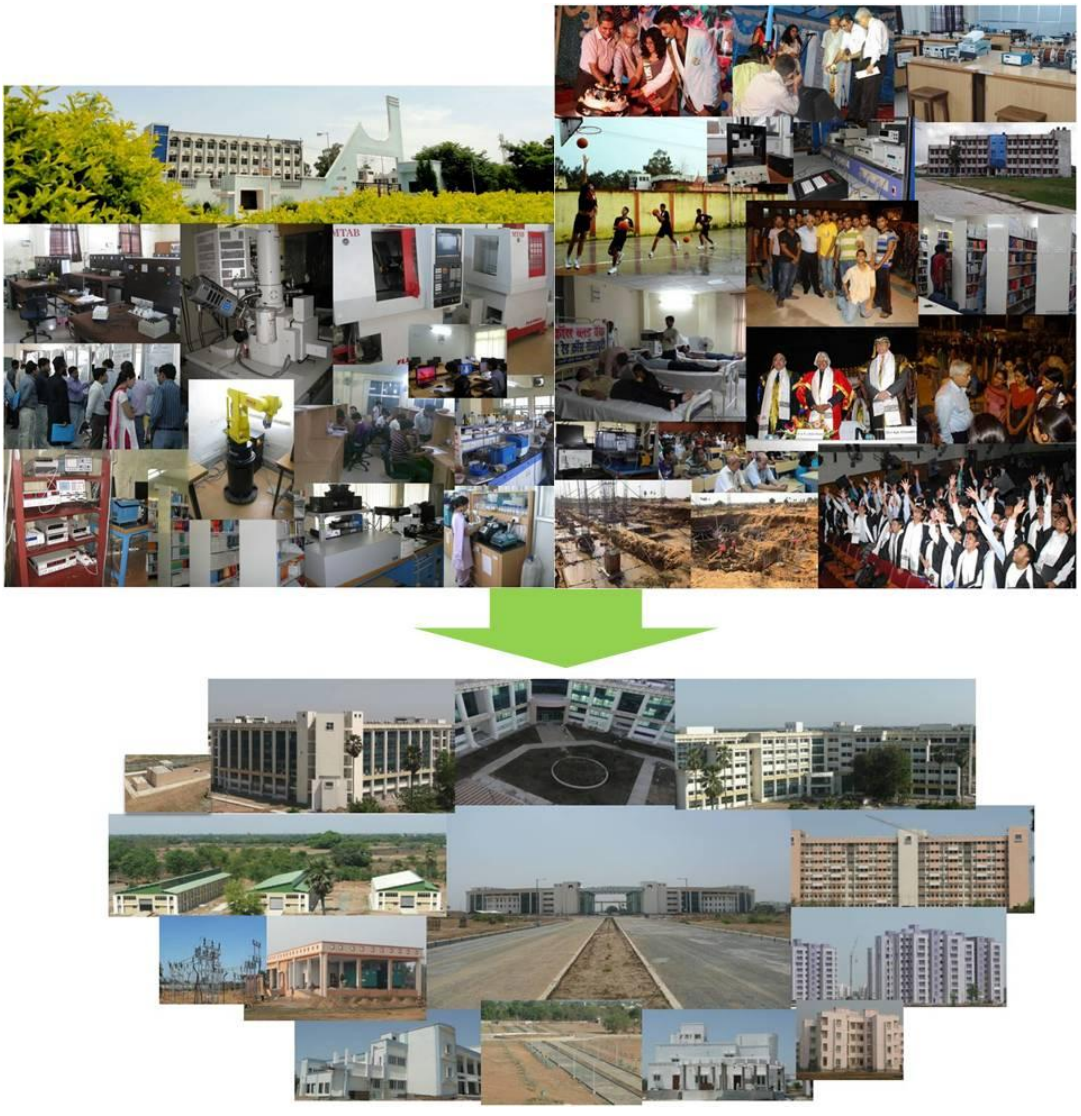
ANNUAL REPORT

2014-2015



INDIAN INSTITUTE OF TECHNOLOGY PATNA

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1. From the Director

Prof. P. P. Chakrabarti, Director (IIT Patna)

Indian Institute of Technology Patna is an Institution of National Importance and a new addition to the hallowed IIT System that has proven its worth in last 50+ years. The alumni of IIT are internationally known for their caliber and contribution. Since its inception in 2008, IIT Patna- like its young as well as established peers- has pursued excellence with steadfast determination.

IITP has 6 Engineering Disciplines: Civil and Environmental Engineering, Chemical and Biochemical Engineering, Computer Science and Engineering, Electrical Engineering, Mechanical Engineering and Materials Science and Engineering; 2 Science Disciplines: Physics and Chemistry; Humanities and Social Sciences; Mathematics and 3 Centers of Excellence: Energy and Environment; Strategic Materials; Advanced Systems Engineering. Its faculty members are experts in their respective fields. The thriving PhD, M.Tech and B.Tech programs of IITP see the students and faculty publish prolifically, win competitions, come up with innovations and build societal awareness. For impact, technology has to understand its vital links with (i) Humanities and Social Sciences, (ii) Mathematics and (iii) Natural Sciences. Technology can change life if it can acquire "Perspective" from Humanities and Social Sciences, "Technique" from Mathematics and "Foundations" from Sciences. In IITP, we will strive to achieve this 4-way harmony of Technology, Humanities and Social Sciences, Basic Sciences and Mathematics. The original charter of new IITs, viz., interdisciplinary research and teaching will thereby be addressed. IITP is strategically placed, geographically speaking. The stretch from Gujarat to Manipur has 11 IITs (Gandhinagar, Jodhpur, Mandi, Ropar, Roorkee, Delhi, Kanpur, Patna, Kharagpur, Bhubaneshwar and Guwahati) and a large number of NITs and renowned universities. This sets up a tremendous powerhouse of knowledge and high quality human resource. Additionally, the state of Bihar is rich with tradition and resources, emphasizes education, is blessed with the fertile Gangetic plain and abundant sunlight. This paves way for immense societal impact through agriculture and energy technology, amongst many other possibilities.

IITP is set to move to its brand new campus at Bihta, a place with history, about 25 KM from main city Patna. The sprawling 500 acre campus houses 4 academic complexes for the

departments, a Class Rooms Complex, Faculty, Staff and Student Residential quarters, Hospital and School and an impressive Administrative building. The 2015 autumn session in IITP will start from the new campus.

At this juncture of history, IIT Patna is poised for great things

Academic Programmes

IIT Patna offers B. Tech. programmes in Computer Science and Engineering, Electrical Engineering, Mechanical Engineering, Civil and Infrastructure Engineering and Chemical Science and Technology. The current student strength enrolled in undergraduate programs is 599. The first batch of our B. Tech. students graduated on June 15, 2012. Active doctoral programs are being offered in all the departments with 185 students currently registered in various departments. A total of 149 students are currently enrolled in the M. Tech. program in the following areas: (i) Communication System Engineering (offered by the Department of Electrical Engineering), (ii) Computer Science and Engineering (offered by the Department of Computer Science and Engineering), (iii) Mathematics and Computing (offered by Department of Mathematics jointly with Department of Computer Science & Engineering), (iv) Mechatronics (offered by Department of Mechanical Engineering jointly with Department of Electrical Engineering), (v) Nanoscience and Technology (offered by Department of Physics jointly with Department of Chemistry), (vi) Civil and Infrastructure Engineering, (vii) Materials Science & Engineering and (viii) Mechanical Engineering. Interesting courses like Entrepreneurship, Infotainment, etc., have been included in the B.Tech. curriculum.

Research and Development Activities

The IIT Patna is currently running with over seventy nine members in the faculty and the staff strength of over eighty. Hiring of more faculty members is in progress. The members of the faculty come with a wide range of academic and research experience. They come with academic and research training from various institutes of excellence within the country and abroad. The recent publication record of the faculty with several practical constraints appear to be outstanding. It includes many national and international journals of repute. The research and development program of IIT Patna is supported by many funding agencies within the country. Several projects have been funded by many government and industrial research bodies. In order to promote research, we have a research scholars' day where we ask our senior research students to make poster presentations and defend their work in front of the external experts and open forum.

International Collaborations

Many international institutes have shown their interest in collaborating with IIT Patna in various areas of research and teaching. Some of them include: (i) University of Houston, USA, (ii) Louisiana State University, USA, (iii) University of New South Wales, Australia, (iv) University of North Texas- Denton, USA, (v) University of Saskatchewan, Saskatoon, Canada, (vi) National University of Singapore, Singapore and (vii) University of Hartford, USA. Recently an MoU has been signed with Ca' Foscari University of Venice, Italy. During May-July 2013, several students were sent to US for summer internship. We would like to strengthen further our research programmes by collaborating with more foreign universities.

Infrastructure Development

The first phase of construction comprising of administrative complex, several Department buildings, tutorial complex and residential complex including hostels is near completion. The institute in transit campus has developed modern facilities that are fully equipped with the state of the art machines and technologies to run the program such as B.Tech. in five disciplines, M.Tech. in five disciplines (eight in very near future) and PhD programs in all the departments. On the transit campus, IIT Patna has developed new Boys' hostel with the help of Bihar Government, a small Guest House and the Girls' hostel. Additional hostel is being constructed to cater to the future need of the institute. Also, special care has been given to help faculty to find out suitable accommodation. The construction of the first phase at the permanent campus in Bihta is near completion.

Health Care

Health care is an important item in the development of Institute. We have associated ourselves with a local hospitals- Mahavir Vatsalaya Aspatal, Sahayog Hospital and Ruban Memorial Hospital to cater to the basic needs of our employees and students. We also have a small in-house dispensary with a medical officer. An Ambulance Service is also provided during emergency needs. The building for a primary health center has been constructed at the Bihta campus.

Training and Placement

Training and Placement Cell (TPC) of the institute co-ordinates between the institute and the various industrial organizations and employers of technical and scientific manpower. The Cell organizes summer internships for the pre-final year and placement activities for the final year B. Tech. students. This year, the cell has been actively involved in placement of the final year graduating students of third batch admitted in year 2011. Out of 97 B.Tech. students registered for placement, 80 have got placed in 30 different companies. The average pay package was 9.125 lakhs per annum. Also, out of 35 M.Tech. students registered for placement, 15 have got placed. A large majority of M.Tech. students chose to pursue higher studies.

Students' Activities

In IIT education, collaborative activities and development of leadership quality are important. In this respect we encourage sports and cultural activities in this institute. We have playgrounds for Volleyball, Cricket, Badminton, Basketball etc. and many indoor game facilities. IIT Patna is developing more facilities in the coming years. The students have participated in the inter IITs Sports Meet. Also, several cultural and technical fests are being organized each year. For example, we successfully organized ANWESHA '15 where IIT Patna invited few top technologists from India and abroad and various technological programmes were organized. Besides these, there are a large number of clubs including Rural Technology Development Club, Entrepreneurship Club, Cultural Club, Literary Club, Environmental Club which organize a variety of activities round the year.

Incubation Centre

IIT Patna is setting up an Incubation Centre (IC) in the area of Electronic System Design and Manufacturing with focus on Medical Electronics. This is funded by DEITy and Bihar State Government. The aim is to identify, nurture and translate technological ideas and innovation in the broad area of ESDM with a focus in Medical Electronics which while serving the society will also be a stepping stone for the growth of entrepreneurship activities in this region. The IC will focus on developing products for commercial exploitation via the route of physical infrastructure, technical expertise and networking support to new enterprises with innovative technologies. The effort will also give an impetus to entrepreneurship among students, faculty and any external innovators interested in these areas.DEITY will fund over the next 5 years

around Rs 22.10 crore and the Bihar State government has consented to support the IC at IIT Patna with a matching grant of Rs 25 crores. The physical infrastructure comprising of business cubicles, offices and laboratories for supporting product development will be setup in a built up area of 3000 square meter.

Unnat Bharat Abhiyan Cell, IIT Patna

Unnat Bharat Abhiyan (UBA) Cell of IIT Patna was formed with a core committee lead by the honorable Director and with members from Sponsored Research and Industrial Relations Unit (SRIRU), National Service Scheme (NSS), Micro Small and Medium Enterprise (MSME) project, as well as the general administration of the institute. A small seed grant was approved for initiating the activities of the cell. UBA Cell of IIT Patna has been trying to reach out to different communities of practice in the cluster of villages around the permanent campus in Bihta. However, the focus has been on the two adopted villages of the institute, namely- Amhara and Dilawarpur. Participant observation and surveys have been undertaken but the pivotal concern has been for trust and confidence building with the all stakeholders in the villages. The students have also been having good learning experiences in trying to understand the technological need of our village communities.

