd IEEE International Conference on MOOCs" Innovation and Technology in Education, Thapar University, Patiala, December 19, 2014.
2. **Dr. C. K. Narayanan**
   - "Activity Learning for Real-World Applications" Washington State University, May 2014.

3. **Dr. Deepti R. Bathula**
   - "An Introduction to the exciting field of NeuroImaging Expert Lecture" WIE/ACM-W/IEEE Chapters, Thapar University, Patiala, Punjab, India, October, 2014.
   - "Medical Image Analysis: Role of Image Segmentation Expert Lecture" Institute of Electronics and Telecommunication Engineers Student Chapter, Chitkara University, Rajpura, Punjab, India, March, 2015.
   - "MRI Modalities: Emerging tools for studying brain development, speaker, industry institute interaction week" Punjab Engineering College, University of Technology, Chandigarh, India, April, 2015.
4. **Dr. Nitin Auluck**
   - Punjab University, March 16-17, 2015.
5. **Dr. Sudarshan Iyengar**
   - "Crowd sourced Knowledge Building" Thapar University, Patiala, November 19, 2014.
   - "The Next Age Textbook Technology, Centre for Innovation in Public Systems (CIPS)" Hyderabad November 29, 2014.
   - "Understanding Crowd sourced Knowledge Building" Research seminar, Game theory and networks, Dibrugarh University, December 10, 2014.
   - "Reservations: A Graph Theoretic Perspective" National conference on Graph Theory, Poornaprajna College, Udupi, Karnataka, January 3, 2015.
   - "Crowd sourced learning platforms" Indian Statistical Institute Kolkata, January 20, 2015.
   - "ICT in transforming education" Bahra University, Shimla, February 27, 2015.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Sudarshan Iyengar	USA	i) Complenet workshop, New York, March 25-28, 2015. ii) Duke University, April 1-5, 2015.
2	Dr. Jung Hyun Jun (Peter)	USA, South Korea	i) International Conference on Network Protocols, North Carolina, October 21, 2014 and University of Cincinnati, USA, October 27, 2014. ii) Sungkyunkwan University, Seoul, South Korea, March 2015.

18.3 DEPARTMENT OF ELECTRICAL ENGINEERING

Programmes offered : B. Tech. & PhD
No. of students : B. Tech.: 143
PhD : 15
No. of publications : 27

Head of the Department: Dr. J. S. Sahambi

1. **Dr. C. Chakradhar Reddy**
   PhD (Indian Institute of Science Bangalore)
   Mechanism of conduction and breakdown in dielectrics; space charges in dielectrics; power equipment (transformers, machines, HVDC/AC cables and accessories); nano-composite dielectrics.

2. **Dr. J. S. Sahambi**
   PhD (Indian Institute of Technology Delhi)
   Signal processing, image processing, wavelets, biomedical image processing, embedded systems, DSP based systems.

3. **Dr. Ranjana Sodhi**
   PhD (Indian Institute of Technology Kanpur)
   Wide area monitoring and control systems, application of optimization techniques to power systems, voltage stability assessment and control, power system state estimation, power system restructuring.

4. **Dr. Ravibabu Mulaveesala**
   PhD (Indian Institute of Technology Delhi)
   Infrared vision and video processing, signal and image processing techniques for non-invasive imaging methods, photo - thermal diagnostics of solids, non-destructive testing & evaluation.

5. **Dr. Ravi Shankar R. Velampati**
   PhD (University of Connecticut, USA)
   Nanoelectronic device fabrication and characterization, nanocrystal nonvolatile memory devices, quantum dot photovoltaic devices, rad-hard devices .

6. **Dr. Rohit Y. Sharma**
   PhD (Jaypee University of Information Technology, Solan)
   Design of high-speed chip-chip and 3d interconnects communication schemes for multi-core architecture, technology development for high-performance electrical connectivity.

7. **Prof. Sanjoy Roy**
   PhD (University of Calgary, Canada)
   Renewable energy systems: planning and economics, decision making in power network management.

8. **Dr. Subrahmanyam Murala**
PhD (Indian Institute of Technology Roorkee)
Content based image retrieval, medical imaging and object tracking

❖ Ongoing activities

- SMDP Chips to Systems Project
- Visvesvaraya PhD Scheme for Electronics and IT

❖ Facilities

1. Experimental facilities in the area of high voltage
   - Space charge measurement equipment
   - Femto ampere current measurement facility
   - High voltage arbitrary waveform generator
   - High voltage DC generator, 140 kV
   - Capacitance and Tan δ measurement facility
   - High voltage Transformers (200kV, 50 Hz)
   - Lightning/Switching Impulse Generator
   - Partial discharge measuring system

2. Experimental facilities in the area of power quality
   - Synchrophasor measurements facility**:** Phasor Measurement Unit (SEL 421)

3. Computational/Analytical research facilities

a) Research facilities in the area of VLSI design

The department procured latest and most advanced EDA tools**,** FPGA boards and circuit solvers for analyzing 2D/3D integrated circuits and systems**.**

These include:

- Full-custom Cadence Design Suite (25 users)
- Xilinx Virtex-5 FPGA boards (8 nos.)
- HDL simulator (25 users)
- Ansys high-frequency and low-frequency EM solvers (25 and 5 users, respectively)
- A dedicated 3D simulator, Synopsys TCAD-Full university bundle and HSPICE simulator.

All the above software tools are hosted on two dedicated servers.

b) Computational research facilities in the area of Power engineering:

For transient and other time domain network studies, the laboratory has networked twenty five user version of the PSCAD/EMTDC 4.2. This additionally allows time domain simulation of power electronic circuits. including applications to drives. HVDC and FACTS. HVDC and FACTS. Apart from this, the department has also got the Eurostag software for simulation of power system dynamics.

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Prof. M. Jagadesh Kumar, Indian Institute of Technology Delhi	"Low power green transistors: Tunnelling our way through the barriers"	September 22, 2014
2	Prof. Shouribrata Chatterjee, Indian Institute of Technology Delhi	"Multi –band matching networks"	March 16, 2015
3	Prof. Udaya Kumar, Indian Institute of Science Bangalore	i. "Measurement of impulse currents and charges on insulation" ii. "Lightning protection of power system"	April 4, 2014

Invited lectures by faculty

Dr. C. C. Reddy

- "Failure of electric cables: Some tests to prove thermal mechanism" Sumitomo Electric Cooperation, Osaka, Japan, May 2014.
- "Space charges and electric fields in dielectrics some new developments" J-Power Systems Corporation, Hitachi, Japan, May 2014.
- "Effect of interfacial area and inter-filler distance on the performance of nano-composite
- dielectrics" ICNM 2014, Kottayam, Kerala, December 2014.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. C. C. Reddy	Japan	1. IEEE-ISEIM 2014 conference, Niigata, June 1-5,2014. 2. CIGRE-AORC 2014, Ichigaya, May 25-29, 2014. 3. Niigata University, June 6, 2014 . 4. Sumitomo Electric Company, Osaka, May 30-31, 2014. 5. J-Power Systems Corporation, Hitachi, May 29, 2014.

18.4 DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Programmes offered : PhD
No. of students : 10
No. of publications : 37

Coordinator: Dr. Somdev Kar

1. **Dr. Kamal Kumar Choudhary**
   PhD (University of Leipzig, Germany)
   Psycho/neurolinguistics (language processing, neurocognition/ neuroscience of language, eeg), typology, syntax, cognitive science, NLP.

2. **Dr. Prema Rajagopalan**
   PhD (Indian Institute of Technology Kanpur)
   Gender studies, postcolonial studies, and modern fiction.

3. **Dr. Rano Ringo**
   PhD (Indian Institute of Technology Roorkee)
   Gender studies, postcolonial studies, and modern fiction.

4. **Dr. Samaresh Bardhan**
   PhD (Jadavpur University)
   Financial markets, credit related issues, industrial finance, development economics, applied econometrics.

5. **Dr. Smruti Ranjan Behera**
   PhD (Delhi School of Economics)
   Applied Econometrics, panel data econometrics, industrial economics, macroeconomics, and international economics.

6. **Dr. Somdev Kar**
   PhD (University of Tübingen, Germany)
   Phonetics, phonology, optimality theory, morphology, speech processing, nlp.

❖ Ongoing activities

- Teaching and Research
- Industrial Consultancy

❖ Thrust area

- Psycho/Neurolinguistics (Language processing, Neurocognition/ Neuroscience of Language, EEG), Typology, Syntax, Cognitive Science, NLP
- Sociology of Science and Technology Gender and Science and Technology Sociology of Development; Built Environment and Society
- Gender studies, Postcolonial studies and Modern fiction
- Financial Markets, Credit Related Issues, Industrial Finance, Development Economics, Applied Econometrics

- Applied Econometrics, Panel Data Econometrics, Industrial Economics and International Economics
- Phonetics, Computational Phonology, Optimality Theory, Speech Processing, Natural Language Processing, Morphology

❖ Lab facilities

- Language and Linguistic Lab
- EEG Lab

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Dr. Bitasta Das Indian Institute of Science, Bangalore	"Science and Humanities: Exploring the Intersections"	February 9, 2015
2	Prof. Pushpinder Syal Panjab University	"Sign and Image in Communication"	November 28, 2014
3	Dr. Pritha Chandra Indian Institute of Technology Delhi	"Ergativity and the Micro/Macro variation Debate"	January 23, 2015
4	Dr. Tanmoy Bhattacharya University of Delhi	"Ecology of the Syntax/ Thought"	March 2, 2015
5	Dr. Upinder Sawhney Panjab University	"Economic Environment for Business in India–Reforms and Challenges"	February 16, 2015
6	Dr.Vivekananda Mukherjee Jadavpur University, Kolkata	"Trade Liberalisation and Corruption"	July 21, 2014

Invited lectures by faculty

1. **Dr. Kamal K. Choudhary**
   - "Verbal Morphology in Maithili" Regional Symposium on Natural Language Processing (regICON-2015), IIT (BHU) Varanasi, March 21-22, 2015.
   - "Language in the brain" Ninth Students' Conference of Linguistics in India, IIT Delhi, March 14-15, 2015.
2. **Dr. Prema Rajagopalan**
   - "Social Exclusion of Women in Science" Indian Institute of Information Technology Allahabad, November 28, 2014.
   - "Maximising the Potential of Underutilized Fruits in Knowledge Economy - Case of Watermelon in India" Mahatma Gandhi Kashi Vidyapeeth, Varanasi, Uttar Pradesh, November 29, 2014.