2. Organization

2.1 IIT Council

Smt. Smriti Zubin Irani Hon'ble Minister of Human Resource Development	Chairman
Dr. Anil Kakodkar, Chairperson, Board of Governors, IIT Bombay & Chairperson, Standing Committee of the IIT Council (SCIC)	Member
Shri. Ashok Thakur, Secretary (HE), MHRD, New Delhi	Member
Dr. Vijay P. Bhatkar, Chairperson, Board of Governors, IIT Delhi	Member
Dr. R. P. Singh, Chairperson, Board of Governors, IIT Guwahati	Member
Prof. M. Anandakrishan, Chairperson, Board of Governors, IIT Kanpur	Member
Dr. Pawan Goenka, Chairperson, Board of Governors, IIT Madras	Member
Dr. Srikumar Banerjee, Chairperson, Board of Governors, IIT Kharagpur	Member
Prof. Ashok Misra, Chairperson, Board of Governors, IIT Roorkee	Member
Dr. G. C. Tripathi, Chairperson, Board of Governors, IIT (BHU)	Member
Mrs. Lila Poonawalla, Chairperson, Board of Governors, IIT Ropar	Member
Shri M. Natarajan, Chairperson, Board of Governors, IIT Mandi	Member
Prof. Goverdhan Mehta, Chairperson, Board of Governors, IIT Jodhpur	Member
Shri. B. V. R. Mohan Reddy, Chairperson, Board of Governors, IIT Hyderabad	Member
Dr. Baldev Raj, Chairperson, Board of Governors, IIT Gandhinagar	Member
Shri. Ajay Piramal, Chairperson, Board of Governors, IIT Indore	Member
Shri. S. K. Roongta, Chairperson, Board of Governors, IIT Bhubaneswar	Member
Shri. Ajai Chowdhry, Chairperson, Board of Governors, IIT Patna	Member
Prof. Devang Khakhar, Director, IIT Bombay	Member
Prof R. K. Shevgaonkar, Director, IIT Delhi	Member
Prof. Gautam Biswas, Director, IIT Guwahati	Member
Prof. Indranil Manna, Director, IIT Kanpur	Member
Prof. Bhaskar Ramamurthi, Director, IIT Madras	Member

Prof. P. P. Chakrabarti, Director, IIT Kharagpur	Member
Prof. Pradipta Banerji, Director, IIT Roorkee	Member
Prof. Rajeev Sangal, Director, IIT (BHU)	Member
Prof. Sarit Kumar Das, Director, IIT Ropar	Member
Prof. Timothy A Gonsalves, Director, IIT Mandi	Member
Prof. C. V. R. Murty, Director, IIT Jodhpur	Member
Prof. U. B. Desai, Director, IIT Hyderbad	Member
Prof. Sudhir Kumar Jain, Director, IIT Gandhinagar	Member
Prof. Pradeep Mathur, Director, IIT Indore	Member
Prof. R. V. Raja Kumar, Director, IIT Bhubaneswar	Member
Prof. P. P. Chakrabarti, Director, IIT Patna	Member
Prof. Ved Prakash, Chairman, UGC, New Delhi	Member
Prof. M. O. Garg, Director General, CSIR, New Delhi	Member
Dr. P. Rama Rao, Chairman, Council of Indian Institute of Science, Bangalore	Member
Prof. P. Balaram, Director, IISc, Bangalore	Member
Prof. Vijayalakshmi Ravindranath, Visitor's Nominee	Member
Dr. (Mrs.) Tessy Thomas, Visitor's Nominee	Member
Shri. Amarjeet Sinha, Addl. Secretary (TE), MHRD	Member
Prof. S. K. Joshi, Former Director, IIT Roorkee & National Physical Laboratory, New Delhi	Member
Dr. Avinash S. Pant, Vice Chairman, AICTE	Member
Director, Chennai Mathematical Institute, Chennai	Member
Prof. Sabyasachi Bhattacharya, Ex-Director, TIFR, Mumbai	Member
Dr. Kota Harinarayan, Chairman, Research Council of CSIO, Bangalore	Member
Shri Tarun Das, Chief Mentor, CII, Gurgaon	Member
Smt. Vasanthi Stanley, Member of Parliament (Rajya Sabha)	Member
Shri Janardhana Swamy, Member of Parliament (Lok Sabha)	Member
Shri. Deepender Singh Hooda, Member of Parliament (Lok Sabha)	Member
Shri J. Satyanarayan, Secretary, Department of Information Technology, New Delhi	Member
Secretary, Department of Expenditure, Ministry of Finance	Member

2.2 The Board of Governors

Shri. Ajai Chowdhry Founder, HCL	**Chairman**
Prof. P. P. Chakrabarti Director, IIT Patna	**Ex-Officio Member**
Principal Secretary DST, Govt. of Bihar	**Member**
Principal Secretary DST, Govt. of Jharkhand	**Member**
Prof. Amitabha Ghosh Former Director, IIT Kharagpur	**Member**
Prof. Sriman Kumar Bhattacharya Director, CBRI, Roorkee	**Member**
Prof. Ajay Chakrabarty Vice Chancellor, BIT Mesra	**Member**
Dr. T. Mukherjee Former Deputy Managing Director, Tata Steel	**Member**
Prof. J. N. Sinha Department of Electrical Engineering, IIT Patna	**Member**
Prof. S. Majumdar Dept. of Civil and Environmental Engineering, IIT Patna	**Member**
Mr. Subhash Pandey Registrar, Indian Institute of Technology Patna Patna-800 013	**Secretary**

2.3 The Finance Committee

Shri. Ajai Chowdhry Founder, HCL	**Chairman**
Prof. P. P. Chakrabarti Director, IIT Patna	**Member**
Additional Secretary Department of Higher Education MHRD, New Delhi	**Member**
Jt. Secretary & Financial Advisor (JS & FA) Department of Higher Education MHRD, New Delhi	**Member**
Prof. J. N. Sinha Department of Electrical Engineering, IIT Patna	**Member**
Prof. S. Majumdar Dept. of Civil and Environmental Engineering, IIT Patna	**Member**
Shri Subhash Pandey	**Member**

2.4 The Building & Works Committee

Prof. P. P. Chakrabarti Director, IIT Patna	**Chairman**
Prof. S. Majumdar Professor, Department of C&EE, IIT Patna	**Member**
Prof. A. K. Sinha Professor of Electrical Engineering, IIT Kharagpur Kharagpur-721 302	**Member**
Prof. B. K. Sengupta Professor of Architecture, IIT Kharagpur Kharagpur-721 302	**Member**
Prof. Siddhartha Datta Retired Professor, Department of Architecture IIT Kharagpur, Kharagpur-721 302	**Member**
Mr. Sushant Baliga Former Additional Director General CPWD Training Institute E-wing, Nirman Bhawan New Delhi – 110 011	**Outside Expert**
Mr. Subhash Pandey Registrar, IIT Patna Patna – 800 013	**Secretary**

2.5 Administrative Heads

- **Prof. P. P. Chakrabarti**
  Director, IIT Patna

- **Mr. Subhash Pandey**
  Registrar, IIT Patna

2.6 Senate

Chairman Senate	Prof. P. P. Chakrabarti, Director, IIT Patna
Prof.-in-charge, GATE & Postgraduate studies	Dr. Sanjoy Kumar Parida, Assistant Professor, Department of Electrical Engineering, IIT Patna
Prof.-in-charge, Undergraduate studies	Dr. Subrata Kumar, Assistant Professor, Department of Mechanical Engineering, IIT Patna
All Heads / Coordinators of Departments	Dr. N. K. Nishchal, Coordinator, Faculty Affairs Dr. Asif Ekbal, Coordinator, Department of CSE Prof. J. N. Sinha, Coordinator, Deptt. of Elect. Engg. Dr. Mayank Tiwari, Coordinator, Deptt. of Mech. Engg. Dr. U. Roy, Coordinator, Deptt. of Physics Dr. D. Seth, Coordinator, Deptt. of Chemistry Dr. S. Majhi, Coordinator, Deptt. of Mathematics Dr. Binod Mishra, Coordinator, Deptt. of Hum. & Soc. Sci. Dr. Pradipta Chakrabortty, Coordinator, Deptt. of Civil & Environ. Engg. Dr. S. K. Samanta, Coordinator, Deptt. of Chem. & Biochem. Engg. Dr. Anirban Chowdhury, Coordinator, Deptt. of Mat. Sci. & Engg. Prof. J. N. Sinha, Coordinator, School of Engineering & Technology Dr. M. Kar, Coordinator, School of Basic Sciences Dr. A. K. Upadhyay, Convener & Coordinator, IAPC Dr. Preetam Kumar, Coordinator, Student Affairs
Prof.-in-charge, JEE	Dr. Preetam Kumar, Assistant Professor, Department of Elect. Engg.
Prof..-in-charge, JAM	Dr. Amit Kumar, Assistant Professor, Department of Chemistry
Institute Ph.D Programme Coordinator	Dr. Neeladri Das, Assistant Professor, Department of Chemistry
Warden	Dr. Binod Mishra, Associate Professor, Deptt. of Hum. & Soc. Sci.
Prof.-in-charge, Gymkhana	Dr. S. Hussain, Assistant Professor, Deptt. of Mathematics
Prof.-in-charge, Library	Dr. Probir Saha, Assistant Professor, Deptt. of Mech. Engg.
All Professors of IIT Patna	Prof. S. Majumdar, Professor, Deptt. of Civil & Environ. Engg. Prof. J. N. Sinha, Professor, Deptt. of Elect. Engg.
One faculty at the level of Assistant Professor from any Department	Dr. Sriparna Saha, Assistant Professor, Deptt. of Comp. Sci. & Engg.
Student representatives of Undergraduate & Postgraduate studies	Mr. Akhil Shukla, Student representative of Undergraduate studies Mr. Nilotpal Chakraborty, Student representative of Postgraduate studies
Representative from industry	Dr. Pradeep Das, Scientist G & Director, RMRMIS, ICMR, Deptt. Of Health Research, Ministry of health and family welfare, Govt. of India
Alumni of any IIT	Mr. Chanchal Kumar, IAS, Secretary to Hon'ble Chief Minister, Government of Bihar, Chief Minister Secretariat, 4, Deshratna Marg, Patna-800001
Academician of repute	Prof. Ashok De, Director, National Institute of Technology, Patna-800005
Registrar as the Secretary	Mr. Subhash Pandey, Registrar, IIT Patna

2.7 Institute Academic Programme Committee (IAPC)

Chairman IAPC	Prof. P. P. Chakrabarti, Director, IIT Patna
Convener & Coordinator	Dr. A.K.Upadhyay, Assistant Professor, Department of Mathematics
All Senior Professor	Prof. S. Majumdar, Professor, Deptt. of Civil and Environ. Engg. Prof. J. N. Sinha, Professor, Deptt. of Elect. Engg.
All Departmental Coordinators	Dr. Asif Ekbal, Coordinator, Deptt. of Comp. Sci. & Engg. Prof. J.N. Sinha, Coordinator, Deptt. of Elect. Engg. Dr. Mayank Tiwari, Coordinator, Deptt. of Mech. Engg. Dr. Utpal Roy, Coordinator, Department of Physics Dr. Debabrata Seth, Coordinator, Department of Chemistry Dr. Sudhan Majhi, Coordinator, Department of Mathematics Dr. Binod Mishra, Coordinator, Department of Hum. & Soc. Sciences Dr. Pradipta Chakrabortty, Coordinator, Deptt. of Civil and Environ. Engg. Dr. Sujoy Kumar Samanta, Coordinator, Deptt. of Chem. & Biochem. Engg. Dr. Anirban Chowdhury, Coordinator, Deptt. of Mat. Sci. & Engg. Prof. J. N. Sinha, Coordinator, School of Engineering & Technology Dr. Manoranjan Kar, Coordinator, School of Basic Sciences
Professor-in-charge, Faculty Affairs	Dr. Naveen Kumar Nishchal, Assistant Professor, Deptt. of Physics
Faculty-in-charge, M.Tech affairs and GATE	Dr. Sanjoy Kumar Parida, Assistant Professor, Deptt. of Elect. Engg.
Prof.-in-charge, Undergraduate studies	Dr. Subrata Kumar, Assistant Professor, Deptt. of Mech. Engg.
Institute Ph.D Programme Coordinator	Dr. Neeladri Das, Assistant Professor, Deptt. of Chemistry
Faculty-in-charge, Academic Registration	Dr. P.K.Srivastava, Assistant Professor, Deptt. of Mathematics
Prof.-in-charge, Examination & Time Table	Dr. N.K.Tomar, Assistant Professor, Deptt. of Mathematics
Secretary	Mr. Tripurari Sharan Sinha, Assistant Registrar

3. School of Engineering

3.1 Computer Science & Engineering

3.1.1 Faculty List

Assistant Professors

Name	Highest Degree	Research Areas
Asif Ekbal (Co-ordinator)	**Ph.D.**	Natural Language Processing, Machine Learning, Bio-text Mining
Somanath Tripathy	**Ph.D.**	Lightweight Cryptography, Wireless Network Security, P2P Security
Arijit Mondal	**Ph.D.**	CAD for VLSI, Embedded Control Systems
Ashok Singh Sairam	**Ph.D.**	Computer Networks and Network Security
Rajiv Mishra	**Ph.D.**	Wireless Sensor Network, Adhoc Network, Mobile Computing, Distributed Computing
Raju Halder	**Ph.D.**	Formal Methods for Analysis and Verification, Abstract Interpretation, Programming Languages, Databases, Electronic Voting Protocols
Samrat Mondal	**Ph.D.**	Database, Security and Privacy, Software Engineering
Sriparna Saha	**Ph.D.**	Pattern Recognition, Natural Language Processing, Biomedical Text Mining
Joydeep Chandra	**Ph.D.**	Peer-to-Peer Systems, Online Social Networks, Complex Networks, Distributed Systems
Abyayananda Maiti	**Ph.D.**	Online Algorithms, Complex Networks, Social Networks, Big Data

3.1.2 Academic Programs

- B.Tech. in Computer Science and Engineering.

- M.Tech. in Mathematics and Computing (together with Department of Mathematics).
- M.Tech. in Computer Science and Engineering
- Ph.D. Program.

3.1.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Samrat Mondal,** Development of an efficient authentication scheme to be used in public domain. (Science & Engineering Research Board (SERB), **Rs.14.45 Lakhs**).
- **PIs: Dr. Asif Ekbal** and **Dr. Sriparna Saha,** Development of Automated Tools using Machine Learning and Soft Computing for Information Extraction from Biomedical Domains (CENTRE FOR ADVANCED SYSTEM ENGINEERING, IIT PATNA, **Rs.5.90 Lakhs**).
- **PI: Dr. Asif Ekbal,** Development of Ontology for Agriculture Domain in Indian Languages for E-Gov Applications (TDIL, DeiTY, **Rs.16.10 Lakhs**).
- **PIs: Dr. Sriparna Saha** and **Dr. Asif Ekbal,** Development of Some Novel Methods for Semi-supervised Machine Learning and its Applications to Language Technology (TDIL, DEITy, **Rs.30.00 Lakhs**).
- **PI: Dr. Asif Ekbal,** Indian Language to English Statistical Machine Translation (TDIL, DeiTY, **Rs.23.47 Lakhs**).
- **PI: Dr. Arijit Mondal,** Smart Energy Management in Office Building (IIT Patna, **Rs.9.10 Lakhs**).
- **PI: Dr. Rajiv Misra,** Vehicular Sensor and Mesh Networks based Future ITS (Deity, **Rs.100.15 Lakhs**).

Consultancy Projects

- **Dr. Sriparna Saha** conducted Machine Learning Training on behalf of Tata Consultancy Services Ltd. (TCS) in the year 2014 (TCS, Rs.1.20 Lakhs)
- **Dr. Asif Ekbal** conducted training on NLP as part of the data science program (TCS, Rs.1.20 Lakhs).

Papers Published in Journals:

- A. Alok, **S. Saha** and **A. Ekbal**, A New Semi-supervised Clustering Technique using Multi-objective Optimization, Applied Intelligence, Accepted (2015).

- S. Shukla, **R. Misra**, Angle Based Double Boundary Detection in Wireless Sensor Networks, Journal of Networks, 9 (3), 612-619 (2014).
- Debasis Das, **Rajiv Misra** and A Raj, Approximating geographic routing using coverage tree heuristics for wireless network, Wireless Networks, to appear (2014).
- D Das and **R Misra**, Caching Algorithm for Fast Handoff using AP Graph with Multiple Vehicles for VANETs, International Journal of Communication Networks and Distributed Systems 14, 3 (2015).
- A. K. Alok, **S. Saha** and **A. Ekbal**, Development of An External Cluster Validity Index using Probabilistic Approach and Min-max Distance, Journal of Computer Information Systems and Industrial Management Applications (IJCISIM) 6, 494 (2014).
- U. Sikdar, **A. Ekbal, S. Saha**, O. Uryupina and Massimo Poeiso, Differential Evolution based Feature Selection Technique for Anaphora Resolution, Soft Computing, DOI 10.1007/s00500-0 (2014).
- Tapas Pandit, Rana Barua and **Somanath Tripathy**, eCK Secure Single Round ID-based Authenticated Key Exchange Protocols with Master Perfect Forward Secrecy (Extended Version), Journal of Wireless Mobile Networks, Ubiquitous Computing and Dependable Applications 5, 65 (2014).
- U. Sikdar, **A. Ekbal** and **S. Saha**, Entity Extraction in Biochemical Text using Multiobjective Optimization, Computacin y Sistemas, 18 (2014).
- **A. Ekbal** and **S. Saha**, Feature and Parameter Optimization using Multiobjective Optimization for Named Entity Recognition, Machine Learning and Cybernatics, DOI 10.1007/s13042-0 (2014).
- **S. Saha, A. Ekbal**, A. Alok and R. Spandana, Feature Selection and Semi-supervised Clustering Using Multiobjective Optimization, SpringerPlus, 3:465 (2014).
- Nilesh Chakraborty and **Samrat Mondal**, I-SLASS : An Improved Login Approach Over SLASS, International Journal of Trust Management in Computing and Communications, 2 (2014).
- Samant Saurabh and **Ashok Singh Sairam**, ICMP based IP traceback with negligible overhead for highly distributed reflector attack using bloom filters, Computer Communications 42, 60 (2014).
- S. Shukla, N. Kumar, **R. Misra**, Impact of Bloom Filter on Infection Rate in Epidemic Forwarding for ICNs, Wireless personal communications, 75 (4), 2165-2180 (2014).
- **A. Ekbal** and **S. Saha**, Joint Model for Feature Selection and Parameter Optimization Coupled with Classifier Ensemble in Chemical Mention Recognition, Knowledge Based Systems, Accepted (2015).

- **R. Misra**, S. Shukla, V. Chandel, Lightweight Localization Using Trilateration for Sensor Networks, International Journal of Wireless Information Networks, 21 (2), 89-100 (2014).
- U. Sikdar, **A. Ekbal and S. Saha**, MODE: Multiobjective Differential Evolution for Feature Selection and Classifier Ensemble, Soft Computing, DOI: 10.1007/s00500 (2015).
- Arka Prokash Mazumdar, Anandghan Waghmare and **Ashok Singh Sairam**, Modelling Energy Efficiency of OR Protocols in Wireless Networks, International Journal of Ad Hoc and Ubiquitous Computing, 16(1):42-57 (2014).
- S. Acharya, **S. Saha** and Y. Thadisina, Multiobjective Simulated Annealing based Clustering of Tissue Samples for Cancer Diagnosis, IEEE Journal of Biomedical and Health Informatics (J-BHI), Accepted (2015).
- **S. Saha, A. Ekbal** and U. Sikdar, Named Entity Recognition and Classification in Biomedical Text Using Classifier Ensemble, International Journal of Data Mining and Bioinformatics, 11, 2015 (2015).
- **A. Ekbal, S. Saha** and U. Sikdar, On Active Annotation for Named Entity Recognition from Indian Languages and Biomedical Domain, International Journal of Machine Learning and Cybernetics, Accepted (2014).
- Rakesh Matam and Somanath Tripathy, Provably Secure On-Demand Routing Protocol for Wireless Mesh Networks, Intl.Journal of Network Security, Vol.16(3),pp.168-178 (2014).
- A. Alok, **S. Saha** and **A. Ekbal**, Semi-Supervised Clustering for Gene-Expression Data in Multiobjective Optimization Framework, International Journal of Machine Learning and Cybernetics, Accepted (2015).
- **A. Ekbal** and **S. Saha**, Simultaneous Feature and Parameter Selection Using Multiobjective Optimization: Application to Named Entity Recognition, International Journal of Machine Learning and Cybernetics, DOI 10.1007/s13042-0 (2014).
- **S. Saha**, R. Spandana, **A. Ekbal** and S. Bandyopadhyay, Simultaneous Feature Selection and Symmetry Based Clustering using Multiobjective Framework, Applied Soft Computing, Accepted (2014).
- M. Krallinger, O. Rabal, F. Leitner, Vazquez, U. K. Sikdar, **A. Ekbal** and I. Segura-Bedmar, The CHEMDNER corpus of chemicals and drugs and its annotation principle, Journal of Cheminformatics, (Suppl 1), S2 (2014).

Papers Presented in Conferences:

- Tapas Pandit, Rana Barua and **Somanath Tripathy**, eCK Secure Single Round ID-based Authenticated Key Exchange Protocols with Master Perfect forward Secrecy, Intl. conf. of Network and System Security (NSS2014), China (2014).
- Amandeep Singh and **Somanath Tripathy**, TabSol:An efficient framework to defend Tabnabbing, ICIT2014, Bhubaneswar Odisha (2014).
- **Rajiv Misra**, RN Yadav, Saurav Bhagat, Vinod Dosapatty 2-Hop Neighbour Knowledge-based Clustering in CRN under Opportunistic Channel Access, International Conference on Telecommunication Technology & Management(ICTTM-2015), IIT Delhi (2015).
- Ans Alghamdi, Francesca Bonin, **Asif Ekbal, Sriparna Saha,** Fabio Cavulli, Sara Tonelli and Massimo Poesio, Active Expert Learning for the Digital Humanities, Proceedings of the Workshop on Semantic Technologies for Research in the Humanities and Social Sciences (STRiX), University of Gothenburg, Sweden (2014).
- Nilesh Chakraborty and **Samrat Mondal,** An Improved Methodology Towards Providing Immunity Against Weak Shoulder Surfing Attack, 10th International Conference on Information and Systems Security (ICISS 2014), Hyderabad, India (2014).
- T. Sen, **S. Saha, A. Ekbal** and A. Laha, Bi-objective Portfolio Optimization Using Archive Multi-objective Simulated Annealing, International Conference on High Performance Computing and Applications (ICHPCA)2014, Bhubaneswar, India (2014).
- Tanmay Sen, **Sriparna Saha, Asif Ekbal** and Arnab Laha, Bi-objective Portfolio Optimization Using Archive Multi-objective Simulated Annealing, 2014 INTERNATIONAL CONFERENCE ON HIGH PERFORMANCE COMPUTING AND APPLICATIONS (ICHPCA), Bhubenswar, India (2014).
- Sumit Mishra, **Sriparna Saha and Samrat Mondal,** Cluster Validation Techniques for Bibliographic Databases, IEEE TechSym 2014, Kharagpur, India (2014).
- Nilesh Chakraborty and **Samrat Mondal,** Color Pass: An Intelligent User Interface to Resist Shoulder Surfing Attack, IEEE TechSym 2014, Kharagpur, India (2014).
- Dhruv Gupta and **Asif Ekbal,** Determining Trustworthiness in E-Commerce Customer Reviews, Proceedings of the 11th International Conference on Natural Language Processing (ICON-14), Goa, India (2015).
- S. Acharya, **S. Saha and** S. Bandyopadhyay, Development of Some Line Symmetry Based Cluster Validity Indices, In the Proceedings of 2014 Intl. Conference on Soft Computing and Machine Intelligence (ISCMI2014), New Delhi, India (2014).
- U. Sikdar, **A. Ekbal** and **S. Saha,** Differential Evolution based Multiobjective Optimization for Biomedical Entity Extraction, Proceedings of the International

Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), Greater Noida (2014).

- R Ranjan and **R Misra,** Epidemic disease propagation detection algorithm using MapReduce for realistic social contact networks, International Conference on High Performance Computing and Applications, ICHPCA, Bhubaneswar, Odisha (2014).
- Akash Yadav, Anandghan Waghmare and **Ashok Singh Sairam,** Exploiting Node Heterogeneity for Time Synchronization in Low Power Sensor Networks, IEEE International Conference on Contemporary Computing and Informatics (IC3I), Mysore, India (invited paper), (2014).
- A. Siddharth and **A. Ekbal,** Feature Extraction and Opinion Mining in Online Product Reviews, Proceedings of the 13th International Conference on Information Technology (ICIT-2014), Bhubenswar, India (2015).
- A. Alok, **S. Saha, A. Ekbal** and R. Spandana, Feature Selection and Semi-supervised Clustering Using Multiobjective Optimization, In the Proceedings of 2014 Intl. Conference on Soft Computing & Machine Intelligence (ISCMI2014), New Delhi, India (2014).
- U. K. Sikdar, **A. Ekbal** and **S. Saha,** Feature Selection in Anaphora Resolution for Bengali: A Multiobjective Approach, 16th International Conference on Intelligent Text Processing and Computational Linguistics (CICLing 2015), Cairo, Egypt (2015).
- Ajay Pratap and **Rajiv Misra,** Firefly inspired Improved Distributed Proximity Algorithm for D2D Communication, 29th IEEE International Parallel & Distributed Processing Symposium IPDPS (NIDISC 2015), Hyderabad (2015).
- Abhay Alok, **Sriparna Saha** and **Asif Ekbal,** Gene-ExpressionData Semi-Supervised Clustering in Multi-Objective Optimization Framework, Proceedings of the International Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), Greater Noida, India (2014).
- S. Acharya and **S. Saha,** Identifying Co-expressed miRNAs using Multiobjective Optimization, 2014 International Conference on Information Technology (ICIT 2014), Bhubaneswar, India (2014).
- R. Selvarajan and **A. Ekbal,** IIT Patna: Supervised Approach for Sentiment Analysis in Twitter, Proceedings of SemEval-14, COLING-14, Dublin, Ireland (2014).
- U. K. Sikdar, **A. Ekbal and S. Saha,** IITP: A Supervised Approach for Disorder Mention Detection and Disambiguation, In the Proceedings of SemEval-2014 : Semantic Evaluation Exercises International Workshop on Semantic Evaluation (SemEval-2014), Dublin, Ireland (2014).

- D. Gupta and **A. Ekbal,** IITP:Supervised Machine Learning for Aspect based Sentiment Analysis, Proceedings of SemEval-14, COLING-14, Dublin, Ireland (2014).
- **Ashok Singh Sairam,** Rahul Kumar and Pratima Biswas, Implementation of a Traffic-aware firewall, Security of Information and Networks (SIN 2014), Glasgow, UK. (2014).
- V. Singh, A. Khan and **A. Ekbal,** Indian Institute of Technology-Patna: Sentiment Analysis in Twitter, Proceedings of SemEval-14, COLING-14, Dublin, Ireland (2014).
- A. Kumar, C. Kansal and **A. Ekbal,** Investigating Active Learning Techniques for Document Level Sentiment Classification of Tweets, Social Networking Workshop, COMSNET-15, Bangalore (2015).
- V. Singh and **S. Saha,** Modified differential evolution based 0/1 clustering for classification of data points, 1st International Conference on Contemporary Computing and Informatics (IC3I), Mysore, India (2014).
- U. K. Sikdar, **A. Ekbal, S. Saha,** Modified Differential Evolution for Biochemical Name Recognizer, In Proceedings of the 15th International Conference on Computational Linguistics and Intelligent Text Processing} - Volume 8403 (CICLing 2014), Nepal (2014).
- A. Alok, **S. Saha, A. Ekbal,** MR Brain Image Segmentation Using Muti-objective Semi-supervised Clustering, IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems 2015, (IEEE SPICES 2015), NIT Calicut, Kozhikode, Kerala, India (2015).
- S. Acharya, Y. Thadisina and **S. Saha** Multi-objective clustering of tissue samples for cancer diagnosis, In the Proceedings of International Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), New Delhi, India (2014).
- S. Acharya, **S. Saha**, J. G. Moreno and G. Dias, Multi-Objective Search Results Clustering, In the Proceedings of 25th International Conference on Computational Linguistics (COLING 2014), Dublin (2014).
- Govind, **Asif Ekbal** and Chris Biemann, Multiobjective Optimization and Unsupervised Lexical Acquisition for Named Entity Recognition and Classification, Proceedings of the 11th International Conference on Natural Language Processing (ICON-14), Goa, India (2014).
- RN Yadav, **R Misra,** Multipath routing protocols in Cognitive Radio Networks, INDICON 2014, Pune (2014).
- Sumit Mishra, **Sriparna Saha** and **Samrat Mondal,** On Validation of Clustering Techniques for Bibliographic Databases, 22nd International Conference on Pattern Recognition (ICPR 2014), Stockholm, Sweden (2014).

- R. N. Yadav, **R. Misra**, U. Gupta, S. Bhagat, Opportunistic Spectrum Access in CR Network in Licensed and Unlicensed Channels, 16th International Conference on Distributed Computing and Networking (ICDCN 2015), Goa, India (2015).
- Nishant M. Gandhi, **R. Misra,** Performance comparison of parallel graph coloring algorithms on BSP model using hadoop, International Conference on Computing, Networking and Communications (ICNC 2015), Anaheim, California, USA (2015).
- A. Alok, **S. Saha** and **A. Ekbal,** Pixel Classification of Remote Sensing Satellite Image using Semi-supervised Clustering, IEEE International Conference ICIIS-2014, ABVIIITM, Gwalior, India (2014).
- Abhay Alok, **Sriparna Saha** and **Asif Ekbal,** Pixel Classification of Remote Sensing Satellite Image using Semi-supervised Clustering. , IEEE International Conference ICIIS-2014, ABVIIITM,Gwalior India (2014).
- A. Kumar Laha, T. Sen and **S. Saha,** Portfolio Optimization Using Krylov Subspace method MINRES-QLP, 4th IIMA International Conference on Advanced Data Analysis, IIM Ahmedabad (2015).
- Nemi Chandra Rathore, **Somanath Tripathy** and **Joydeep Chandra,** Predicting User Visibility in Online Social Networks using Local Connectivity Properties, International Conference on Distributed Computing and Internet Technology (ICDCIT), Bhubaneswar, India (2015).
- U. Gupta, R. N. Yadav, **R. Misra,** QoS based opportunistic channel scheduling in cognitive radio networks, TENCON 2014, Bangkok, Thailand (2014).
- Ayush Jain, Saswat Raj, Harshit, **Rajiv Misra,** B. M. Baveja, Road Congestion Sensing via Crowdsourcing and MapReduce, 14th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN 2015), Seattle, WA, USA (2015).
- Avijit Gayen and **Joydeep Chandra,** Role of Trust in Evolution of Scientific Collaboration Networks, International Conference on Social Computing (SocialCom), Beijing, China (2014).
- S.K. Teterave, **Somanath Tripathy** and **S. Peri,** S-Gossip: Security enhanced Gossip Protocol for Unstructured P2P Networks, ICDCIT, Bhubaneswar Odisha (2015).
- Abhay Alok, **Sriparna Saha, Asif Ekbal,** Neha Kanekar Simultaneous Feature Selection and Semi-supervised Clustering for Gene-Expression Data, IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems 2015, (IEEE SPICES 2015), Kerala India (2015).
- A. Alok, **S. Saha** and **A. Ekbal,** Simultaneous Feature Selection and Unsupervised Clustering for Gene-Expression Data in Multiobjective Optimization Framework, IEEE International Conference ICIIS-2014, ABVIIITM, Gwalior, India (2014).