- "Science and Innovation: Some concerns in India" Indian Institute of Technology, Mandi, March 30-31, 2015.

3. **Dr. Somdev Kar**
   - "Optimality Theory: A theory of variation rather than a theory of universals" Indian Statistical Institute, Kolkata, December 23, 2014.
4. **Dr. Smruti R. Behera**
   - "Capital mobility, current account dynamics, and saving-investment relationship in the newly industrialized countries" Indian Institute of Foreign Trade, December 18-19, 2014.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Prema Rajagopalan	Japan	Cluster Dependency, Social Capital and Social Innovation: Insights from the Engineering and Plastic Clusters in Chennai, South India at the 18th ISA World Congress of Sociology in the Research Committee Sociology of Work.
2	Dr. Rano Ringo	Japan	A Métis Woman's Quest for identity in Maria Campbell's The Half- breed. The Fifth Asian Conference on the Arts and Humanities organized by IAFOR (The International Academic Forum).
3	Dr. Samaresh Bardhan	Greece	Macroeconomic and bank-specific determinants of non-performing assets of Indian banks: A dynamic panel data approach at the 13th European Economics and Finance Society Conference.
4	Dr. Somdev Kar	Switzerland	XV UNL School on the development of natural language grammars for information retrieval, UNDL Foundation Office, July 21-25, 2014.

18.5 DEPARTMENT OF MATHEMATICS

Programmes offered : PhD
No. of students : 15
No. of publications : 23

Coordinator: Dr. M. Prabhakar

1. **Dr. Arvind Kumar Gupta**
   PhD (Indian Institute of Technology Roorkee)
   Mathematical modelling of traffic flow, cellular automata.

2. **Dr. Chittaranjan Mishra**
   PhD (University of Antwerp, Belgium)
   Computational finance, numerical solution of financial option pricing equations, HPC in finance.

3. **Dr. G. Sankara Raju**
   PhD (Indian Institute of Technology Madras)
   Functional analysis, operator theory, matrix analysis .

4. **Prof. J. K. Sridhar**
   PhD (Indian Institute of Technology Bombay)
   Numerical analysis, mathematical modelling of dynamic systems, theory of elasticity, systems and control, data analysis.

5. **Dr. M. Prabhakar**
   PhD (Indian Institute of Technology Delhi)
   Low-dimensional topology.

6. **Dr. Manju Khan**
   PhD (Indian Institute of Technology Delhi)
   Algebra.

7. **Dr. Manoranjan Mishra**
   PhD (Indian Institute of Science, Bangalore)
   Fluid dynamics, scientific computing.

8. **Dr. Partha Sharathi Dutta**
   PhD (Indian Institute of Technology Kharagpur)
   Nonlinear dynamics, mathematical biology, theoretical ecology.

9. **Dr. S. C. Martha**
   PhD (Indian Institute of Technology Guwahati)
   Mathematical modeling on water waves phenomenon, integral equation.

10. Dr. Tapas Chatterjee

PhD (The Institute of Mathematical Sciences, Chennai)
Number Theory

❖ Ongoing activities

- Teaching & Research

❖ Thrust areas

- Algebra
- Dynamical Systems
- Fluid dynamics
- Cellular Automata
- Scientific Computing
- Integral equation
- Mathematical modeling
- Low-dimensional Topology
- Theory of Elasticity
- Systems and Control
- Number Theory
- Functional analysis
- Operator theory
- Matrix Analysis
- Computational Finance
- GPU computing

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Prof. Akio Kawauchi Osaka City University Advanced Mathematical Institute, Japan	"Unknotting notions for spatial graphs"	October 27, 2014
2	Dr. Dilbag Singh Panjab University, Chandigarh	"Guided waves for sizing defects in thin plates"	April 2, 2014
3	Dr. Hideo Takioka Osaka City University, Japan	"On the arc index of a knot"	October 28, 2014
4	Dr. Kengo Kawamura Osaka City University, Japan	"On knots and the clasp number"	October 28, 2014
5	Dr. Manoj Kumar Harish-Chandra Research Institute (HRI), Allahabad	"Central quotient and commutator subgroup of a group	May 26, 2014
6	Dr. Sarath Sasi University of West Bohemia Pilsen	"Weighted eigenvalue problem in the exterior domain"	January 13, 2015
7	Prof. Savita Bhatnagar Panjab University, Chandigarh	"Multipliers of Semi group Algebras with Order Convolution"	September 26, 2014

8	Prof. Seiichi Kamada Osaka City University, Japan	"Braid group: A graphical method of transforming braid words"	October 30, 2014
9	Prof. Sudeshna Banerjea Jadavpur University, Kolkata	"Theory of water waves and application of singular integral equations"	January 8, 2015
10	Prof. Sudeshna Sinha Indian Institute of Science Education and Research Mohali, Punjab	"Dynamics of Rewired Networks"	August 29, 2014
11	Prof. Ulrike Feudel Theoretical Physics and Complex Systems Research Group, University of Oldenburg, Germany	"Pattern formation in marine systems: The interplay of hydrodynamic flows and biological growth"	March 10, 2015
12	Dr. Vinay Kanwar Panjab University, Chandigarh	"Geometrically constructed iterative methods for the solution of nonlinear equations"	September 30, 2014
13	Prof. Valeriy Bardakov Sobolev Institute of Mathematics, Novosibirsk, Russia	"Knot invariants: From colorings to groups"	November 7, 2014

Invited lectures by faculty

1. **Dr. Arvind Kumar Gupta**
   - "An introduction to fuzzy sets and numbers" National Workshop on Research Tools in Mathematics, Mata Gujri College, Fatehgarh Sahib, December 22, 2014.
   - "Computational Partial differential equation with Matlab" National Workshop on Research Tools in Mathematics, Mata Gujri College, Fatehgarh Sahib, December 20, 2014.
   - "Modeling Of Stochastic Transport Processes: Vertical Cluster Mean Field Approach for Two-Channel Tasep" Ramakrishna Mission Vivekananda University, Belur Math, Howrah, Kolkata, West Bengal, November 8, 2014.
2. **Dr. G. Sankara Raju**
   - "Recent Advances In Operator Theory And Operator Algebras" Indian Statistical Institute Bangalore, December 9-19, 2014.
3. **Dr. Manoranjan Mishra**
   - "Transient Growth of perturbations in miscible viscous fingering" ESPCI, ParisTech, France, December 18, 2014.
   - "Chromatography - A Fluid Dynamic View" the Refresher Course in Chemistry, UGC Academic Staff College, University of Hyderabad, Hyderabad, September 8, 2014.
4. **Dr. S. C. Martha**
   - "Boundary Value Problems involving Fluid Flow in a Channel Conference on Partial Differential Equations" LNM Institute of Information Technology, Jaipur, December 10-11, 2014.

- "Boundary Value Problems Arising in Multi-Layered Fluid" National Seminar on Advances in Mathematical Analysis and Its Applications, National Institute of Science & Technology, Berhampur, December 19-20, 2014.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Arvind Kumar Gupta	South Korea	International Conference of Mathematics 2014, August 12-21, 2014
2	Dr. M. Prabhakar	Japan	Department of Science and Technology-Japan Society for the Promotion of Science Collaborative Project, Knot theory, February 2-14, 2015
3	Dr. M. Prabhakar	South Korea	International Conference of Mathematics 2014, August 12-21, 2014
4	Dr. M. Prabhakar	Russia	Knots, braids and auto morphism groups, July 21-25, 2014
5	Dr. Manoranjan Mishra	Belgium	Invited Talk, December 3-6, 2014
6	Dr. Manoranjan Mishra	France	Visited Scientist, November 24 – December 23, 2014
7	Dr. Manoranjan Mishra	Taiwan	International Conference on Finite Elements in Flow Problems (FEF 2015), March 16-18, 2015
8	Dr. S. C. Martha	South Korea	International Conference of Mathematics 2014, August 12 – 21, 2014

18.6 DEPARTMENT OF PHYSICS

Programmes offered : PhD
No. of students : 14
No. of publications : 39

Head of Department: Prof. P. K. Raina

1. **Dr. Asoka Biswas**
   PhD (Physical Research Laboratory, Ahmedabad)
   Quantum computation and information, cavity opto-mechanics.

2. **Dr. Kailash Chandra Jena**
   PhD (Indian Institute of Technology Madras)
   Sum frequency generation vibrational spectroscopy, atr-ftir spectroscopy, interfacial water structure, air/water, liquid/liquid, and solid/biopolymer/water interfaces, protein folding, bio mimicking model systems, surfactant.

3. **Dr. Mukesh Kumar**
   PhD (Indian Institute of Technology Delhi)
   Renewable energy materials development, combinatorial thin films materials and sensors.