- Nilesh Chakraborty and **Samrat Mondal,** SLASS: Secure Login Against Shoulder Surfing, 2nd International Conference on Security in Computer Networks and Distributed Systems (SNDS 2014), Thiruvanthapuram, India (2014).
- Nilesh Chakraborty and **Samrat Mondal,** Tag Digit Based Honeypot to Detect Shoulder Surfing Attack, 2nd International Symposium on Security in Computing and Communications (SSCC 2014), Greater Noida, India (2014).
- Mohammed Hasanuzzaman, **S. Saha**, G. Dias, S. Ferrari, Understanding Temporal Query Intent, The 38th Annual ACM SIGIR Conference (accepted), Santiago, Chile (2015).

3.1.4 Other Activities

Fellow - Professional Bodies:

- Rajiv Misra (2014) IETE.

Member - Professional Bodies:

- Arijit Mondal (2014) IEEE.
- Ashok Singh Sairam (2010) International Association of Computer Science and Information Technology (IACSIT).
- Ashok Singh Sairam (2010) IEEE.
- Asif Ekbal (2013) IEEE.
- Asif Ekbal (2012) Association for Computational Linguistics.
- Joydeep Chandra (2013) European Society on Mathematical and Theoretical Biology.
- Rajiv Misra (2014) IEEE.
- Raju Halder (2011) International Association of Engineers (IAENG).
- Samrat Mondal (2011) IEEE.
- Sathya Peri (2013) Association for Computing Machinery.
- Somanath Tripathy (2006) Cryptology Research Society of India.
- Somanath Tripathy (2009) IEEE.
- Sriparna Saha (2014) IEEE.
- Sriparna Saha (2009) The Association of Computer, Electronics and Electrical Engineers (ACEEE).

Member - Editorial Board:

- Raju Halder (2012) *Member* - International Journal of Advanced Computer Research IJACR.
- Sriparna Saha (2013) *Member* - Scientific World Journal.

Visits Abroad by Faculty Members:

- Ashok Singh Sairam - Attend the conference Conference on Security of Information and Networks (SIN 2014) (Glasgow University, Scotland UK),9-11 September 2014.
- Rajiv Misra - Paper Presentation in ICNC 2015 Title Performance comparison of parallel graph coloring algorithms (Anaheim, California, USA) February 16-19, 2015.
- Sriparna Saha - Visiting Researcher (University of Caen, France) May-July, 2014.
- Joydeep Chandra - Paper presentation in conference (Beijing, China) August 4 – 7.
- Asif Ekbal - Academic collaboration (University of Caen, France) 07-06-2014 to 12-07-2014.

Invited Lectures by Faculty Members:

- Demand Side Management in Smart Grids *by* Arijit Mondal (IIT Guwahati).
- Percolation Theory and Resilience analysis of complex networks *by* Joydeep Chandra (IIT Kharagpur).
- Named Entity Recognition *by* Asif Ekbal (IIIT Hyderabad).
- Some Issues in Named Entity Recognition, Biotext Mining and Coreference Resolution *by* Asif Ekbal (South Asian University).

Awards & Honours

1. Sriparna Saha (2014) Selected as most inspiring Women Engineer/Scientist for the year 2014 by Engineering Watch Magazine.

3.2 Electrical Engineering

3.2.1 Faculty List

Professor

Name	Highest Degree	Research Areas
J. N. Sinha (Coordinator)	**Ph.D.**	High Voltage Engineering

Assistant Professors

Name	Highest Degree	Research Areas
Preetam Kumar	**Ph.D.**	Physical Layer in Wireless Communications, Communication Systems, Signal Processing for Communication
Mahesh Kumar Kolekar	**Ph.D.**	Digital Signal Processing, Digital Image and Video Processing, Medical Image Processing, Video Surveillance
Ahmad Ali	**Ph.D.**	Controller Tuning Strategies for Unstable and Integrating Processes
Aneek Adhya	**Ph.D.**	Optical Communication, Optical Networks
Kailash Chandra Ray	**Ph.D.**	VLSI Architectural Design, VLSI Signal Processing, Digital VLSI Design, FPGA based System Design, Embedded System Design
Ranjan Kumar Behera	**Ph.D.**	Design Power Electronics, Electrical Machines, Renewal Energy Integration
Rajib Kumar Jha	**Ph.D.**	Image and Video Processing, Multimedia applications, Medical Imaging, Stochastic resonance, Fractional differential/integral equations, Sparse for signal and image applications

Sanjoy Kumar Parida	**Ph.D.**	Power Systems Operation and Control, FACTS, Renewable Energy Integration, Microgrid
Shovan Bhaumik	**Ph.D.**	Nonlinear estimation, Aerospace Target Tracking, Smart material
Sumanta Gupta	**Ph.D.**	Optical Communication and Photonics
Yatendra Kumar Singh	**Ph.D.**	RF and Microwave
S. Sivasubramani	**Ph.D.**	Power System Optimization, Power System Analysis
Sudhan Majhi	**Ph.D.**	Wireless Communications and Signal Processing

Adjunct Professor

Name	Highest Degree	Research Areas
Vijoy Kumar	**M.Tech. (Former Chief General Manager, BSNL)**	Industry applications in Communications System

3.2.2 Academic Programs

- B.Tech. in Electrical Engineering.
- M.Tech. in Communication System Engineering.
- M.Tech. in Mechatronics (jointly with the Mechanical Engineering Department).
- Ph.D. Program.

3.2.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Yatendra Kumar Singh,** Design and Analysis of High Performance RF MEMS-based Electronically Reconfigurable Filters for Wireless Communication Applications (SERB (DST), **Rs.26.75 Lakhs**).
- **PI: Dr. Dr. P. Kumar and Dr. K. C. Ray,** Design and FPGA prototyping of multicarrier multiple access schemes for variable rate multimedia satellite communication (DEITy, New Delhi, **Rs.104.05 Lakhs**).
- **PI: Dr. Rajib Kumar Jha,** Medical Image Restoration and Signal Detection Using Stochastic Resonance (Submitted to DEITY, **Rs.55.00 Lakhs**).
- **PI: Dr. Dr.S.K. Parida,** Microgrid Management (IIT Patna (Seed Grant), **Rs.43.00 Lakhs**).
- **PI: Dr. Dr. R.K. Behera,** Modeling, Design and Implementation of Induction Motor Drives for Propulsion Applications (Ministry of Communications and Information Technology, Govt. of India, **Rs.50.16 Lakhs**).
- **PI: Dr. Dr. R.K. Behera,** Integrated Automatic Voltage Control of a High Efficient Solar PV System (Department of Science & Technology (DST), Govt. of India, **Rs. 32.00 Lakhs**).
- **PI: Dr. Dr. R.K. Behera,** High Power AC Drives for Electric Locomotive and General Purpose off Highway Applications (Fast-Track project, Department of Science & Technology (DST), Govt. of India, **Rs. 19.00 Lakhs**).

Papers Published in Journals:

- Vivek S. Verma, **Rajib Kumar Jha,** Aparajita Ojha, Watermark extraction using support vector machine with PCA based feature reduction, Journal of Visual Communication and Image Representation, (2015).
- Vivek S. Verma, **Rajib Kumar Jha,** An Overview of Robust Digital Image Watermarking, IETE Technical Review, (2015).
- Nagendra Kumar, **Yatendra K Singh,** Compact stub-loaded open-loop BPF with enhanced stopband by introducing extra transmission zeros, IET Electronics Letters, 51, 164-66 (2015).

- Nagendra Kumar, **Yatendra K Singh,** Compact tri-band bandpass filter using three stub-loaded open-loop resonator with wide stopband and improved bandwidth response, IET Electronics Letters, 52, 1950-52 (2014).
- Vikas Kumar, **K. C. Ray** and **Preetam Kumar,** CORDIC-based VLSI architecture for real time implementation of flat top window, Microprocessors and Microsystems, 38, 1063-–1071 (2014).
- **Rajib Kumar Jha,** Rajlaxmi Chouhan, Dynamic stochastic resonance-based grayscale logo extraction in hybrid svd-dct domain, Journal of the Franklin Institute, 351, 5, 2938-2965 (2014).
- **Rajib Kumar Jha,** Rajlaxmi Chouhan, Kiyoharu Aizawa, Dynamic stochastic resonance-based improved logo extraction in discrete cosine transform domain, Computers & Electrical Engineering, 40, 6, 1917-1929 (2014).
- **S. Sivasubramani** and Md Samar Ahmad, Hybrid Harmony Search Algorithm and Interior Point Method for Economic Dispatch with Valve-Point Effect, International Journal of Emerging Electric Power Systems, 15(3) 253-261 (2014).
- R. Shukla and **K. C. Ray,** Low Latency Hybrid CORDIC Algorithm, IEEE TRANSACTIONS ON COMPUTERS, 63, 3066-3078 (2014).
- Moina Ajmeri and **Ahmad Ali,** Simple Tuning Rules for Integrating Processes with Large Time Delay, Asian Journal of Control, (2015).
- Moina Ajmeri and **Ahmad Ali,** Two degree of freedom control scheme for unstable processes with small time delay, ISA Transactions, (2015).
- S. Payami, R. K Behera, A. Iqbal and R. Al-ammari, Common mode voltage and vibration mitigation of a five-phase three-level NPC inverter fed induction motor drive system, IEEE Journal of Emerging and Selected Topics in Power Electronics, 3, 349 (2015).

- Prashant Kumar and **Preetam Kumar**, "A Comparative Study of Spread OFDM with Transmit Diversity for Underwater Acoustic Communications", Springer Wireless Personal Communications, February 2015
- Sudhanshu Verma and **Preetam Kumar**, "Compact Arc Shaped Antenna with Binomial Curved Conductor-Backed Plane for Multiband Wireless Applications," IET Microwave Antennas and Propagation, Volume 9, Issue 4, 19 March 2015, p. 351 – 359
- Prabina Pattanayak, K. M. Roy and **Preetam Kumar**, "Analysis of a new MIMO Broadcast Channel Limited Feedback Scheduling Algorithm with user Grouping," Springer Wireless Personal Communication, vol. 80, pp. 1079–1094, Feb.2015.

- Sudhanshu Verma and **Preetam Kumar**, "Printed Newton's egg curved monopole antenna for ultra wideband applications," IET Microwave Antennas and Propagation, vol. 8, no. 4, pp. 278-286, 2014.
- Sudhanshu Verma and **Preetam Kumar**, "Printed egg curved slot antennas for wideband applications," Progress in Electromagnetic Research PIER B, Vol. 58, pp. 111-121, 2014.
- Sudhanshu Verma and **Preetam Kumar**, "Printed inverted-L shaped monopole antenna with parasitic inverted-F element for dual band applications," Microwave and Optical Technology Letters, Wiley, vol. 56, no. 5, pp. 1163-1167, 2014.
- Sudhanshu Verma and **Preetam Kumar**, "Compact triple band antenna for WiMAX and WLAN applications," IET Electronics Letters, vol. 50, no. 7, pp. 484-486, 2014.

Papers Presented in Conferences:

- K. B. Sai Kiran, S. Brahma, **S. K. Parida and R. K. Behera,** Analysis of Inductive Resonant Coupled WPT System using Reflected Load Theory, IEEE International Conference on Power Electronics, Drives and Energy Systems 2014, Indian Institute of Technology Mumbai (2014).
- Nagendra Kumar, **Yatendra K Singh,** Bandpass to Bandstop Switchable and Tunable Filter, International Conf on MEMS and Sensors, , Indian Institute of Technology Madrass (2014).
- **R. K. Behera and S. K. Parida,** DC Microgrid Management Using Power Electronics Converters, 18th National Power Systems Conference, Indian Institute of Technology Guwahati (2014).
- M. A. Hasan and **S. K. Parida,** Effect of non-uniform irradiance on electrical characteristics of an assembly of PV panels, IICPE, NIT Kurukshetra (2014).
- S. Pal, K. K. Soundra Pandian and **K. C. Ray,** FPGA implementation of stream cipher using Toeplitz Hash function, IEEE Int. Conf. Advances in Computing, Communications and Informatics (IEEE-ICACCI 2014), Delhi (2014).
- Rakesh Palisetty, Vibhooti Kumar Sinha, Saugata Mallick and **K. C. Ray,** FPGA prototyping of energy dispersal and improved error efficiency techniques for DVB-satellite standard, IEEE Int. Conf. VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), Bangalore (2015).
- G Llyods Raja and **Ahmad Ali,** Modified Parallel Cascade Control Structure for Integrating, RDCAPE, NOIDA (2015).

- Md. J. Akhtar, **R. K. Behera** and **S. K. Parida,** Optimized Rotor Slot Shape for Squirrel Cage Induction Motor in Electric Propulsion Application, IICPE, NIT Kurukshetra (2014).
- **K. C. Ray** and A. S. Dhar, Parallel architecture for real time computation of discrete Mellin transform, IEEE Int. Conf. Emerging Technology Trends in Electronics, Communication and Networking (ET2ECN), , Surat, India (2014).
- Nagendra Kumar, **Yatendra K Singh,** RF MEMS Based Switchable Tri/Dual/Single-Band Bandstop Filter using Stub Loaded Open Loop Resonator, Antenna and Propogation Symposium, Cochin University of Science and Technol (2014).
- **R. K. Behera**, and O. Ojo, Modeling, Control and Experimental Realization of a 10 kW Grid Connected PV Power System, in Proceedings of PEDES'14, IIT Bombay, India, December 15-19, 2014, pp. 1-6.
- Md. J. Akhtar, **R. K. Behera**, **S. K. Parida**, Optimized Rotor Slot Shape for Squirrel Cage Induction Motor in Electric Propulsion Application, IICPE, December 08-10, 2014, NIT Kurukshetra.
- Suman Kr. Dey and **Aneek Adhya**, "Design of CapEx-Efficient IP-over-WDM Network using Auxiliary Matrix based Heuristic," IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS), pp. 1-6, New Delhi, Dec. 2014.
- Prashant Kumar, Vinay K. Trivedi and **Preetam Kumar**, "Performance evaluation of DQPSK OFDM for underwater acoustic communications," Underwater Technology (UT), 2015 IEEE , vol., no., pp.1,6, Feb. 23-25, 2015.
- Sudhanshu Verma and **Preetam Kumar**, "Printed multiband Minkowski fractal curved antenna," Communications (NCC), Twentieth National Conference on , vol., no., pp.1,5, Feb. 28 - March 2, 2014.
- P. Nayak, S. Verma, and **Preetam Kumar**, "A novel compact tri-band antenna design for WiMAX, WLAN and Bluetooth applications," Communications (NCC), 2014 Twentieth National Conference on , vol., no., pp.1,6, Feb. 28 - March 2, 2014.
- Rajan Kapoor, S. Shyam Sundar and **Preetam Kumar**, "CORDIC based reconfigurable architecture for DS-CDMA/CI transmitter," Students' Technology Symposium (TechSym), 2014 IEEE , vol., no., pp.126,131, Feb. 28 - March 2, 2014.
- Prashant Kumar, Vinay K. Trivedi and **Preetam Kumar**, "Recent trends in multicarrier underwater acoustic communications," Underwater Technology (UT), 2015 IEEE , vol., no., pp.1,8, Feb. 23-25, 2015.

3.2.4 Other Activities

Member - Professional Bodies:

- Aneek Adhya (2010) IEEE.
- Kailash Chandra Ray (2014) IEEE.
- Mahesh Kumar Kolekar (2008) IEEE.
- Mahesh Kumar Kolekar (1998) IETE.
- Mahesh Kumar Kolekar (1998) ISTE.
- Mahesh Kumar Kolekar (2000) CSI.
- Preetam Kumar (2008) IEEE.
- Ranjan Kumar Behera (2013) IEEE.
- S. Sivasubramani (2014) IEEE.
- Sanjoy Kumar Parida (2009) Power and Energy Society, IEEE.
- Sanjoy Kumar Parida (2006) IEEE.
- Sumanta Gupta (2010) IEEE.

Member - Editorial Board:

- Mahesh Kumar Kolekar (2013) Technical Programme Committee Member - National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, IIT Rajasthan.

Visits Abroad by Faculty Members:

- Ranjan K. Behera - Tennessee Technological University, Tennessee, USA for 3 month under Bhaskara Advanced Solar Energy (BASE) Fellowship.

Invited Lectures by Faculty Members:

- Biomass Energy Technologies: An Overview and Scope by **Sanjoy Kumar Parida** (IIT Kanpur).
- Optimal Location of Distributed Generators Using Mixed Integer Non Linear Programming (MINLP) by **Sanjoy Kumar Parida** (Gujurat Technological University).
- ASIC Design Flow and Static Timing Analysis by **Kailash Chandra Ray** (CVRCE, Bhubaneswar).

- Invited speaker in Research Conclave, title of presentation is "Green Energy Possibilities in Indian Context," by **Ranjan K. Behera**, at Indian Institute of Technology, Kanpur, 2014, India, 10th December 2014.
- Deliver a seminar on "Dynamics and Control of Active Dual Bridge Converter for All Solar Micro-grid" by Ranjan K. Behera, at Department of computer science and electrical engineering, by **Ranjan K. Behera**, Tennessee Tech University, Cookeville, Tennessee, USA on 2nd July 2014.
- Deliver a seminar on "Control of Active Dual Bridge Converter for Micro-grid Application" by **Ranjan K. Behera**, at Department of computer science and electrical engineering, Tennessee Tech University, Cookeville, Tennessee, USA on 2nd July 2014.
- Deliver a seminar on "Modeling and Control of Efficient Solar Energy Converters" by **Ranjan K. Behera**, at Center for Energy Systems Research, Tennessee Tech University, Cookeville, Tennessee, USA on 21st May 2014.
- Invited speaker in TEQIP Sponsored Faculty Development Program on "Advances in Energy and Control Systems". Title of presentation is "Control of High Efficient Solar and Wind Power Converters," by **Ranjan K. Behera**, at Shri Vishnu Engineering College for Women, Bhimavaram Andhra Pradesh, India, 21st April 2014.
- Invited speaker in TEQIP Sponsored Faculty Development Program on "Recent Trends in Power Electronics Converters". Title of presentation is "Recent Advances in High Power Medium Voltage Converters and High Performance Drives," by **Ranjan K. Behera**, at Department of Electrical Engineering, Aligarh Muslim University, Aligarh, India, 05th April 2014.
- Invited as guest speaker in International seminar on "Electric/Hybrid Electric Vehicle(EV/HEV, entitled "Control of Electrical Drives for EV/HEV and motors for EV/HEV" by **Ranjan K. Behera**, at Raja Rajeswari College of Engineering, Bangalore on 19th February 2014.

Books Published:

- **Maheshkumar H. Kolekar**, G. Lloyds Raja and Somnath Sengupta, An introduction to wavelet based image processing and its applications in Recent Advances in Computer Vision and Image Processing: Methodologies and Applications, IGI Global publishers, USA (2013).

Workshop/Seminar/Conferences organized:

- Short-term Course on "Nuclear Power at your service - An insight" (Coordinator: **Dr Ranjan K. Behera**).

Awards & Honours

- **Ranjan Kumar Behera**, Senior Member IEEE.
- **Ranjan Kumar Behera**, Selected as the featured engineer of the globe by EE Web: Link-http://www.eeweb.com/spotlight/interview-with-dr.-ranjan-kumar-behera

Fellowships

- **Ranjan Kumar Behera**, Bhaskara Advanced Solar Energy (BASE) Fellowship by the Department of Science and Technology, Govt. of India, and the Indo-U.S. Science and Technology Forum (IUSSTF). For doing advanced research on Grid Interaction including Smart Grids and System Development and Integration at Tennessee Technological University, Tennessee, USA.

3.3 Mechanical Engineering

3.3.1 Faculty List

Name	Highest Degree	Research Areas
Associate Professors		
Mayank Tiwari (Co-ordinator)	**Ph.D.**	Tribology, Gear, bearing wear and dynamics, Vacuum Tribology, Machine Dynamics, Rotor dynamics, Vibrations, Acoustics
Assistant Professors		
Akhilendra Singh	**Ph.D.**	Computational Mechanics, Fracture Mechanics, FEM, XFEM, Meshfree Methods, Thermal Engineering
Anindya Sundar Das	**Ph.D.**	Rotor Dynamics, Vibration, Vibration Control, Dynamics
Atul Thakur	**Ph.D.**	Robotics and Mechatronics
Karali Patra	**Ph.D.**	Smart Materials, Micromachining, Robotics and Mechatronics
Manabendra Pathak	**Ph.D.**	Computational Fluid Dynamics, Heat Transfer, Renewable Energy
Mohd. Kaleem Khan	**Ph.D.**	Two-phase Fluid Flow and Heat Transfer through Mini and Micro Channels, Nuclear Reactor Safety, Non-Newtonian Visco-plastic Flows, Solar Energy, Clad Tube Ballooning and Bursting in Postulated LOCA Conditions
Probir Saha	**Ph.D.**	Micro machining
Rishi Raj	**Ph.D.**	Phase Change Heat Transfer, Micro-/Nano-Scale Transport, Energy, Surface Science, Microgravity Science
Somnath Roy	**Ph.D.**	CFD, Aerodynamics, High Performance Computation, Turbulence

Somnath Sarangi	**Ph.D.**	Continuum Mechanics, Mechatronics
Subrata Kumar	**Ph.D.**	Heat Transfer, Laser Material Processing, CFD
Sudhanshu Sekhar Panda	**Ph.D.**	Tool Condition Monitoring, Bio Machining, Soft Computing, Design of Experiments, Statistical Modeling, Sensors Calibration

3.3.2 Academic Programs

- B.Tech. in Mechanical Engineering.
- M.Tech. in Mechanical Engineering.
- M.Tech. in Mechatronics (jointly with Electrical Engineering Department).
- Ph.D. Program.

3.3.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Manabendra Pathak,** A self-adaptive electronic cooling system by enhanced pool boiling (under review) (DST-SERB, **Rs.48.00 Lakhs**).
- **PI: Dr. Manabendra Pathak,** A self-adaptive electronic cooling system by enhanced pool boiling (under review) (DST-SERB, **Rs.48.00 Lakhs**).
- **PI: Dr. UTEP: Vinod Kumar,** Clean, Efficient, Economical and Environmentally Sustainable Energy Solution for Rural India (under review) ((Obama-Singh 21st Century Knowledge Initiative (OSI), **Rs.101.00 Lakhs**).
- **PI: Dr. UTEP: Vinod Kumar,** Clean, Efficient, Economical and Environmentally Sustainable Energy Solution for Rural India (under review) (Obama-Singh 21st Century Knowledge Initiative (OSI) Grant, **Rs.101.00 Lakhs**).
- **PI: Dr. S S Panda,** Comprehensive Integrated Dignostic study of Clusters in State Bihar, India, (Department of Industries, Bihar 2014-2015, **Rs.12.96 Lakhs**).

- **PI: Dr. Dr. Probir Saha,** Development of a tool wear monitoring and compensation method for reverse micro-EDM and microEDM-drilling process (DST India, **Rs.20.75 Lakhs**).
- **PI: Dr. S S Panda,** Development of Robust Monitoring System for Drilling of Human Bone (DST, **Rs.13.00 Lakhs**).
- **PI: Dr. D. Rishi Raj,** Enhancement of Boiling Heat Transfer via the suppression of coalescence in Microgravity (ISRO, **Rs.26.68 Lakhs**).
- **PI: Dr. Dr. Rishi Raj,** Flow Boiling Heat Transfer in Scalable Nanostructured Microchannels for High Heat Flux Applications (DST-SERB, **Rs.48.27 Lakhs**).
- **PI: Dr. Md. Kaleem Khan,** Influence of Hydrogen Content on Burst Characteristics of Zircaloy-4 Cladding Tube (BRNS, **Rs.26.65 Lakhs**).
- **PI: Dr. Mohd. Kaleem Khan,** Influence of Hydrogen Content on Burst Characteristics of Zircaloy-4 Cladding Tube (BRNS, **Rs.26.65 Lakhs**).
- **PI: Dr. M Pathak, M K Khan, K.C Ray,** Embedded microchannel cooling system for IC silicon chip (under review) (DEITy, **Rs.172.00 Lakhs**).
- **PI: Dr. S S Panda,** Monitoring of heat flow phenomenon of a low freezing material during continuous casting (BRNS, **Rs.18.36 Lakhs**).
- **PI: Dr. Dr. Atul Thakur,** Robust Motion Planning of Bio-Inspired Amphibious Robots (Department of Science and Technology, Government of India, **Rs.17.89 Lakhs**).

Consultancy Projects:

- Performance analysis and improvement of a 2 Tonne, 7 kW ammonia based adsorption refrigerator (New Leaf Dynamic Technologies (P). Ltd., **Rs.1.51 Lakhs**); PI: **Dr. Rishi Raj**, Co-PI: **Dr. Ajay D. Thakur** (Department of Physics).
- Contact Angle Goniometer, X- Ray Diffractometer (XRD) and Field Emission Scanning Electron Microscope with EDAX for nanostructured surfaces (NIT Agartala, **Rs.0.50 Lakhs**); PI: **Dr. Rishi Raj**, Co-PI: **Dr. Ajay D. Thakur** (Department of Physics).
- Study of wear characteristics of hot roll cooling water jet nozzles (LECHLER (INDIA) PVT. LTD., THANE, **Rs.5.00 Lakhs**).

Papers Published in Journals:

- Y. K. Prajapati, **M. Pathak** and **M.K. Khan,** A Comparative Ctudy of Flow Boiling Heat Transfer in Three Different Configurations of Microchannels, International Journal of Heat and Mass Transfer, Vol.85, pp.711-722 (2015).

- Y. K. Prajapati, **M. Pathak** and **M.K. Khan,** A comparative study of flow boiling heat transfer in three different configurations of microchannels, International Journal of Heat and Mass Transfer, Vol.85, pp.711-722 (2015).
- **S S Panda** and R K Pandey, A Feasibility investigation for Modeling and Optimization of Temperature in Bone Drilling using Fuzzy logic and Taguchi Optimization Methodology, Journal of Engineering in Medicine), Sage Proc IMechE Part H.
- Chowdhury, S., **Thakur, A.,** Švec, P., Wang, C., Losert, W. and Gupta, S., K., , Automated Manipulation of Biological Cells Using Gripper Formations Controlled By Optical Tweezers, IEEE Transactions on Automation Science and Engineering, 11(2), 338-347 (2014).
- C K Nirala., **Saha Probir,** 'Feasibility of using modified VPP approach in prediction of real time volume estimator (VRT) in micro-EDM-drilling', , International journal of Precision Technology,, (4) 162-175 (2014).
- **M.K. Khan, M. Pathak,** Ballooning deformation of Zircaloy-4 fuel sheath, ASME Journal of Pressure Vessel Technology, Vol.136, pp. 031206 (2014).
- **M.K. Khan and M. Pathak,** Ballooning Deformation of Zircaloy-4 fuel Sheath, ASME Journal of Pressure Vessel Technology, Vol.136, pp. 031206 (2014).
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan,** Computational Fluid Dynamics Modeling of Two-phase Flow in an Adiabatic Capillary Tube, ASME Journal of Thermal Science and Engineering Applications, Vol. 7, pp.011006-1- (2015).
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan,** Computational fluid dynamics modeling of two-phase flow in an adiabatic capillary tube, , ASME Journal of Thermal Science and Engineering Applications, Vol. 7, pp.011006-1- (2015).
- **S S Panda** & R K Pandey, Drilling of bone: A comprehensive review, Journal of clinical orthopaedics and trauma 4 (1), 15-30,, (2013).
- Humplik, T., **Raj, R.,** Maroo, S. C., Laoui, T. and Wang, E. N. , Effect of Hydrophilic Defects on Water Transport in MFI Zeolites, Langmuir, 30(22) (2014).
- **S S Panda** & R K Pandey, Evaluation of Delamination in Drilling of Bone, Medical Engineering & Physics, doi:10.1016/j.medengphy.2015.04.008, (2015).
- **Raj, R.,** Adera, S., Enright, R. and Wang, E. N. , High Resolution Liquid Patterns via Three-Dimensional Droplet Shape Control, Nature Communications, 5-4975 (2014).
- S.Suman, **M.K. Khan, M.Pathak,** R.N. Singh, J.K. Chakravartty, Hydrogen in Zircaloy: Mechanism and its Impacts, International Journal of Hydrogen Energy, Vol.40, pp.5976-5994 (2015).