4. **Prof. P. K. Raina**
   PhD (Indian Institute of Technology Kanpur)
   Nuclear physics and astrophysics.

5. **Dr. Pushpendra P. Singh**
   PhD (Inter-University Accelerator Center, New Delhi / A. M. University)
   Experimental nuclear physics & its applications.

6. **Dr. Rakesh Kumar**
   PhD (Indian Institute of Technology Bombay)
   Experimental condensed matter physics.

7. **Dr. Rajesh V. Nair**
   PhD (Indian Institute of Technology Bombay)
   Photonic band gap materials, nano-optics and cavities in nanostructures.

8. **Dr. Subhendu Sarkar**
   PhD (Saha Institute of Nuclear Physics, Kolkata)
   Low energy ion beam physics, fabrication of nanostructures on semiconductor surfaces using ion beams and secondary ion mass spectroscopy.

9. **Dr. Shubhrangshu Dasgupta**
   PhD (Physical Research Laboratory, Ahmedabad)
   Physical modeling in quantum optics, nano-systems, and decoherence in physical systems.

❖ Ongoing activities

- Teaching & Research

❖ Thrust areas

- Thin film Solar cells
- Flexible thin films/nanostructures for renewable energy
- Transparent conducting electrode and sensors
- Material modifications and machining with ion beams
- Physics of graphene and nano-devices
- Low dimensional strongly correlated electron systems
- Nuclear reactions, spectroscopy and astrophysics
- Neutrino Physics
- Decoherence in quantum systems
- Quantum information in many-body system
- Implementation of quantum computation in physical systems
- Coherent control in atoms and molecules
- Energy transfer in bacterial photosynthesis
- Sum Frequency Generation Vibrational Spectroscopy
- ATR-FTIR Spectroscopy
- Interfacial water structure
- Protein folding
- Air/Water, Liquid/Liquid and Solid/Biopolymer/Water
- Bio Mimicking Model Systems
- Photonic crystals
- Disordered nanostructures
- Nano-lasers, Metal-dielectric nanostructures
- Micro/nano cavities

❖ Facilities

New labs started in department

a) S. N. Bose Physics Research Complex

i. UV-Vis-NIR Spectrophotometer

Procured a high-end spectrophotometer in the UV, visible and NIR regions for the optical characterization of various kinds of materials which includes photonic nanostructures and solar cells. This facility is useful for many research activities in the institute involving synthesis of materials to applications. This instrument is capable for measuring reflectivity at different angles of incidence, absorption/transmission of light and diffuse scattering using an integrating sphere.

ii. NuSTaR (Nuclear STructure and Reactions) Research Laboratory

Aiming to detect different reaction products, a detector setup named "RUDRA - Ropar Unified Detectors for Reaction-products Analysis" is in order at NuStaR research laboratory. The procurement of different detectors and accessories is underway. RUDRA is supposed to be a flexible array of detectors. Each module comprises a set of detectors for the energy loss (ΔE), residual energy (Eres) and position measurement of the reaction products. This setup will be capable of measuring, (i) position of reaction

products (x,y) which can be translated into the scattering angles of the beam/target-like-particles in a nuclear reaction, and (ii) energy loss ΔE and Eres to derive Z and mass A, respectively. In the first phase of development RUDRA-0, four CANBERRA/ORTEC made E-ΔE telescopes, two high purity Ge–detectors and one CD detectors will be commissioned at IIT Ropar in very near future. Four E-ΔE telescopes and four CAlometer Telescope (CATE) Si-CsI(Tl) telescopes, each comprises a position sensitive Si-pin detector and a corresponding CsI-detector coupled to a photodiode, procured from GSI Helmholtz Centre for Heavy Ion Research GmbH, Darmstadt Germany are under testing with beam at IUAC New Delhi. Thanks to GSI for landing these detectors to build such a device at IIT Ropar for collaborative experiments and to train UG/PG students of the institute.

iii. Nonlinear Light Scattering & Biophotonics Laboratory (NLSBL)

Sum Frequency Generation (SFG) Vibration Spectrometer is going to be installed very soon in NLSBL at IIT Ropar. This facility is coming under central facility grant IIT Ropar. SFG is a nonlinear optical technique and is extremely surface sensitive and chemically specific. It allows, researchers to probe the thin layer of a few atoms or molecules near the interface. It can be used to probe a wide range of molecular-level conformation and structural phenomena of various molecules at different planar interfaces like, solid/biopolymer/liquid, liquid/liquid, air/solid/liquid.

iv. Functional and Renewable Energy Materials Laboratory (FREML)

Confocal DC/RF sputtering system
Soldering station
Low temperature measurement facility

v. Laboratory for Nano-scale Optics and Meta - materials (LaNOM)

Engineering the light-matter interactions in nano-scale photonic structures is an active area of research due to its fundamental importance in understanding the non-trivial nature of light transport and emission process. This has eminent opportunities in low-threshold lasing, solid-state lighting, single photon generation, photonic switching, and solar energy harvesting. We are developing a state-of-art photonic laboratory to study the fundamental light-matter interactions in nano-scale structures. The procurement of lasers, detectors, optics, and opto-mechanics are done and the lab will be fully operational in few months.

b) <u>DC/RF Magnetron Sputtering Lab</u>

- Materials deposition Laboratory (MDL)
- Spin coater
- Ultrasonicator
- Millipore water system
- Microbalance
- Magnetic stirrer with heater
- High Temperature Vacuum Furnaces
- Optical Microscope
- High Performance Computing (HiPerCom)

i. Computational Electromagnetics
ii. Computational Biophysics
iii. Monte-Carlo Simulations

- Ab initio electronic structure calculations
- Electronic band structure calculations of 2D and 3D materials
- In-line, on-line data transfer and analysis

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Prof. Anil Kumar, Academy of Scientific and Innovative Research (AcSIR)	"Scientific Discussion on Gas Sensor"	February 13, 2015
2	Dr. Ajay Soni, Indian Institute of Technology Mandi	"Scientific Discussion"	July 15, 2014
3	Dr. Chary Rangacharyulu, University of Saskatchewan, Canada	"Laser Compton Scatter MeV Photons at Light Sources for Nuclear and Allied Sciences"	May 26, 2014
4	Prof. Charry Rangacharyulu, University of Saskatchewan, Canada	"Collaboration to build an inverse Compton scattering setup at CAT Indore"	March 4-15, 2015
5	Dr. Deshdeep Sahdev, Indian Institute of Technology Kanpur	"Indigenous Technology in a Globalized World: A Case Study or Resolving Atoms in our Backyards"	April 10, 2014
6	Dr. Deshdeep Sahdev, Indian Institute of Technology Kanpur	"Colloquium Resolving the Properties of Solids down to Single Atoms in our Own Backyards"	October 17, 2014
7	Prof. G. Rajaekaran, Institute of Mathematical Sciences, Chennai	"Colloquium Standard Model, Higgs Boson and What Next ?"	August 29, 2014
8	Prof. Dr. Habil. Hans-Juergen Wollersheim, Gesellschaft fii Schwerionenforschung (GSI), Darmstadt, Germany	"Colloquium Heavy Ion Research at GSI Helmholtz Centre and the new international FAIR accelerator facility (Towards the missing information about the evolution of the Universe)"	October 10, 2014
10	Dr. Haridas Pai Technical University Darmstadt, Germany	"Low-lying dipole strength through NRF in the N = 28 shell-closure	October 16, 2014

11	Prof. Haruo Okhuma, Spring 8, Japan	"Seminar on accelerator technologist"	December 19, 2014
12	Dr. Prakash D. Naik Radiation and Photochemistry Division, Bhabha Atomic Research Centre, Mumbai	"Colloquium Laser spectroscopy for investigation of important atmospheric reactions"	October 31, 2014
13	Dr. Sumanta Das Niels Bohr Institute, Copenhagen, Denmark	"Hybrid quantum optics: from nuclear clock to efficient quantum repeaters"	December 5, 2014

Invited lectures by faculty

1. **Dr. Mukesh Kumar**
   - "National Conference on Nanotechnology and Renewable Energy" Jamia Millia Islamia, Delhi, April 28-29, 2014.
   - "Applications of nanostructures in photovoltaics" India-Finland workshop, Indian Institute of Technology Delhi, Delhi, October 20-21, 2014.
2. **Dr. Pushpendra P. Singh**
   - "Unexpected Onset of Incomplete Fusion at Near Barrier Energies" International Workshop on Laser Compton Scattering Gamma Rays at Electron Storage Rings, University of Saskatchewan and Canadian Light Source, Saskatoon, SK, Canada, November 7-11, 2014.
   - "Dark Matter, Hadron Physics and Fusion Physics" Low energy incomplete fusion: International Conference, Messina, Italy, September 24-26, 2014.
   - "Reconciliation of the famous Mass asymmetry systematic for low energy incomplete fusion" NUBA Conference, Nuclear Physics and Astrophysics, Antalya, Turkey, September 15-21, 2014.
3. **Dr. Rajesh V. Nair**
   - "Instruments Research and Development Establishment Science Forum" DRDO, Dehradun, India, February 6, 2015.
   - "Current developments in atomic, molecular, optical and nano physics with applications" CDAMOP 2015, Delhi, India, March 11-14, 2015.
4. **Dr. Rakesh Kumar**
   - "TU9-IIT Mandi, Emerging Semiconductor Technologies" Indian Institute of Technology Mandi, Himachal Pradesh, September 26-27, 2014.
   - "Nano-structured materials and Nanocomposites" Kottayam , Kerala, December 19-20, 2014.
   - "Indo-US workshop on Graphene and other two dimensional materials" Solid State of Structural Chemistry Unit, Indian Institute of Science Bangalore, India, December 22-24, 2014.
   - "Workshop on high performance computing" Inter University Accelerator Centre, New

Delhi, March 11-13, 2015.

5. **Dr. S. Dasgupta**
   - "Quantum Physics" Chandigarh University, Gharuan (Punjab), February 24, 2015.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Asoka Biswas	Belgium	"Inseparability criteria based on bipartitions of N-spin systems" Central European Workshop on Quantum Optics, Brussels, June 23-27, 2014.
2	Prof. P. K. Raina	Italy	EW Interactions and Unified Theories session of the 50th Rencontres de Moriond, March 14-21, 2015.
3	Dr. Pushpendra P. Singh	Germany	1. "GSI Helmholtz Centre for Heavy Ion Research GmbH" NuSTAR collaboration towards the development of upcoming Facility for Anti-Proton and Ion Research (FAIR), December 22, 2014 to January 12, 2015. 2. "International PreSPEC experiment of NuSTAR Collaboration at the GSI Helmholtz Centre for Heavy Ion Research" multi-national FAIR GmbH, April 4 - 19, 2014.
4	Dr. Rajesh V. Nair	Spain	"23rd International Commission on Optics annual" August 25-29, 2014.
5	Dr. S. Dasgupta	Belgium	"Sharply tunable group velocity in alkali vapor using a single control field and a polarizer" Central European Workshop on Quantum Optics, June 23-27, 2014.

18.7 SCHOOL OF MECHANICAL, MATERIALS & ENERGY ENGINEERING

Programmes offered : B. Tech. & PhD
No. of students : B. Tech.: 154
PhD : 26
No. of publications : 51

Coordinator: Dr. Navin Kumar

1. **Dr. Anupam Agrawal**
   PhD, Indian Institute of Technology Kanpur
   Manufacturing processes advanced forming techniques.

2. **Dr. Anshu Dhar Jayal**
   PhD, University of Utah
   Sustainable manufacturing technologies.

3. **Dr. Dhiraj Kumar Mahajan**
   PhD, Indian Institute of Technology Kanpur
   Simulation and experiment assisted development of high performance elastomeric and polymeric materials, mechanics and physics of polymers, adhesion at polymer-solid interfaces, fatigue failure of polycrystalline metals under aggressive environment with immediate focus on hydrogen based degradation of steels.

4. **Dr. Harpreet Singh**
   PhD, Indian Institute of Technology Roorkee
   Surface engineering-degradation of materials, high temperature corrosion and its prevention, slurry erosion of hydraulic turbines and its control, biomedical coatings.

5. **Dr. Himanshu Tyagi**
   PhD, Arizona State University USA
   Thermo-fluids, bio-heat transfer, nano fluids, nano scale heat transfer, clean & sustainable energy, solar energy, energy storage, turbulent flows, combustion, thermodynamics, biomass pyrolysis & gasification, ignition properties of fuels containing nano-particles, thermal management and packaging of micro-electronic devices.

6. **Dr. Jitendra Prasad**
   PhD, Michigan State University USA
   Biomechanics, bone fracture healing, mechanotransduction, structural and multidisciplinary design optimization, computational mechanics, and agent based modeling.

7. **Prof. M. K. Surappa**
   PhD, Indian Institute of Science Bangalore
   Solidification processing of metal matrix composites and tribology.

8. **Dr. Navin Kumar**
   PhD, Indian Institute of Technology Delhi
   Mechanics and dynamics of Bio and Nano materials and structures, computational and experimental studies on Nano and Bio Material Characterization, Noise and Vibration control, Fault diagnosis.

9. **Dr. Prabir Sarkar**
   PhD, Indian Institute of Science Bangalore
   Product design, sustainability and eco design, creativity and innovation, engineering design and industrial design, manufacturing.

10. **Dr. Prabhat Kumar Agnihotri**
    PhD, Indian Institute of Technology Kanpur
    Modelling, processing and characterization of nanomaterials and their composites, Multiscale modelling of deformation behaviour of materials, dislocation dynamics simulations, fracture mechanics.

11. **Dr. Rakesh Kumar Maurya**
    PhD, Indian Institute of Technology Kanpur
    HCCI and low temperature combustion for IC engines, alternative fuels, engine emission control, engine management systems.

12. **Dr. Ramjee Repaka**
    PhD, Indian Institute of Technology Kharagpur
    Heat transfer, thermal engineering, bio heat transfer.

13. **Dr. Ranjan Das**
    PhD, Indian Institute of Technology Guwahati
    Thermal and fluids engineering, optimization, renewable energy.

14. **Dr. Ravi Mohan Prasad**
    PhD, Technische Universität Darmstadt, Germany
    Polymer-derived porous ceramics and nanocomposites, Ceramic membranes for hydrogen purification, chemiresistor gas sensors, photocatalysts for wastewater decontamination, hydrogen storage materials.

15. **Dr. Satwinder Jit Singh**
    PhD, Indian Institute of Science Bangalore
    Applied mechanics, numerical methods.

16. **Dr. Srikant Sekhar Padhee**
    PhD, Indian Institute of Science Bangalore
    Variational asymptotic method, multifunctional and functionally graded composites.

17. **Dr. Vishwajeet Mehandia**
    PhD, Indian Institute of Science Bangalore
    Complex fluids (Active suspensions), dynamics of granular materials, biophysics (active cellular processes, physics of tissue morphology).

❖ Ongoing activities

- UG Teaching

❖ Thrust areas

- Design and Analysis, Manufacturing and Materials, Thermal Engineering, Biomedical Engineering

❖ Facilities

- Scanning Probe Microscope (SPM)
- Atomic Force Microscope (AFM)
- Scanning Electron Microscope (SEM)
- Energy Dispersive Spectroscopy (EDS)
- X-Ray Diffractometer (XRD)
- Nano Indenter
- High-end Optical Microscope
- CNC Vertical Milling Machine and Lathe centre
- Melting Furnace (Induction)
- CNC Wire - cut EDM Machine
- Universal Testing Machine
- Universal Hardness & Micro-hardness Tester
- Planetary Milling Machine
- 3-D Printer
- Machinery Fault Simulator
- Dynamometer (Milling & Lathe)
- Gas Turbine System & Centrifugal Flow Control System
- Particle Size analyzer (DLS)
- Electrodynamic Vibration Test System
- Kuka Robot Agilus Series
- Stir Casting Furnace
- Coordinate Measuring Machine Universal Tribometer

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Prof. C. E.Veni Madhavan, Indian Institute of Science Bangalore	"Mash Cash Tales: Hashcash, Bitcoin, Primecoin and VMcoin"	September 26, 2014
2	Prof. Christopher Berndt , Swinburne University of Technology, Melbourne, Australia	"Latest Developments in Thermal Spray"	March 31, 2015
3	Dr. Dhiraj V. Patil, University College London	"Coupled phase-field and lattice Boltzmann simulations for electro-deposition in Zn-MnO2 batteries"	March 31, 2015
4	Dr. Harsh Chaturvedi, Indian Institute of Science Education and Research (IISER) Pune	"Optical effects in Single Walled Carbon Nanotubes in Solution and as fabricated devices"	February 20, 2015
5	Dr. Indrajit Chakraborty, Indian Institute of Technology Guwahati	"Modeling aspects of multiphase flow simulations: bubble and drop dynamics"	February 26, 2015

6	Dr. M. S. Chandrasekar, Scientific Officer-G, Indira Gandhi Centre for Atomic Research (IGCAR) Kalpakkam	"Safety in Nuclear Power Plants"	May 21, 2014
7	Prof. M. R. Ravi, Indian Institute of Technology Delhi	"Energy Technologies and Rural Applications"	March 13, 2015
8	Dr. Mohit Sharma, Institute of Materials Research and Engineering, Singapore	"Interfacial strengthening of advanced fiber reinforced polymer nanocomposites for offshore and prosthesis applications"	October 22, 2014
9	Dr. Mukesh Kumar, National Institute for Materials Science (NIMS), Tsukuba, Japan	"Computational modeling to understand, describe, and design materials for various applications"	February 6, 2015
10	Prof. P. N. Rao, University of Northern Iowa, USA	"Sustainable Manufacturing Research Directions"	March 11, 2015
11	Prof. P. M.V. Subbarao, Indian Institute of Technology Delhi	"Development of Novel Designs for Supersonic Nozzles & Ejectors"	August 29, 2014
12	Dr. Prashant Saxena, University of Lausanne, Switzerland	"A Continuum Theory of Magneto-Mechanics"	January 8, 2015
13	Mr. Praveen Vettiyattil, Sharda Solutions, Coimbatore	"You can Innovate and workshop with Enactus"	April 6, 2014
14	Prof. Suman Chakraborty, Indian Institute of Technology Kharagpur	"The Future of Technology: Technology in 2050"	February 3, 2015
15	Dr. Saurav Rakshit, Indian Institute of Technology Kanpur	"Optimization-Related Formulations in Multibody Mechanics with Contacts and Constraints"	July 14, 2014