- S.Suman, **M.K. Khan, M.Pathak,** R.N. Singh and J.K. Chakravartty, Hydrogen in Zircaloy: Mechanism and its Impacts, International Journal of Hydrogen Energy, (in press) (2015).
- **Thakur, A.,** Chowdhury, S., Švec, P., Wang, C., Losert, W. and Gupta, S., K., , Indirect pushing based automated micromanipulation of biological cells using optical tweezers, International Journal of Robotics Research, 33(8):1098-1111 (2014).
- **S S Panda** & R K Pandey, Modeling of temperature in orthopaedic drilling using fuzzy logic, Applied Mechanics and Materials 249, 1313-1318, (2013).
- **S S Panda** & R K Pandey, Modelling and optimization of temperature in orthopaedic drilling: An in vitro study. , Acta Bioeng Biomech, 16, 107-116, (2014).
- **S S Panda** & R K Pandey, Multi-Performance Optimization of Bone Drilling Using Taguchi Method Based on Membership Function, Measurement, Elsevier, 59, 9-13, (2015).
- Sachin Kumar, I.V. Singh, B.K. Mishra, **Akhilendra Singh,** New enrichments in XFEM to model dynamic crack response of 2-D elastic solids, International Journal of Impact Engineering, doi:10.1016/j.ijimpe (2015).
- **S S Panda** & R K Pandey, Optimization of bone drilling parameters using grey-based fuzzy algorithm, Measurement 47, 386-392, Elsevier, (2014).
- **S S Panda** & R K Pandey, Optimization of bone drilling using Taguchi methodology coupled with fuzzy based desirability function approach, Journal of Intelligent Manufacturing, 1-9, Springer, (2013).
- **S S Panda** & R K Pandey, Optimization of multiple quality characteristics in bone drilling using grey relational analysis, Journal of Orthopaedics, 12(1), 39–45, Elsevier, (2015).
- **S S Panda** & R K Pandey, Optimization of Orthopaedic Drilling: A Taguchi Approach, Int J. Theor Appl Res Mech Eng 1 (1), 9-12, (2012).
- **Raj, R.,** Adera, S., Enright, R. and Wang, E. N. , Polygonal Droplets on Microstructured Surfaces, ASME Journal of Heat Transfer, 136(8) (2014).
- Himanshu Pathak, **Akhilendra Singh,** I. V. Singh, Simulation of 3-D thermo-elastic fracture problems using coupled FE-EFG approach, Procedia Materials Science, 6, 1927-1935 (2014).
- Švec, P., **Thakur, A.,** Raboin, E., Shah, B., C. and Gupta, S., K., , Target Following with Motion Prediction for Unmanned Surface Vehicle Operating in Cluttered Environments. , Autonomous Robots, 36(4), 383-405 (2014).

- M. A. Hassan, **M. Pathak** and **M. K. Khan,** Thermorheological Characterization of Elastoviscoplastic Carbopol Ultrez 20 Gel, ASME Journal of Engineering Materials and Technology, Vol. 137 pp.031002-1 (2015).
- M. A. Hassan, **M. Pathak** and **M. K. Khan,** Thermorheological Characterization of Elastoviscoplastic Carbopol Ultrez 20 Gel, ASME Journal of Engineering Materials and Technology, Vol. 137 pp.031002-1 (2015).

Papers Presented in Conferences:

- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** Experimental and numerical analysis of microchannel heat sink, International Mechanical Engineering Congress, NIT Tiruchirappalli, India (2014)
- Himanshu Pathak, **Akhilendra Singh,** I. V. Singh 3-D Interfacial Crack Growth by XFEM, ICMMSA, MNIT Allahabad, Allahabad (2014)
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** A Comparative study of subcooled flow boiling in uniform, diverging cross-section and segmented finned microchannels, ASME 2014 12th International Conference on Nanochannels, Microchannels and Minichannels (ICNMM), Chicago, Illinois, USA (2014)
- Y.K. Prajapati, **M. Pathak** and **M.K. Khan** A Comparative Study of Subcooled Flow Boiling in Uniform, Diverging Cross-section and Segmented Finned Microchannels, ASME 2014 12th International Conference on Nanochannels, Microchannels and Minichannels, Chicago, Illinois, USA (2014)
- **S S Panda** & Pintu Kumar A review on micro-extruded microstructure from ultra-fine grained and as cast. , AIMTDR, (2014)
- Nirala, C.K., **Saha, Probir.,** "Comparison of process mechanics in μEDM-drilling and RμEDM based on online monitoring of discharge gap condition" , AIMTDR, IITG (2014)
- Ahmed S., Shubhrant A., Deep A., **Saha Probir**. "Development and analysis of butt and lap welds in micro friction stir welding (μFSW)" , AIMTDR, IITG (2014)
- Shriyam, S., Mishra, A., Nayak, D. and **Thakur, A.,** Design, fabrication and gait planning of alligator-inspired robot, International Conference on Advances in Mechanical Sciences, Hyderabad, AP, India, (2014)
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** Experimental and Numerical Analysis of Microchannel Heat Sink, International Mechanical Engineering Congress, NIT Tiruchirappalli, India (2014)

- **S S Panda** & R K Pandey Genetic Algorithm Based Prediction of an Optimum Parametric Combination for Minimum Thrust Force in Bone Drilling, Advances in Intelligent Systems and Computing, 265 AISC, 103-112, (2014)
- **S S Panda** & R K Pandey Modeling and Optimization of Temperature in Orthopaedic Drilling using Taguchi and Response Surface methodology, Bioprocessing INDIA 2014, (2014)
- Lu, Z., Narayanan, S., Hanks, D. F., **Raj, R.,** Xiao, R., Antao, D. S. and Wang, E. N. Modeling of Nanoporous Membranes for High Flux Thin Film Evaporation, The 15th International Heat Transfer Conference, Kyoto, Japan (2014)
- Hanks, D. F., Lu, Z., Bagnall, K. R., Narayanan, S., **Raj, R.,** Xiao, R. and Wang, E. N. Nanoporous Evaporative Device for Advanced Electronics Thermal Management, The Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITHERM), Lake Buena Vista (Orlando), FL USA (2014)
- **S S Panda** & R K Pandey Optimization of Bone Drilling Process with Multiple Performance Characteristics Using Desirability Analysis, APCBEE Procedia 9, 48-53, 2014, (2014)
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** Performance Analysis of Uniform and Expanding Cross-section Microchannels in Single Phase and Flow boiling Heat Transfer, 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, IIT Kanpur, Kanpur, India (2014)
- Y.K. Prajapati, **M. Pathak** and **M.K. Khan** Performance Analysis of Uniform and Expanding Cross-section Microchannels in Single Phase and Flow boiling Heat Transfer, 5th International and 41st National Conference on Fluid Mechanics and Fluid Power, IIT Kanpur, India (2014)
- Raza, Md. Qaisar and **Raj, R.** Pool Boiling Heat Transfer with Aqueous Surfactant Solutions: Importance of Time Scales, IUTAM Symposium on Multiphase Flows with Phase Change: Challenges and Opportunities, Hyderabad, India (2014)
- **S S Panda** & R K Pandey Prediction of an Optimum Parametric Combination for Minimum Thrust Force in Bone Drilling: A Simulated Annealing Approach, Smart Innovation, Systems and Technologies, 27, 1, 705-713, (2014)
- Antao, D. S., Adera, S., **Raj, R. and** Wang, E. N. Probing the Liquid-Vapor Interface during Phase Change Heat Transfer, Gordon Research Conference on Micro and Nanoscale Phase Chnage Heat Transfe, Galveston, Texas, USA (2015)
- Humplik, T., **Raj, R.,** Maroo, S. C., Laoui, T. and Wang, E. N. Selective Water Transport Across Uniform Sub-Nanometer Pores in Microfabricated Membranes, Hilton Head

Workshop 2014, A Solid-State Sensors, Actuators and Microsystems Workshop, Sonesta Resort, SC 29928, USA (2014)

- **Akhilendra Singh,** Himanshu Pathak I. V. Singh Simulation Crack Interaction Study under Thermo-Mechanical Loading by XFEM, MPMS, ENSTA PARIS TECH, PARIS (2014)
- Priyam Agarwal, Ankit Chakraborty, **Akhilendra Singh** Simulation of bi-material plate by XFEM under dynamic load, ICMPC, Hyderabad (2015)
- Chattopadhyay, A., **Raj, R.** and **Thakur, A**. Spine Based Modeling of Droplets on Microstructured Sources, 5th International and 41st National Conference of Fluid Mechanics and Fluid Power, Indian Institute of Technology Kanpur (2014)
- Chattopadhyay, A., **Thakur, A. and Raj, R.,** Spline Based Two-Dimensional Modeling of Droplets on Rough and Heterogeneous Surfaces, International and 41st National Conference on Fluid Mechanics and Fluid Power, Kanpur, India (2014)
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** Transient Analysis of Microchannel Heat Sink during Single Phase and Flow Boiling Conditions, 7th International Meeting on Advances in Thermofluids, Kuala Lumpur, Malaysia (2014)
- Y. K. Prajapati, **M. Pathak** and **M.K. Khan** Transient Analysis of Microchannel Heat Sink during Single Phase and Flow Boiling Conditions, 7th International Meeting on Advances in Thermofluids, , Kuala Lumpur, Malaysia, (2014)
- **Raj, R.,** Adera, S., Enright, R. and Wang, E. N. Wettability on Micro and Nanoscale Surfaces for Improved Understanding of Phase Change Heat Transfer, Gordon Research Conference on Micro and Nanoscale Phase Chnage Heat Transfe, Galveston, Texas, USA (2015)

3.3.4 Other Activities

Member - Professional Bodies:

- Akhilendra Singh (2011) Indian Society of Theoretical and Applied Mechanics.
- Akhilendra Singh (2011) Society of Automotive Engineers.
- Atul Thakur (2011) IEEE.
- Atul Thakur (2008) ASME.
- Manabendra Pathak (2014) Indian Society for Heat and Mass Transfer (ISHMT).
- Manabendra Pathak (2010) American Society of Mechanical Engineers (ASME).
- Mayank Tiwari (2005) Society of Experimental Mechanics.
- Mayank Tiwari (2007) Tribology Society of India.
- Mohd. Kaleem Khan (2011) American Society of MechanicalEngineers (ASME).
- Mohd. Kaleem Khan (2010) American Society of Heating, refrigerating and Air Conditioning Engineers, Inc. (ASHRAE).
- Somnath Roy (2013) ISHMT.

Member - Editorial Board:

- Akhilendra Singh (2013) Assciate Editor - Advances in Mechanical Engineering (Special Issue on Recent Advances in Computational Mechanics).
- Mayank Tiwari (2014) Associate Technical Editor - Experimental Techniques.
- Somnath Roy (2014) Member - Recent Trends in Fluid Mechanics.
- Sudhansu Sekhar Panda (2014) Member – MEIJ.
- Sudhansu Sekhar Panda (2013) member - Journal of Mechanical and Industrial Engineering Research.
- Sudhansu Sekhar Panda (2013) Editor – IJAQM.

Awards & Honours:

- Mohd. Kaleem Khan (2014) DST-ITS full travel support for attending ASHRAE 2014 Winter Conference.

Visits Abroad by Faculty Members:

- Akhilendra Singh - To present paper (ENSTA PARIS TECH University Paris) October 6-8,2014.
- Rishi Raj - 15th International Heat Transfer Conference (Kyoto, Japan) August 10-15, 2014.
- Rishi Raj - Gordon Research Conference (Galveston Texas) January 10-16, 2015.

- Manabendra Pathak - To attend ASME 12th International Conference on Nanochannels, Microchannels and Minichannels (Chicag,. USA) August 2-8, 2014.

Invited Lectures by Faculty Members:

- Physics-Aware Planning of Robot Motion: Unmanned Surface Vehicles to Bio-Inspired Robots by Atul Thakur (11th National Conference on Industrial Problems on Machines and Mechanisms (IPRoMM-2014)).
- Dynamics-aware online motion planning for mobile robotic systems operating in stochastic environment by Atul Thakur (System and Controls Group, IIT Bombay).
- Design Clinics for Rice Mill Cluster by Probir Saha (Nalanda, Bihar).
- Planning a Career in Research by RISHI RAJ (IIT Guwahati).

3.4 Civil and Environmental Engineering

3.4.1 Faculty List

Name	Highest Degree	Research Areas
Professors		
Swapan Majumdar	**Ph.D.**	Structural Engineering
Assistant Professors		
Pradipta Chakrabortty (Coordinator)	**Ph.D.**	Soil Dynamics and Geotechnical Earthquake Engineering, Soil Heterogeneity, Finite Element Analysis in Geotechnical Engineering, Ground Improvement, Probabilistic Methods in Engineering
Subrata Hait	**Ph.D.**	Water and Wastewater Treatment, Emerging Contaminants in Environmental Media, Solid and Hazardous Waste Management, Organic Waste Management by Composting and Vermicomposting, Conventional and Ecological Sanitation
Syed K. K. Hussaini	**Ph.D.**	Rail Track Geotechnology Cyclic Behavior of Granular Media under High-Frequency Cyclic Loading The Role of Geosynthetics in Improving the Rail Track Performance Ground Improvement
Avik Samanta	**Ph.D.**	Structural Engineering, Structural Dynamics, Performance Based Earthquake Engineering
Visiting Assistant Professor		
Om Prakash	**Ph.D.**	Water Resource Systems Engineering; Hydrological and Hydro-Geological Modelling; Numerical Modelling of Groundwater Flow

and Solute Transport; Water Resources Management; Optimization based solutions for Groundwater and Water Resource Management Problems

3.4.2 Academic Programs

- B.Tech. in Civil and Infrastructure Engineering.
- M.Tech. in Civil and Infrastructure Engineering.
- Ph.D. Program.

3.4.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Subrata Hait,** Development of Gravity-based Household Filter for Simultaneous Removal of Arsenic & Iron Contamination of Groundwater in Patna District, Bihar, India (Shastri Indo- Canadian Institute, **Rs.6.00 Lakhs**).
- **PI: Dr. Atul Thakur, Co-PI: Dr. Subrata Hait,** Development of Robot for Municipal Solid Waste Sorting (Institute; Centre for Energy and Environment, **Rs.17.50 Lakhs**).
- **PI: Dr. Pradipta Chakrabortty,** Microzonation of Jaipur city based on shear wave velocity (SERB (DST), **Rs.16.02 Lakhs**).
- **PI: Dr. Avik Samanta,** Seismic Response, Damage and Vulnerability of Structures in Patna for Future Earthquakes (SERB, **Rs.21.39 Lakhs**).