Invited lectures by faculty

1. **Dr. Dhiraj Kumar Mahajan**
   - "International Workshop on Stress Assisted Environmental Damage in Structural Materials" Indian Institute of Technology Madras, Feb 27 - March 02, 2015.
   - "Crystal Plasticity based Modeling of Fatigue Behavior of Metals under Hydrogen Environment" Indian Institute of Technology Madras, Chennai, India, August 21, 2014.
   - "Understanding Mechanics of Materials using Stress-Strain Measures that Undergraduate Student Generally Don't Know" Chandigarh Engineering College, February 11, 2015.
   - "Understanding Mechanics of Materials using Stress-Strain Measures that Undergraduate Students Generally Don't Know" Rayat - Bahra Institute of Engineering & Bio-Technology, Kharar, Punjab, February 11, 2015.
   - "Understanding Mechanics and Physics of Polymeric Materials using Molecular Dynamics Simulations" Punjab Engineering College University of Technology, Chandigarh, April 8, 2015.
2. **Dr. Ekta Singla**
   - "Particle Swarm Optimization: Concept, Algorithms and Discussion" FDP on nature inspired computational techniques for engineering and Sciences, Guru Nanak Dev Engineering College, Ludhiana, Punjab, July 23, 2014.
   - "Evolutionary Algorithms" Thapar University, Patiala, Punjab, December 5, 2014.
   - "Synthesis Methodologies for manipulators with large number of degrees of freedom" SAATH – Indo-Sweden Workshop, IIT Kanpur, UP, India, February 16-17, 2015.
3. **Dr. Harpreet Singh**
   - "Advanced and Micro Manufacturing" India Development of Nano-structured Materials and Coatings through Mechanical Processing Short Term Course,Punjab Engineering College, University of Technology, Chandigarh, June 6, 2014.
   - "Advances in Mechanical Engineering" Development of Nano- structured Materials and Coatings through Mechanical Processing Short Term Course (TEQIP-II), Beant College of Engineering and Technology, Gurdaspur, June 24, 2014.
   - "Micro/nano Material removal and Additive Technologies in Advanced Manufacturing" India Development of Nano- Structured Materials and Coatings by Mechanical Routes Faculty Development Program, Guru Nanak Dev Engineering College, Ludhiana, August 1, 2014.
   - "Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-2014)" Use of Friction-stir Process to Produce Nanocomposites International Conference, Punjab Technical University Jalandhar, Kapurthala, India, October 18, 2014.
   - "Severe Plastic Deformation Routes for Producing Nano- structured Materials Special Lecture Series for Students and Research Scholars" Centre for Nanoscience & Nanotechnology, Punjab University, Chandigarh, India, March 5, 2015.
   - "Opportunities for Research and Development in India" DST-INSPIRE Camp, Akal College of Pharmacy and Technical Education, Sangrur, India, March 20, 2015.
   - "Surface Modification of CA6NM Hydro Turbine Steel for Protection against Erosion" 2nd National Conference Recent Trends in Mechanical Engineering (RTME-2015), Beant College of Engineering and Technology, Gurdaspur, India, March 21, 2015.
   - "Hydro turbine Steel for Protection against Erosion" India Surface Modification of CA6NM, GNA University, Phagwara, April 6, 2015.

4. **Dr. Himanshu Tyagi**
   - "Solar Energy: Nanofluid Volumetric Receivers" STC on Heat Transfer in Chemically Reacting Systems Indian Institute of Technology Roorkee, India, December, 2014.
   - "Utilization of Nanotechnology in Harnessing Solar Energy" during the FDP on Advances in Thermal Energy University Institute of Engineering and Technology, Kurukshetra University, India, September 25-27, 2014.
5. **Dr. Navin Kumar**
   - Mahatma Gandhi University, Kottayam, Kerala, India.
   - International Centre for Automotive Technology (ICAT), Gurgaon.
6. **Dr. Ranjan Das**
   - "Binary-Coded Genetic Algorithms" TEQIP-II sponsored faculty development programme, Guru Nanak Dev Engineering College, Ludhiana, Punjab, India, July 24, 2014.
   - "Differential Evolution and its Applications" TEQIP-II sponsored faculty development programme, Guru Nanak Dev Engineering College, Ludhiana, Punjab, India, July 24, 2014.

Visits abroad by faculty

Sr. No.	Name of the faculty member	Country	Details of visit
1	Dr. Dhiraj Kumar Mahajan	Germany	Interdisciplinary Centre for Advanced Materials Simulation/Ruhr University Bochum, Visited Faculty (May – July 2014).
2	Dr. Ekta Singla	Hong Kong	International Conference on Robotics and Automation 2014, May 31 - June 5, 2014.
3	Dr. Harpreet Singh	Spain	International Thermal Spray Conference and Exposition (ITSC-2014), Barcelona, May 21-23, 2014.

18.8 CENTER FOR BIOMEDICAL ENGINEERING

Coordinator: Dr. Yashveer Singh

❖ Facilities

- Real Time – PCR
- Refrigerated centrifuge
- Electrophoresis units
- UV Transilluminator
- Fluorometer
- Water purification system
- Homogenizer
- Cell counter
- Deep freezer
- CO2 incubator
- Biosafety cabinet
- Autoclave
- Freeze Dryer
- Binocular Microscope
- Inverted Microscope

Lectures by visiting experts

Sr. No.	Name of the expert with affiliation	Topic	Date
1	Dr. Sarika Mishra, Indian Institute of Technology Kharagpur	"Biomedical Materials: From Conceptualization to Product Formation"	April 17, 2014
2	Dr. Sudhir Ranganath, IUSSTF, Harvard Medical School, USA, inStem and JNCASR, India	"Particle Engineering of Stem Cells for Phenotype Control"	May 21, 2014
3	Dr. Rajaram Lakkaraju, BITS Pilani, Goa.	" Boiling heat transport and voice generation in human vocal-folds"	May 29, 2014
4	Dr. Manoj Kumar, Thapar University, Patiala	"Biomedical Application of Bioluminescent Protein & Photon-Upconverting Nanoparticles"	May 29, 2014
5	Dr. Debabrata Mandal, Vyome Biosciences Pvt. Ltd., Delhi	"Transfer RNA and genetic code: A modified view"	July 10, 2014
6	Dr. Mamta Bansal, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh.	"Molecular approach to evaluate the genotoxicity of pesticides"	July 17, 2014
7	Dr. Prashant Kumar, Institute of Molecular and Cell Biology (IMCB), Singapore	"Bio engineering and Clinical Utility of Biomarkers: A Quest for Noninvasive Detection"	August 05, 2014
8	Dr. Dibyendu Samanta, Albert Einstein College of Medicine, USA	"Molecular basis of function and specificity among nectins that control cell-cell adhesion"	September 30, 2014
9	Dr. Rajkumar Thummer, University of Bonn, Bonn, Germany	"Role of core transcription factors in differentiation, maintenance, and induction of pluripotent stem cells"	October 1, 2014

10	Dr. Shirisha Nagotu, Life and Medical Sciences Institute (LIMES), University of Bonn, Bonn, Germany	"Peroxisome biogenesis in yeast - unplugging the division machinery"	October 1, 2014
11	Dr. Kunal Dayma, Center for Cellular and Molecular Biology (CCMB), Hyderabad.	“Regulation of epithelial to mesenchymal transition (EMT) in tumor cells: consequences for cancer metastasis”	October 27, 2014
12	Dr. Kalpana Chauhan, University of Texas at Austin, Texas, USA	“Processing of echocardiographic images”	October 31, 2014
13	Prof. Anju Chadha, Indian Institute of Technology Madras, Chennai.	"Enzyme-mediated Organic Reactions: Mechanism and Applications"	December 9, 2014
14	Dr. Satish Khurana, Inter-departmental Stem Cell Institute, Katholieke Universiteit Leuven, Belgium	"Hematopoietic stem cells: trans-differentiation, niche, development and metabolism"	January 27, 2015
15	Dr. Prem Kumar Sinha, The Pennsylvania State University, College of Medicine, Hershey, PA, USA.	“From N!DH Quinone Oxidoreductase (complex I) to Osmolytes: Tale of Two Worlds”	January 29, 2015
16	Dr. Atul Singh Minhas, Medical Systems Lab, Samsung Electronics, South Korea.	"Tissue Conductivity Imaging using Magnetic Resonance Imaging – challenges and opportunities"	February 09, 2015
17	Dr. Satyavrata Samavedi, Rensselaer Polytechnic Institute, Troy, NY , USA.	"Gradient Biomaterials for the Potential Regeneration of Tissue Transitions"	March 16, 2015
18	Dr. Mukesh K Jaiswal, Rosalind Franklin University of Medical Sciences, North Chicago, IL, USA.	“Paths to preterm labor and its therapeutic opportunities”	March 20, 2015
19	Dr. Atul Kumar, IRCAD, Taiwan.	“Computer vision in computer-assisted surgery and diagnosis”	March 30, 2015

19. TRAINING & PLACEMENT CELL

The placement results during April 2014 to March 2015 at IIT Ropar have been very encouraging. The organizations that participated in the final placement included premier companies, such as Google, Amazon, Microsoft, eBay, Arista Networks, Flipkart, Larsen & Toubro, Cognizant, Nagarro, SCA Technologies, Avanti, DRDO, etc. Some of the new companies that took part in the placement process were Snapdeal, Zomato, Tata Motors, Capgemini, Elegant Marine, HCL, R Systems, Innoplexus, ITC infotech, Kayako, Mahindra & Mahindra Ltd, Meritnation and Misys Software Solutions.

The response from industry has been overwhelming with companies in the recruitment process making 82 offers to the students. The highest package offered in India was Rs. 28.5 lakhs per annum by Amazon. The average salaries offered to our students was Rs. 10.8 lakhs per annum.

During the same period there was a great internship season as well. Twelve students of the B.Tech. 2011 entry batch went abroad for summer internship 2014 in prestigious universities such as Aston University in Birmingham (England), Dongguk University in Seoul (South Korea), University of Erlangen-Nuremberg (DAAD-Germany), Universitaet Duisburg-Essen (DAAD-Germany), Ecole Centrale Paris University (France), and Imperial College London (England). Such experiences are likely to boost their career prospects to a great extent. It was heartening to note that most of the internships were paid internships.

Training and Placement Team

Faculty-in-charge	**Faculty advisor**	**Faculty advisor**	**Placement Officer**
Dr. Ravi Mohan Prasad Assistant Professor School of Mechanical, Materials & Energy Engineering	Dr. Nitin Auluck Assistant Professor Department of Computer Science and Engineering	Dr. C. C. Reddy Assistant Professor Department of Electrical Engineering	Dr. D. P. Singh Training & Placement Officer

Student Representatives

- **For Placements**

Department of Computer Science & Engineering	Department of Electrical Engineering	School of Mechanical, Materials & Energy Engineering
Kumar Harshad, Lalit S. Verma, Prakhar Asthan	Tanmay Jain, Ashish Garg, Mishra Satyaprakash Harvansh	Akshat Pandey, Sumanyu Maingi ,Boddu Venkata Nagarjuna Reddy

- **For Internship**

Department of Computer Science & Engineering	Department of Electrical Engineering	School of Mechanical, Materials & Energy Engineering
Kaushal Yagnik , Abhishek Raj Nigam, Savyasachi	Paras Ahuja, Amit Goyal, Mohit Jasapara	Blesson Xavier, Sai Harish, Piyush Rai

20. CONSTRUCTION ACTIVITIES IN THE PERMANENT CAMPUS

Construction work at the permanent campus site is at full swing. IIT Ropar is slated to shift to its permanent campus by May 2017. In phase- I, following facilities are planned to be available at the permanent campus:

Academic Block	
Sr. No.	**Name of the building**
1	Department of Chemistry
2	Department of Computer Science & Engineering
3	Department of Electrical Engineering
4	School of Mechanical, Materials & Energy Engineering
5	Lecture Hall
6	Admin Block
7	Computer Centre
8	Central Library
Residential Block	
Sr. No.	**Name of the building**
1	Director's Residence
2	Boys Hostel
3	Girls Hostel
4	Dining Hall
5	T4 Residences (24 Units)
6	T4 Residences (32 Units)
7	T2 Residences (56 Units)
Others	
Sr. No.	**Name of the building**
1	Utility Block
2	School
3	Health centre
4	Sports fields

CURRENT STATUS

The construction work at the site is in full swing. Currently, there is a workforce of about 800 workers and engineers engaged in various activities related to IIT Ropar permanent campus project.

As of now, the construction of most of the buildings listed above has been brought upto the plinth level. Structural design for most of them is complete and other details are being worked in full swing as per the plan. Tendering process for new/pending items is in progress and is expected to complete within their planned timelines.

Another important task that the core team has started working on is chalking out plans for subsequent phases of campus development. This is to ensure timely execution of subsequent phases of the permanent campus.

One of the burning issues faced by IIT Ropar administration is to ensure timely delivery of

permanent campus. In order to ensure that stated target deadlines are met by various agencies that are involved in building the permanent campus, following measures have been put in place by the institute's Director, Prof. Sarit K. Das.

1. Formation of a core team (reporting to the director, IIT Ropar) comprising of Associate Dean Campus Development (Dr. Balwinder Singh Sodhi) and an external expert (Er. S. Ramanujam, former Head, Architecture & Civil Engineering Division, BARC) to monitor and troubleshoot major issues, and assist the director on matters related to permanent campus development project. This team regularly (bi-weekly) meets with key parties (CPWD, ITDC and Sikka Associates) to identify any issues related to their work. It also proposes action plan to address the issues at hand so that target deadlines are met.
2. A Quality Monitoring Committee (QMC) has been constituted to closely monitor various deliverables for quality. QMC comprises of members from institute administration and external experts.

21. RESEARCH PUBLICATIONS

Department of Chemistry

Book Chapters

1. Srivastava R, Anu Prathap M. U, and Pulikottil M.Francis, "Synthesis and electrocatalytic applications of polyanilines", Chapter 10, Volume-1, page No. 241-282, Nova Science Publishers, New York, 2015.

Journals

1. A. Kaur, T. Raj, S. Kaur, N. Singh, and N. Kaur, "Fluorescent organic nanoparticles of dihydropyrimidone derivatives for selective recognition of iodide using a displacement assay: application of the sensors in water and biological fluids.," Org. Biomol. Chem., vol. 13, no. 4, pp. 1204–12, 2015.
2. A. Mahal, M. K. Goshisht, P. Khullar, H. Kumar, N. Singh, G. Kaur, and M. S. Bakshi, "Protein mixtures of environmentally friendly zein to understand protein-protein interactions through biomaterials synthesis, hemolysis, and their antimicrobial activities.," Phys. Chem. Chem. Phys., vol. 16, no. 27, pp. 14257–70, 2014.
3. A. Saini, J. Singh, R. Kaur, N. Singh, and N. Kaur, "Naphthalimide-based organic nanoparticles for aluminium recognition in acidic soil and aqueous media," New J. Chem., vol. 38, no. 9, pp. 4580, 2014.
4. A. Saini, J. Singh, R. Kaur, N. Singh, and N. Kaur, "Fluoremetric determination of amoxicillin drug in aqueous medium using hybrid framework of organic–inorganic nanoparticles," Sensors Actuators B Chem., vol. 209, pp. 524–529, 2015.
5. A. Singh, S. Sinha, R. Kaur, N. Kaur, and N. Singh, "Rhodamine based organic nanoparticles for sensing of Fe3+ with high selectivity in aqueous medium: Application to iron supplement analysis," Sensors Actuators B Chem., vol. 204, pp. 617–621, 2014.
6. A. Singh, S. Kaur, A. Kaur, T. Aree, N. Kaur, N. Singh, and M. S. Bakshi, "Aqueous-phase synthesis of copper nanoparticles using organic nanoparticles: Application of assembly in detection of cr 3+," ACS Sustain. Chem. Eng., vol. 2, no. 4, pp. 982–990, 2014.
7. A. Singh, A. Singh, and N. Singh, "A Cu(II) complex of an imidazolium-based ionic liquid: synthesis, X-ray structure and application in the selective electrochemical sensing of guanine.," Dalton Trans., vol. 43, no. 43, pp. 16283–8, 2014.
8. A. Singh, V. K. Bhardwaj, G. Kaur, K. Kaur, N. Singh, and M. S. Bakshi, "Organic–inorganic nanohybrids and their applications in silver extraction, chromogenic Cu2+ detection in biological systems, and hemolytic assay," RSC Adv., vol. 4, no. 40, p. 21079, 2014.
9. B. Ugale, D. Singh, and C. M. Nagaraja, "Temperature dependent structural variation from 2D supramolecular network to 3D interpenetrated metal–organic framework: In situ cleavage of S–S and C–S bonds," J. Solid State Chem., vol. 226, pp. 273–278, 2015.
10. B. Ugale and C. M. Nagaraja, "Synthesis, structure and luminescence property of a 3d diamondoid interpenetrated zn(ii)-organic framework," J. Inorg. Organomet. Polym. Mater., vol. 24, no. 6, pp. 1032–1037, 2014.
11. B. Kaur and R. Srivastava, "Nanocrystalline metallosilicate modified electrodes for the simultaneous, sensitive, and selective determination of riboflavin, rutin, and pyridoxine," Electroanalysis, vol. 26, no. 5, pp. 1078–1089, 2014.
12. B. Kaur and R. Srivastava, "Simultaneous determination of ascorbic acid, dopamine, uric acid, and tryptophan by nanocrystalline zsm-5 modified electrodes," J. Nanosci. Nanotechnol., vol. 14, no. 9, pp. 6539–6550, 2014.

13. B. Kaur and R. Srivastava, "Selective, nanomolar electrochemical determination of environmental contaminants dihydroxybenzene isomers found in water bodies using nanocrystalline zeolite modified carbon paste electrodes," Electroanalysis, vol. 26, no. 8, pp. 1739–1750, 2014.
14. B. Kaur and R. Srivastava, "Ionic liquids coated Fe3O4 based inorganic-organic hybrid materials and their application in the simultaneous determination of DNA bases.," Colloids Surf. B. Biointerfaces, vol. 118, pp. 179–87, 2014.
15. B. Kaur and R. Srivastava, "Synthesis of ionic liquids coated nanocrystalline zeolite materials and their application in the simultaneous determination of adenine, cytosine, guanine, and thymine," Electrochim. Acta, vol. 133, pp. 428–439, 2014.
16. B. Kaur and R. Srivastava, "Simultaneous electrochemical determination of nanomolar concentrations of aminophenol isomers using nanocrystalline zirconosilicate modified carbon paste electrode," Electrochim. Acta, vol. 141, pp. 61–71, 2014.
17. B. Kaur, B. Satpati, and R. Srivastava, "Synthesis of NiCo 2 O 4 /Nano-ZSM-5 nanocomposite material with enhanced electrochemical properties for the simultaneous determination of ascorbic acid, dopamine, uric acid and tryptophan," New J. Chem., vol. 39, no. 2, pp. 1115–1124, 2015.
18. B. Sarmah and R. Srivastava, "Simple and economical synthesis of alkyl phenyl ethers by the reaction of phenols and alkyl esters using nanocrystalline beta," ACS Sustain. Chem. Eng., vol. 3, no. 2, pp. 210–215,
19. D. Singh and C. M. Nagaraja, "A luminescent 3D interpenetrating metal-organic framework for highly selective sensing of nitrobenzene.," Dalton Trans., vol. 43, no. 48, pp. 17912–5, 2014.
20. H. Sharma, N. Singh, and D. O. Jang, "A benzimidazole/benzothiazole-based electrochemical chemosensor for nanomolar detection of guanine," RSC Adv., vol. 5, no. 9, pp. 6962–6969, 2014.
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23. J. J. Davidson, C. M. Nagaraja, C.-H. Chen, B. M. Foxman, and O. V. Ozerov, "Palladium complexes of a new phosphine-amido-siloxide pincer ligand with variable degrees of protonation," Inorganica Chim. Acta, vol. 422, pp. 70–77, 2014.
24. K. Tayade, S. K. Sahoo, B. Bondhopadhyay, V. K. Bhardwaj, N. Singh, A. Basu, R. Bendre, and A. Kuwar, "Highly selective turn-on fluorescent sensor for nanomolar detection of biologically important Zn2+ based on isonicotinohydrazide derivative: application in cellular imaging.," Biosens. Bioelectron., vol. 61, pp. 429–33, 2014.
25. K. Tayade, A. Kaur, S. Tetgure, G. K. Chaitanya, N. Singh, and A. Kuwar, "Fluorogenic ratiometric dipodal optode containing imine-amide linkages: exploiting subtle thorium (IV) ion sensing.," Anal. Chim. Acta, vol. 852, pp. 196–202, 2014.
26. K. Goyal, V. Koul, Y. Singh, and A. Anand, "Targeted drug delivery to central nervous system (cns) for the treatment of neurodegenerative disorders: trends and advances." Bentham Science Publishers, 2014.
27. M. Samolia and T. J. D. Kumar, "A conceptual DFT study of the hydrogen trapping efficiency in metal functionalized BN system," RSC Adv., vol. 4, no. 58, p. 30758, 2014.