Consultancy Projects:

- **PI: Dr. Subrata Hait,** Performance Evaluation of Saidpur STP, Patna (IIT Madras, **Rs.0.20 Lakhs**)
- **PI: Dr. Avik Samanta and Dr. Subrata Hait,** Quality Assurance of Construction Materials of Agricultural College, Kishanganj, Bihar (Bihar State Building Construction Corporation Ltd., Govt. of Bihar, **Rs.4.55 Lakhs**)

Papers Published in Journals:

- **Syed K. K. Hussaini,** Buddhima Indraratna and Jayan S. Vinod, Performance assessment of geogrid-reinforced railroad ballast during cyclic loading, Transportation Geotechnics, Volume 2, 99-107 (2015).

- V. Ashok and **S. Hait,** Remediation of nitrate-contaminated water by solid-phase denitrification process-a review (DOI: 10.1007/s11356-015-4334-9), Environmental Science and Pollution Research, Vol. 22, No. 11, pp. 8075-8093, (2015).

Papers Presented in Conferences:

- Vishal Puri, **Pradipta Chakrabortty and Swapan Majumdar,** A Review of Low Cost Housing Technologies in India, Structural Engineering Convention 2014, IIT Delhi (2014)
- **S. Hait** and V. Tare, Performance evaluation of high-growth membrane bioreactor for resource recovery using simulated sewage, IWA Specialized International Conference on 'Global Challenges: Sustainable Wastewater Treatment and Resource Recovery', Kathmandu, Nepal (2014)
- **Pradipta Chakrabortty** and Radu Popescu, Response Surface Model for Settlement in Frame Structure Resting on Isolated Footing, 15th Symposium on Earthquake Engineering, DEQ, IIT Roorkee (2014)
- **A. Samanta** and T.-C. Pan, Seismic Response Studies of Structures in Singapore for Disaster Mitigation in Future Earthquakes, 15th Symposium on Earthquake Engineering, IIT Roorkee (2014)
- **S. Hait,** S. Kapoor, V. Tare and P. Bose, Techno-economic assessment of treatment options for disinfection of secondary sewage effluent, IWA Specialized International Conference on 'Global Challenges: Sustainable Wastewater Treatment and Resource Recovery', Kathmandu, Nepal (2014)

3.4.4 Other Activities

Fellow - Professional Bodies:

- Pradipta Chakrabortty (2009) Memorial University, Newfoundland, St. Johns Canada.

Member - Professional Bodies:

- Subrata Hait (2014) Member, American Society of Civil Engineers (ASCE).
- Pradipta Chakrabortty (2003) Indian Society of Earthquake Technology (ISET).
- Subrata Hait (2012), Associate Member, Institution of Engineers (India).
- Subrata Hait (2009), Member, World Toilet Organization, Singapore.
- Subrata Hait (2005), Member, Eco-Ethics International Union, Germany.
- Syed Khaja Karimullah Hussaini (2013) Associate Member, American Society of Civil Engineers (ASCE).

Member - Editorial Board

- Subrata Hait (2014) Article Editor - SAGE Open.

Visits Abroad by Faculty Members:

- Subrata Hait - To present papers and chairing a technical session in the IWA Specialized International Conference (Kathmandu, Nepal), October 26 – 30, 2014.

Invited Lectures by Faculty Members:

- Sustainable Sanitation: Challenges and Opportunities by Subrata Hait (Magadh Mahila College, Patna, Bihar), September 16, 2014.
- Earthquake Resistant Design of Structure: Foundation by Pradipta Chakrabortty (Konark Cement, Patna).

3.5 Materials Science and Engineering

3.5.1 Faculty List

Name	Highest Degree	Research Areas
Professors		
Anil K. Bhowmick	**Ph.D.**	Polymer Science and Technology
Assistant Professors		
Anirban Chowdhury (Coordinator)	**Ph.D.**	Materials Chemistry - chemical synthesis - structural and spectroscopic characterisations - thin films & coatings - nanomaterials- sol gel - ceramics
Anup Kumar Keshri	**Ph.D.**	Carbon Nanotube Reinforced Ceramic Matrix and Metal Matrix Composites, Thermal Spraying, Tribology of Materials, Process-Structure-Property Relationship
Dinesh Kumar Kotnees	**Ph.D.**	Polymer Science and Technology with specialization in Adhesion, Blends, Composites, Fillers and Bulk/Surface properties of Polymers

3.5.2 Academic Programs

- M. Tech. in Materials Science & Engineering.
- Ph. D. Program.

3.5.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Dinesh K. Kotnees,** Development of Fiber filled EPDM Rubber Lining on Rocket Motor-One review over-Revised Proposal submitted to DRDL Hyderabad-Waiting for the decision (DRDL, Hyderabad, **Rs.0.00 Lakhs**).

- **PI: Dr. Dinesh K. Kotnees,** Improvement of low temperature performance and room temperature properties of elastomers-ON GOING (DENKA, JAPAN, **Rs.1600000.00 Lakhs**).
- **PI: Dr. Anup Kumar Keshri,** Plasm sprayed Rare Earth Oxide Hydrophobic Coating (SERB-DST, **Rs.26.74 Lakhs**).
- **PI: Dr. Anup Kumar Keshri,** Plasma Sprayed CNT reinforced MoS2 coating for Anti-friction Applications (NRB (Conditionally Accepted), **Rs.21.00 Lakhs**).
- **PI: Dr. Anup Kumar Keshri,** Thermal Barrier Coating for Turbine Applications (Centre for Strategic Materials, IIT Patna, **Rs.25.00 Lakhs**).

Consultancy Projects:

- Thermal Barrier Coating for High Temperature Applications (BHEL Corporate R&D (in Consideration), Rs.12.00 Lakhs

Papers Published in Journals:

- Shib Shankar Banerjee, **K. Dinesh Kumar and A.K. Bhowmick,** Distinct melt viscoelastic properties of novel nanostructured and microstructured thermoplastic elastomeric blends from polyamide 6 and fluoroelastomer, Macromolecular Materials and Engineering, V:300, PP:283-290 (2015).
- **Anirban Chowdhury,** Pavan Kumar Bijalwan, Ranjan Kumar Sahu, Investigations on the Role of Alkali to Obtain Modulated Defect Concentrations for Cu2O Thin Films, Applied Surface Science, 289, 430-436 (2014).
- Debrupa Lahiri, Jeffrey Karpa, **Anup K. Keshri,** Cheng Zhang, George S. Dulikravich, Laszlo J. Kecskes, Arvind Agarwal, Scratch induced deformation behavior of hafnium based bulk metallic glass at multiple load scales, Journal of Non-Crystalline Solids, 410, (118-126), (2015).
- **Anirban Chowdhury,** Ramasamy Iyyappan, Dipanwita Majumdar and Achintya Singha, Structural and spectroscopic characterisations of the surface oxide scales and inclusions present on edge-burst hot-rolled steel coils, Materials Chemistry and Physics, 148, 276-283 (2014).
- Debadutta Prusty, Abhishek Pathak, Apparao Chintha, Bratindranath Mukherjee and **Anirban Chowdhury,** Structural Investigations on the Compositional Anomalies in

Lanthanum Zirconate System Synthesized by Coprecipitation Method, Journal of the American Ceramic Society, 97 (3), 718-724 (2014).

- Debadutta Prusty, Abhishek Pathak, Manabendra Mukherjee, Bratindranath Mukherjee and **Anirban Chowdhury,** TEM and XPS Studies on the Faceted Nanocrystals of Ce0.8Zr0.2O2, Materials Characterization, 100, 31-35 (2015).

Papers Presented in Conferences:

- Banerjee, S. S., Kumar, K. D. and **Bhowmick, A. K.,** Distinct melt rheological behaviour of polyamide 6/fluoroelastomer thermoplastic elastomeric blends with particular reference to micro- and nano-structures, International Conference on Polymers and Allied Materials (ICPAM 2014), Patna, India (2014).
- **Anirban Chowdhury,** Debadutta Prusty, Abhishek Pathak, Appa Rao Chintha and Bratindranath Mukherjee, Studies on the Compositional Anomalies in Lanthanum Zirconate System Prepared by Co-Precipitation, CIMTEC 2014 (13th International Ceramics Congress), Montecatini Terme, Tuscany, Italy (2014).

3.5.4 Other Activities

Member - Professional Bodies:

- Anup Kumar Keshri (2014) Indian Institute of Metals (IIM).
- Anup Kumar Keshri (2014) The Minerals Metals and Materials Society TMS Member.

Visits Abroad by Faculty Members

- Anirban Chowdhury - for attending conference - CIMTEC 2014 (13th International Ceramics Congress) (Italy) Jun. 8-13, 2014.
- Anup Kumar Keshri - International Conference on Composite Materials (Dubai, UAE) 4 days.
- Dinesh Kumar Kotnees - Workshop-International Forum for Materials Testing (Ulm, Germany) 13th-16th October 2014.

Invited Lectures by Faculty Members

- Workshop-International Forum for Materials Testing by Dinesh Kumar Kotnees (Ulm, Germany).

3.6 Chemical and Biochemical Engineering

3.6.1 Faculty List

Name	Highest Degree	Research Areas
Associate Professors		
Debashis Chakraborty	**Ph.D.**	Synthetic organometallic chemistry; homogeneous catalysis
Assistant Professors		
S. K. Samanta (Coordinator)	**Ph.D.**	Microwave Assisted Material Processing, Chemical Reaction Engineering
Prolay Das	**Ph.D.**	DNA self assembly for production of 3 dimensional functional Nanostructures, Clustered DNA damage and DNA repair mechanism in Nucleosome core particles

3.5.2 Academic Programs

- Ph. D. Program.

4. School of Basic Sciences

4.1 Mathematics

4.1.1 Faculty List

Assistant Professors

Name	Highest Degree	Research Areas
Ashish Kumar Upadhyay	**Ph.D.**	Topology (Combinatorial, geometric and algebraic)
Debashree Guha Adhya	**Ph.D.**	Fuzzy logic and its application
Nutan Kumar Tomar	**Ph.D.**	Mathematical Control Theory, Nonlinear Functional Analysis, Optimal Control
Om Prakash	**Ph.D.**	Rings & Modules, Associated Prime Rings
Prashant Kumar Srivastava	**Ph.D.**	Mathematical Modeling in Ecology and Epidemiology, Applications of Differential Equations in Biology, Stability and Bifurcation, Mathematical Modeling of HIV dynamics :in vivo.
Sudhan Majhi (Coordinator)	**Ph.D.**	Wireless communications and signal processing, estimation and detection, time and frequency domain signal analysis, blind signal parameters estimation, blind signal classification, blind wireless receiver design, estimation includes carrier frequency, symbol rate, symbol timing offset, carrier frequency offset, blind OFDM signal parameter estimation and synchronization, cooperative communications, MIMO, OFDM, cognitive radio and UWB systems, implementation of a universal blind receiver estimation algorithm on National Instrument (NI) hardware, experiment and measurement
Yogesh Mani Tripathi	**Ph.D.**	Statistical Decision Theory, Statistical Inference

4.1.2 Academic Programs

- M. Tech. in Mathematics and Computing (jointly with the Department of Computer Science and Engineering).
- Ph.D. Program.

4.1.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Ashish K Upadhyay,** D-covered triangulations and Semi-equivelar maps on surfaces (SERB, **Rs.4.90 Lakhs**).
- **PI: Dr. Dr. Yogesh Mani Tripathi,** Estimation Under Censored Data (DST, **Rs.12.48 Lakhs**).

Papers Published in Journals:

- Dipendu Maity and **Ashish K Upadhyay,** A note on edge-disjoint Hamiltonian cycles in polyhedral maps, Electronic J. Graph Th. App. , Vol 2 No 2 160-165 (2014).
- **S. Majhi** and T. S. Ho, Blind Symbol Rate Estimation and Testbed Implementation for Linearly Modulated Signals, IEEE Transactions on Vehicular Technology, (2014).
- **Ashish K Upadhyay,** Contractible Hamiltonian Cycles in Triangulated Surfaces, Elemente der Mathematik, 69(1) 23-29 (2014).
- Sheela Suthar and **Om Prakash,** Covering of Line Graph of Zero Divisor Graph over Ring Zn, British J. Math. Comp. Sci. , 5(6), 728-734 (2015).
- M. K. Rastogi and **Y. M. Tripathi,** Estimation for an inverted exponentiated Rayleigh distribution under Type II progressive censoring, Journal of Applied Statistics, Vol. 41, 2375-2405 (2014).
- **Y.M. Tripathi,** Somesh Kumar & C. Petropoulos, Estimation for the parameters of an exponential distribution under constrained location, Mathematical Methods of Statistics, Vol. 23, 66-79 (2014).
- **Om Prakash** and Kalpana, Generalised Strongly Prime Ideals in Near Rings, Int. J. Contemp. Math. Sci. , 9(13), 639 - 643 (2014).
- **Y. M. Tripathi,** Somesh Kumar & C. Petropoulos, Improved estimators for parameters of a Pareto distribution with a restricted scale, Statistical Methodology, V. 18, 1-13 (2014).

- Anuradha Yadav, **Prashant K. Srivastava** and Anuj Kumar, , Mathematical model for smoking: Effect of determination and education, International Journal of Biomathematics, Vol. 8, 1550001 (2015).
- S. Singh, **Yogesh Mani Tripathi** and S. J. Wu, On estimating parameters of a progressively censored lognormal distribution, Journal of Statistical Computation and Simulation, Vol. 85, 1071-1089 (2015).
- M. K. Rastogi and **Y. M. Tripathi,** Parameter and reliability estimation for an exponentiated half logistic distribution under progressive Type II censoring, Journal of Statistical Computation and Simulation, Vol. 84, 1711-1727 (2014).
- Anand K Tiwari and **Ashish K Upadhyay,** Semi equivelar maps on the torus and the Klein bottle, Math Slovaca, Accepted (2014).
- R. K. Mistri, R. K. Pandey and **Om Prakash,** Subsequence sums: Direct and inverse problems, J. Number Theory, 148, 235-256 (2015).
- R. K. Saini, Atul Sangal and **Om Prakash,** Unbalanced Transportation Problems in Fuzzy Environment using Centroid Ranking Technique, Int. J. Comp. Appl., 110(11), 27-33 (2015).
- Bapi Dutta**, Debashree Guha** and Radko Mesiar **(2014), "**A Model Based on Linguistic 2-tuples for Dealing with Heterogeneous Relationship among Attributes in Multi-expert Decision Making", IEEE Transactions on Fuzzy Systems, DOI:10.1109/ TFUZZ.2014.2379291.
- Debjani Chakraborty, **Debashree Guha**, and Bapi Dutta (2015), "Multi-objective Optimization under Fuzzy Rule Constraints", Soft Computing (Springer), DOI: 10.1007/s00500-015-1639-z.
- Satyajit Das, Bapi Dutta, **Debsahree Guha**, (2015), Weight computation of criteria in a decision making problem by knowledge measure with intuitionistic fuzzy set and interval-valued intuitionistic fuzzy set,Soft Computing (Springer) *in press*.