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30. M. Samolia and T. J. D. Kumar, “Hydrogen sorption efficiency of titanium-functionalized mg–bn framework,” J. Phys. Chem. C, vol. 118, no. 20, pp. 10859–10866, 2014.
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45. R. Kore, R. Srivastava, and B. Satpati, "Synthesis of industrially important aromatic and heterocyclic ketones using hierarchical ZSM-5 and Beta zeolites," Appl. Catal. A Gen., vol. 493, pp. 129 – 141, 2015.
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Conference Proceedings

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2. S.K. Ghorui, C.R. Praharaj, P.K. Raina, Z. Naik, and S.K. Patra, "Energy spectra and electromagnetic transition rates of 160,162,164Gd in the projected Hartree-Fock model" AIP Conference Proceedings 1609, 135 (2014), Published, August 14,2014.
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Seminars/Workshops/Conferences Organized

1. Dr. Pushpendra P. Singh jointly with Prof. C. Rangacharyulu, University of Saskatchewan, Canada and Prof. Schin Date', SPring-8, Japan, "International workshop of laser compton scattering gamma rays at electron storage rings", University of Saskatchewan and Canadian Light Source, Saskatoon, Saskatchewan, Canada, November 7-11, 2014
2. Dr. Pushpendra P. Singh, Dr. Ekta Singla, Prof. J. S. Sahambi, and Robotics Club "ARDUINO" Workshop, Indian Institute of Technology Ropar, December 01, 2014.

22. STUDENTS ACTIVITIES

22.1 ZEITGEIST

This year zeitgeist was a tremendous success. The event lasted for 2 days and 3 nights. It was filled with jubilant cultural events like dance, music, singing competitions and fashion show. The event recorded a footfall of more than 5000. This festival was enriched by three pro-nights. The first night saw the mind boggling performances of "astitva the band" and the "sunburn campus starring DJ Avtar". The crowd danced their souls out during these performances. The second night saw the performance of "the local train band".

22.2 LOHRI

This festival is celebrated in Punjab as Lohri and in Gujarat /Maharashtra as Makar Sankranti. This year lohri was celebrated in a festive manner. A bonfire was arranged near mercury hostel. All the students gathered and sang ritual songs. Students had sweets and dryfruits and danced.

22.3 HOLI

The festival of colors was celebrated at IIT Ropar in a great way. Students enjoyed sweets and colors arranged by the institute. People played with colors and water and enjoyed the ambience.

22.4 INTER-BATCH CULTURAL CHAMPIONSHIP

Inter-Batch Cultural festival was organized very first time at IIT Ropar. It was like a mini Zeitgeist. There were many cultural events. Teams from each batch prepared performances and participated in the competition. This was the first event to find the cultural talent of our institute. The students of 2011 batch won the maiden general championship.

22.5 CULTURAL NIGHT

Cultural night was organized in October as a farewell to final year students. The event was to show the cultural talent of students by various dance, dramatics, singing performances. The students bid adieu to final year with emotions and sentiments.

22.6 INTER IIT SPORTS MEET 2014

A contingent of strength-91 participated in the inter IIT sports meet held at IIT Bombay in December, 2014. IIT Ropar participated in various events like cricket, football, basketball, badminton, etc. IIT Ropar participated with good spirit.

22.7 INTER YEAR SPORTS TOURNAMENT

A sports tournament with 5 teams (one for each year and PhD) was organised. It was the first time, when a separate team of PhD participated in this tournament. Various games were played and the PhD team bagged the trophy.

22.8 CRICKET LEAGUE – PPL

A cricket league was arranged on the basis of IPL. Cricket players from all the batches come forward and made 4 icon players to play the part of the manager of the team. An auction was conducted and 4 teams were formed. A trophy was given to the winning team.

22.9 MIXED MATCHES

Various other interesting and fun sport events were also organized throughout the year that includes games like basketball, table tennis, volley ball etc.

23. CENTRAL LIBRARY

23.1 INTRODUCTION

Central Library of IIT Ropar plays a pivotal role in support of academic and research activities of the Institute with the main functions of acquiring, processing, preserving and dissemination of print and electronic resources. The objective of the library is to provide its user the required information resources such as text-books, reference books, handbooks, encyclopedias, dictionaries, Journals, magazines etc with appropriate delivery systems and services in order to support the institute to achieve excellence in teaching and learning, learning, research and community service. Library is also aiming to provide advanced level research support services.

23.2 COLLECTION DEVELOPMENT

Collection building is one of the important functions of the library, which supports academic and research activities of the students, faculty, staff and other users.

The Library is continuously developing collection by acquiring latest books, journals, reports and other reference and information resource materials in science, engineering, technology, humanities and social sciences during the year. The Library is holding an excellent print collection of over 12000 documents which includes various resources such as dictionaries, handbooks, encyclopedias, reports of research monographs, multi-volume reference works etc.. Apart from this, the library holds a growing collection of CDs/DVDs, electronic journals, annual reports, standards and pamphlets in areas of science, engineering, technology, humanities and social sciences. In the financial year 2014-15, the library added 1370 new books to its collection.

23.3 ELECTRONIC RESOURCES

The Central Library facilitates online access to thousands of electronic journals through direct subscription and participation in consortia, such as INDEST-AICTE and UGC-INFLIBNET consortium. The library also provides online access to citations and scientometric database such as Scopus and MathSciNet. The library provides access to the following publishers' Electronic Resources.

❖ **Full-Text Electronic Journals and Books:**

- ACLS Humanities E-Books
- Association for Computing Machinery (ACM) Digital Library (V.1 - current)
- American Chemical Society (ACS) Digital Archive and Current Journals
- American Institute of Physics (AIP) Digital Archive and Current Journals
- American Nuclear Society(ANS)Journals and Magazines (2011)
- American Physical Society (APS) Journals
- American Society of Mechanical Engineers (ASME) Digital Archive and Current Journals
- Cambridge University Press (CUP) Selected Journals
- IEEE/IET Electronic Library (IEL) Online (V.I - current)
- Institution of Mechanical Engineers (IMechE) Digital Archive
- Institute of Physics (IoP) Science Digital Archive and Selected Current Journals
- Journal of Biomedical Optics from International Society for Optics & Photonics (SPIE)
- JSTOR Collection
- Multi-Science Publishing: Low Frequency Noise, Vibration and Active Control
- Optical Society of America(OSA) Online (1995 - current)
- Oxford University Press (OUP) Mathematics and Physical Sciences Journals
- Proceedings of National Academic Sciences (PNAS)
- Project MUSE
- Royal Society Proceedings A: Mathematical, Physical and Engineering Sciences

- Royal Society of Chemistry (RSC) Digital Archive and Selected Current Journals
- SAE selected Journals
- ScienceDirect (1995 - current)
- Science Online (1997 - current)
- Society for Industrial and Applied Mathematics (SIAM) Digital Archive and Current Journals
- Springer Lecture Notes in Physics
- Springer Online Journals (1997 - current)
- Thieme Selected Journals
- Wiley Selected Journals (1997 to 2012)
- World Scientific (Selected Mathematics Journals)

❖ **Abstracting, Bibliographic, and Scientometric databases**

- MathSciNet
- Scifinder
- Scopus

23.4 LIBRARY SERVICES

The main function of the library is to provide information services and seamless access to full-text digital and printed sources, bibliographic and scientometric databases in support of scholarly and information needs of students and research scholars. The library currently provides following services on regular basis:

a. Circulation and Consultation Service

The library circulation operations are automated using LIBSYS-7 software. During the academic year 2013-14, a total of 12033 documents were issued/consulted at circulation desk to all categories of users.

b. Reference Service

The library has a separate reference section meant for in-house reading with a seating capacity for 120 students. Reference queries are responded immediately by well qualified library professionals on one-to-one and e-mail basis.

c. Library OPAC (Online Public Access Catalogue)

The OPAC is one of the most widely used services of the library and is accessible 24X7 via library web page**.** The library facilitates following two types of OPAC services:

- Web-OPAC
  The Web-OPAC, besides listing all the documents available in the library, allows on-line status of an individual's account, reservation of desired documents, and current status of a particular book. OPAC is searchable by author, title, publisher, subject and several other fields.
- Union OPAC
- The Union-OPAC of library, in addition to its own database, also provides access to other library databases, such as that of other IITs, Research Centers, and WorldCat etc. It has been integrated with Google Web Technology which covers pages from Google books and offers "my cart" facility to selectors.

d. Institutional Digital Repository (IDR)

Library has developed Institutional Digital Repository (IDR) using DSpace open source software which preserves the research output of the institute composed of theses and dissertations, project reports, research papers.

e. News Portal of IITs

The library has taken an initiative to bring all IIT related news (old and new IITs) at one place through the "IITs News Portal". It is an openly accessible portal where anyone can find IIT related news published in leading newspapers, periodicals and magazines etc.

f. E-Resources Centre

A separate facility to access electronic resources is provided for users. This sections contains latest computer systems and DVD/CD collection.

23.5 STAFF

The present status of the staff managing the library is as follows:

Sr. No.	Designation	Strength
1.	Deputy Librarian	1
2.	Assistant Library & Information Officer	1
3.	Sr. Library & Information Assistant	2
4.	Library Attendant	1

23.6 PUBLICATIONS

Book Chapter

1. T.S. Handa, and A.Mittal, "Implementing RFID for Enhanced Library Services" In: S.M.Kumar, ; R.K. Mahapatra, and K. Veeranjaneyulu, Ed. Information Access in Digital Libraries: A Festschrift Volume in Honour of Dr S.M. Pathania, New India Publishing Agency; New Delhi, p. 197-205, 2014.

Conference Proceedings

1. H. Kaur, "Cloud computing and open discovery tools in academic libraries: An overview" In proceedings of National Seminar on Information Technology Tools and Techniques in Social Science Research, Guru Nanak Dev University, Amritsar in collaboration with in Defence Research and Development Organisation (DRDO), May 23-24, 2014, pp.395-407.

2. H. Kaur, "Relevance of Ranganathan's Five Laws in Digital Library" In proceedings of the Chandigarh Librarian's Association (CLA) on National Library Day, DAV College Sector-10, Chandigarh on August 12, 2014, pp. 201-209.

3. H. Kaur, "Digital preservation of manuscripts: An Indian perspective with special reference to Punjab" In proceedings of IEEE 4th International Symposium on the Emerging Trends and Technologies in Libraries and Information Services (ETTLIS) at Jaypee Institute of Information Technology, Noida on 6-8 Jan., 2015. pp. 271-274.
4. T.S. Handa, "Knowledge Management in Libraries: The process and cycle" in proc. of International Conference on Content to Connectivity- Paradigm Shift in Knowledge Innovation

Information Representation, Information Management Systems and Librarianship, organized by Tecnia Institute of Advanced Studies, Rohini, Delhi, pp. 127-131, April 11-12, 2014.

23.7 AWARDS

- Dr. Dinesh, K. S. has been awarded Commonwealth Professional Fellowship, 2014-15. He has worked in the University of East London from June 2014 to August 2014.
- Harpreet Kaur has been awarded best paper in the Seminar on "Relevance of Ranganathan's Five Laws in Digital Library" National Seminar on Relevance of Ranganathan's Philosophy in Digital Era, The Chandigarh Librarian's Association (CLA) on National Library Day, DAV College Sector-10, Chandigarh on August 12, 2014.

23.8 VISITS ABROAD

- Dr. Dinesh, K.S. has visited National Library of France on June 22, 2014; Amsterdam Public Library on June 29, 2014; Imperial College London on July 23, 2014; Oxford Bodleian Libraries, UK on August 13, 2014; Birmingham Public Library, UK on August 13, 2014 as part of Commonwealth Professional Fellowship - 2014.

23.9 OTHERS

T. S. Handa was a rapporteur in technical session IV of "XXX IATLIS National Conference" on the Theme of "Re-inventing LIS Education in the Internet Era" organized by Central University of Himachal Pradesh, Himachal Pradesh, November 27-30, 2014.

24. CAMPUS AMENITIES

24.1 GUEST HOUSE

The Institute's guest house is conveniently situated adjoining the residential area of the campus. It is a very pleasant place for the institute's guests spanning across academia to institute's alumni and parents of the institute's students. Just a two minute walk from the main gate of the campus, this soothing residence is surrounded by a lush green garden with a badminton court to keep a person hale and healthy.

Guest house has three different categories of accommodation. The main guest house has six rooms with en suite facilities, garden, badminton court etc., while the guest house no. 3 has three rooms and the guest house no. 5 has three rooms, along with lounge and dining facilities for special lunch for special occasion. All the rooms of the guesthouse are equipped with standard amenities such as broadband connectivity, TV, AC etc.

24.2 MEDICAL CENTER

The Institute has medical center adjacent to hostel complex with 12 hours OPD. To attend any medical emergency of the campus, a doctor, a pharmacist and a nurse are available 24x7. Facilities of ECG, NIBP, oxygen saturation, blood sugar monitor and Fetal hearts Doppler monitor are provided for students, staff and faculty members. Various new drugs, antibiotics and medical devices (autoscope, X- ray illuminator, digital bp monitor,dressing trolley,digital weighing scale) are introduced. Ee-Awareness of various contagious and non contagious diseases and various alerts and preventive measures started through emails. Currently, there are three drivers for 24x7 ambulance service.

24.3 HOUSING FACILITIES

IIT Ropar campus has 46 apartments in one or two storey buildings. There are 18 flats with 1000 sq. ft. area, 12 flats of 600 sft., 12 flats of 400 sq.ft. and 4 bungalows of 1300 sq.ft. for residence of officials, faculty and staff. Round the clock security, power, DG back up and water facilities are provided in residential area. The campus has 100 mbps dedicated internet line serving residential area also. The residential buildings are surrounded by children play area and parking facilities.

24.4 BANK

State Bank of India, IIT Ropar was established on 21-08-2009, to assist and take care of the financial requirements of students, staff and faculty members. The branch caters to needs of saving bank A/C, RD, FD, Loans (Car, Personal) insurance (life & general) Mutual funds etc. on a day to day basis. The working hours of the branch are from 10 am to 4 pm from Monday to Friday and 10 am to 1 pm on Saturdays. The business of the branch is approx. 70.92 crores as on 30/6/15. Since its inception, the branch has delicately supported and sincerely operated in its functions, providing strong financial pillars to IIT Ropar.

24.5 CRÈCHE

Crèche (Day care) facility was started at IIT Ropar in September 2012 to take care of the children of staff and faculty. The center caters to kids in the age group of 1 – 8 years and provides the option of Full Day, Half Day and other need based services. The crèche facility is available from 8:30 am – 6.00 pm, Monday – Friday. Crèche operates in an approximately 800 sqft. area with a play den, kitchen, toilet and bedroom. It is also equipped with basic essentials like toys, microwave oven, refrigerator, water filter, heating/cooling, TV, etc. to provide a safe and healthy

environment. Currently, there are two nannies to take care of kids and their needs. In addition to ensuring timely meals and naps, the staffs of the centre keep the kids active and stimulated with poem recitation, storytelling, drawing/coloring and playing with educational toys. Although the number varies with time, an average of 10 – 12 kids use the facility. Since its inception, the center has successfully grown to provide IIT Ropar parents with invaluable peace of mind when it comes to their kids' well-being!

24.6 CAFETERIA

The central cafeteria of IIT Ropar, located behind the admin block, is operated everyday from 8:00 am - 2:00 am to provide a nutritious, quality food service to the students, faculty and staff of the institute at a reasonable cost. Our cafeteria is a relaxing space, enclosed by student painted walls with views of the outdoors and lots of natural light. Seating in front of cafeteria provides an opportunity to get closer to the nature under dense trees with a cup of tea or coffee. The cafeteria is committed to provide healthier meals offering more fruits & vegetables, dairy products and meat items. Each day, the users select from hot entries a variety of Indian and western style entries fresh fruits and juices, cold drinks and cakes. To promote discussion and student interaction outside the academics on national and international issues, the cafeteria offers daily newspapers and magazines. We are continuously reviewing the entire line of products and introducing new products so that users of all ages can be introduced to the healthier foods.

24.7 TRANSPORT SERVICES

IIT Ropar purchased bus in September 2014 which runs between Mohali/Chandigarh to IIT Ropar. This bus is used by faculty members and staff for their daily commute. It is additionally used to take students to industrial visits. The bus is also used for similar services in the weekends as well. IIT Ropar plans to offer more such facilities in the future, thereby catering to the professional growth of faculty members, staff and students.

24.8 HORTICULTURE

The IIT Ropar transit campus is spread over 25 acres of land. Out of this approximately 15 acres is green belt with huge lush green football field, cricket ground, athletics practice arena and a park. Four gardeners are taking care of horticulture in the institute. In the campus there are 685 permanent trees of various varieties i.e. Ashoka (144), Silver Oak (69), Tuni (67), Eucalyptus (56), Arjun (40), Persian Lilac (33), Gulmohar (31) etc. and 110 fruit trees of Mango (73), Guava (17), Mulberry (9), Black Plum (9) and Peach (2). Very few trees yield fruit as of now as most of trees are small. For the beautification of campus, 1292 flower plants were grown i.e. 118 Roses of red, yellow, white, orange and pink colour, Marigold (225), Vinca (160), Balsam (140), Hamelia (125), Zinnia (95), Cosmos (82), Kochiya(67), Kirondola (35), Salbia(28), Palmeriya Alfa (20), Portulaca (20) and Dahlia (20) etc.

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