Papers Presented in Conferences

- Sheela Suthar and **Om Prakash** Adjacency Matrix and Energy of the Line Graph of Zero divisor Graph over Ring Zn, National Meet of Research Students in Mathematical Sciences (Sponsored by SERB, DST), University of Jammu, Jammu (2014)
- Diwaker Sharma and **Om Prakash** Approximation Properties of Beta-Baskakov Operators, Conference on Advance Techniques & Devices in Mathematics & Physical Sciences (An International Meet), SRM University, Delhi (2015)

- **Sudhan Majhi,** B Jeevan Prakash and Manish Kumar Blind Wireless Receiver Performance for Single Carrier Systems, IEEE International Conference on Communication and Signal Processing, Tamil Nadu, India (2015)
- M. K. Rastogi and **Yogesh Mani Tripathi** Estimating the parameters of a generalized Inverted Exponential Distribution under hybrid censoring, 8th International Conference of IMBIC on Mathematical Sciences for Advancement of Science and Technology, Kolkata (2014)
- **Y. M. Tripathi,** Somesh Kumar & C. Petropoulos Estimation of the lower bounded shape parameter of a Pareto distribution, Statistics & Society in the New Information Age: Challenges & Opportunities, Colombo Sri Lanka (2014)
- A Kumar, **P.K. Srivastava** Global Stability and Impact of Information on Infectious Disease Model with Optimal Treatment, International Conference on Mathematical Sciences-2014 (ICMS2014), Sathyabama University, Chennai, INDIA (2014)
- **Ashish K Upadhyay** Semi equivelar maps on surfaces, Annual conference of Indian Math Society, ISM Dhanbad (2014)
- **Om Prakash** and Sheela Suthar Some Properties of the Nilradical and Non-nilradical Graphs Associated to the Zero-divisor Graph of Finite Commutative Ring Zn, International Congress of Mathematicians (ICM)-2014, Seoul, Korea (2014)
- Sheela Suthar and **Om Prakash** The Zero divisor Graph of Z(p^n)(q^m). , International Conference on Advances in Mathematical Sciences- 2015, Khalsa College, Patiala (2015)

Book Chapters

- Bapi Dutta and Debashree Guha, Decision makers' opinion changing attitude-driven consensus model under linguistic environment and its application in dynamic MAGDM problems, "Granular Computing and Decision-Making: Interactive and Iterative Approaches", W. Pedrycz and S.M. Chen Eds., Springer –Verlag, Switzerland, 2015.

4.1.4 Other Activities

Member - Professional Bodies:

- Debashree Guha Adhya (2014) Indian Science Congress.
- Nutan Kumar Tomar (2011) IMS.
- Om Prakash (2007) The Indian Science Congress, Kolkata.
- Om Prakash (2010) The Calcutta Mathematical Society, Kolkata.

- Om Prakash (2012) The Indian Mathematical Society, Pune.
- Om Prakash (2007) The Indian Science Congress, Kolkata.
- Om Prakash (2010) The Calcutta Mathematical Society, Kolkata.
- Om Prakash (2012) The Indian Mathematical Society, Pune.
- Prashant Kumar Srivastava (2010) Indian Academy for Mathematical Modelling and Simulation.
- Prashant Kumar Srivastava (2013) Society for Mathematical Biology.
- Prashant Kumar Srivastava (2012) Indian Mathematical Society.
- Sudhan Majhi (2008) IEEE.

Member - Editorial Board

- Ashish Kumar Upadhyay (2013) Member - ISST Journal of Mathematics and Computing System

Visits Abroad by Faculty Members:

- Om Prakash - To participate and present the research paper in ICM-2014 (Seoul, Korea) August 13-21, 2014
- Yogesh Mani Tripathi - To deliver a talk in an international conference (Colombo) December 28-30

Invited Lectures by Faculty Members:

- Mathematical Modeling in Epidemiology: Tools, Analysis & Models by **Prashant Kumar Srivastava** (ICMC 2015, HIT Haldia, WB)
- Key note address on Mathematical Modeling of HIV Infection: in vivo by **Prashant Kumar Srivastava** (ICBSII-2015 at SSN University Chennai, TN)
- Mathematical Models of HIV and Immune System: in vivo by **Prashant Kumar Srivastava** (Mini Workshop on Biomathematics, at BHU Varanasi)
- Differential equation models by **Prashant Kumar Srivastava** (UG Training program at MANIT Bhopal)
- Semi-equivelar maps on surfaces, by **Ashish Kumar Upadhyay** (Annual conference of Indian Math Society, ISM Dhanbad)
- Chinese Remainder Theorem by **Om Prakash** (Banasthali Vidyapith, Rajasthan)
- Skew Polynomial Rings by **Om Prakash** (Banasthali Vidyapith, Rajasthan)
- Introduction to Rings and Modules by **Om Prakash** (University of Rajasthan)
- A Stochastic Differential Equation Model of HIV Primary Infection, by **Prashant Kumar Srivastava** (ICMCB-2015, IIT Kanpur, February 28-March 3, 2015).

- Paper in 8th International summer school on aggregation operators, by **Debashree Guha**, at University of Silesia, Katowice, Poland, July 7-10, 2015.

Awards & Honours

- Anuj Kumar (Research Scholar) won the IMS prize for 2014 in the area of Bio Mathematics at the 80th Annual Conference of the Indian Mathematical Society held at ISM Dhanbad".

4.2 Physics

4.2.1 Faculty List

Name	Highest Degree	Research Areas
Associate Professors		
Awalendra K. Thakur	**Ph.D.**	Renewable Energy Resources, Composite Nano Structures, Solid State Ionics, Dielectrics and Ferroelectrics, Super Capacitors, E.M.I. Shielding
Assistant Professors		
Ajay D. Thakur	**Ph.D.**	Advanced Electronic Materials, Sub-Microfabrication and Low Temperature Physics
Ayash Kanto Mukherjee	**Ph.D.**	Transport in Conjugated Polymer, Metal-Organic Semiconductor interface, Organic electronic Devices, Molecular Electronics
Manoranjan Kar	**Ph.D.**	Magnetic Nanomaterials and Oxide Materials
Naveen Kumar Nishchal	**Ph.D.**	Optics (Theory & Experiment, Optical Information Processing)
Utpal Roy (Coordinator)	**Ph.D.**	Bose-Einstein condensate, Nonlinear Optics, Quantum Optics
Vivek K. Malik	**Ph.D.**	Thin films, Superlattices, Magnetism
Raghavan K. E.	**Ph.D.**	Cold atom Physics, Non-linear optics, Quantum Optics
Venkata R. Dantham	**Ph.D.**	Bio-Photonics, Nanophotonics, Ultrasensitive optical biosensors, Photonic atoms

4.2.2 Academic Programs

- M. Tech in Nanoscience and Technology (jointly with Department of Chemistry).
- Ph. D Program.

4.2.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Utpal Roy,** Coherent control & interferometry using Bose-Einstein Condensate (SERB, Government of India, **Rs.15.24 Lakhs**).
- **PI: Dr. Manoranjan Kar,** FerrimagneticNanocrystalline arrays in ferroelectric or conducting polymer for soft magnetic application (CSIR, Government of India, **Rs.8.00 Lakhs**).
- **PI: Dr. Naveen Kumar Nishchal,** Identification of Biological Micro-organisms with Digital Holography (DRDO, **Rs.14.91 Lakhs**).
- **PI: Dr. Naveen Kumar Nishchal,** Study on Digital Holography based Information Security Schemes (CSIR New Delhi, **Rs.12.61 Lakhs**).
- **PI: Dr. Manoranjan Kar,** Tailoring magnetic properties of bimagnetic core/shell nanoparticles for soft magnetic applications (DAE, BRNS, Government of India, **Rs.17.00 Lakhs**).
- **PI: Dr. Manoranjan Kar,** Tuning of FM-AFM Exchange Interactions on Magnetic Nanocrystalline Materials for Soft Magnetic Applications (DST, Government of India, **Rs.23.00 Lakhs**).

Consultancy Projects:

- Performance analysis and improvement of a 2 Tonne, 7 kW ammonia based adsorption refrigerator (New Leaf Dynamic Technologies (P). Ltd., **Rs.1.51 Lakhs**); PI: **Dr. Rishi Raj**, Co-PI: **Dr. Ajay D. Thakur** (Department of Physics).

- Contact Angle Goniometer, X- Ray Diffractometer (XRD) and Field Emission Scanning Electron Microscope with EDAX for nanostructured surfaces (NIT Agartala, **Rs.0.50 Lakhs**); PI: **Dr. Rishi Raj**, Co-PI: **Dr. Ajay D. Thakur** (Department of Physics).

Papers Published in Journals:

- Ajay Nath and **Utpal Roy,** 1. Bose–Einstein condensate in a bichromatic optical lattice: an exact analytical model, Laser Physics Letters, 11, 115501 (2014).
- Ajay Nath and **Utpal Roy,** 2. A unified model for an external trap in a cigar-shaped Bose–Einstein condensate, Journal of Physics A: Mathematical and Theoretical, 47, 415301 (2014).
- S. Ghosh and **Utpal Roy,** 3. Enhanced quantum sensitivity in a vibrating diatomic molecule due to a rotational amendment, Phys. Rev. A, 90, 022113 (2014).
- S. K. Rajput and **N. K. Nishchal,** An optical encryption and authentication scheme using asymmetric keys, Journal of Optical Society of America A, 31, 1233-1238 (2014).
- Anup V. Sanchela, **Ajay D. Thakur,** C. V. Tomy, Anisotropic thermal conductivity and thermopower of the In2Te5 single crystals, AIP Conference Proceedings, 1591 (1392).
- I. Mehra and **N. K. Nishchal,** Asymmetric cryptosystem for securing multiple images using two beam interference phenomenon, Optics and Laser Technology, 60, 1-7 (2014).
- Avirup Das, **Awalendra K. Thakur** and K. Kumar, Conductivity Scaling and Near Constant Loss Behaviour in Ion Conducting Polymer Blend, Solid State Ionics, , 268, 185–190 (2014).
- I. Mehra, S. K. Rajput and **N. K. Nishchal,** Cryptanalysis of an image encryption scheme based on joint transform correlator with amplitude- and phase-truncation approach, Optics and Lasers in Engineering, 52, 167-173 (2014).
- T. Bera and **Ajay D. Thakur,** Determination of residual stress in MEMS cantilevers, AIP Conference Proceedings, 1591 (683).
- M. Panda, V. Srinivas and **A. K. Thakur,** Dielectric Spectroscopy of Polymer-metal Composites across the Percolation Threshold, Journal of Advanced Dielectrics, 4(4), 14500271 (2014).
- Anil K. Yadav, Anup V. Sanchela, **Ajay D. Thakur,** C.V. Tomy, Effect of nominal substitution of transition metals for excess Fe in Fe1+xSe superconductor, Solid State Communications, 202, 8 (2015).
- P. Kumar, C. Panda and **Manoranjan Kar,** Effect of Rhombohedral to Orthorhombic Transition on Magnetic and Dielectric Properties of La and Ti co-substituted BiFeO3, Smart Material and Structur, 24 (2015).
- P. Kumar and **M. Kar,** Effect of Structural Phase Transition on Magnetic and Optical Properties of co-substituted Bismuth Ferrite, Materials Science in Semiconductor Processing, 31, 262 (2015).

- P. Kumar and **M. Kar,** Effect of Structural Transition on Magnetic and Dielectric Properties of La and Mn co-substituted BiFeO3 Ceramics, Material Chemistry and Physics, 148,968 (204).
- P. Kumar and **M. Kar,** Effect of Structural Transition on Magnetic and Optical Properties of Ca and Ti co-substituted BiFeO3 Ceramics, Journal of Alloys Compound, 584, 566 (2014).
- P. Kour, P. Kumar, S. K. Sinha and **M. Kar,** Electrical Properties of Calcium Modified PZT (52/48) Ceramics, . , Solid State Communications, 190,33 (2014).
- I. Mehra, K. Singh, A. K. Agarwal, U. Gopinathan and **N. K. Nishchal,** Encrypting digital hologram of three-dimensional object using diffractive imaging, Journal of Optics, 17, 035707 (2015).
- S. K. Rajput and **N. K. Nishchal,** Fresnel domain nonlinear image encryption scheme based on Gerchberg-Saxton phase retrieval algorithm, Applied Optics, 53, 418-425 (2014).
- I. Mehra and **N. K. Nishchal,** Image fusion using wavelet transform and its application to asymmetric cryptosystem and hiding, Optics Express, 22, 5474-5482 (2014).
- Namrata Shukla, **Awalendra K. Thakur,** Archana Shukla and David T. Marx, Ion Conduction Mechanism in Solid Polymer Electrolyte: An Applicability of Almond-West Formalism, International Journal of Electrochemical Science, 9, 7644 – 7659 (2014).
- L. Kumar, P. Kumar and **M. Kar,** Low Temperature and High Magnetic Field Dependence Magnetic Properties of Nanocrystalline Cobalt Ferrite, , Journal of Superconductivity and Novel Magnetism, 27,1677 (2014).
- L. Kumar, P. Kumar and **M. Kar,** Non-linear Behaviour of Coercivity to the Maximum Applied Field in La3+ substituted Nanocrystalline Cobalt Ferrite, Physica B, 448,28 (2014).
- S. K. Rajput and **N. K. Nishchal,** Optical asymmetric cryptosystems: A review, Asian Journal of Physics, 23, 473-490 (2014).
- I. Mehra and **N. K. Nishchal,** Optical asymmetric watermarking using modified wavelet fusion and diffractive imaging, Optics and Lasers in Engineering, 68, 74-82 (2015).
- S. K. Rajput, D. Kumar and **N. K. Nishchal,** Optical encryption system based on phase mask multiplexing and photon counting imaging for multiple image authentication and digital hologram security, Applied Optics, 54, 1657-1666 (2015).
- Avirup Das, **Awalendra K. Thakur** and K. Kumar, Origin of Near Constant Loss (NCL) in Ion Conducting Polymer Blends, J. Physics & Chemistry of Solids, 80, 62–66 (2015).

- S. K. Rajput, D. Kumar and **N. K. Nishchal,** Photon counting imaging and polarized light encoding for secure image verification and hologram watermarking, Journal of Optics, 16, 125406 (2014).
- Heeralal Gargama, S. K. Chaturvedi and **Awalendra K. Thakur,** Reliability-based Design Optimization of Electromagnetic Shielding Structure using Neural Networks and Real-coded Genetic Algorithm, J. Mechanical Engineering Science, 228(18), 3471–3481 (2014).
- A. K. Das, **M. Kar,** A. Srinivasan, Room temperature ferromagnetism in undopedZnO nanofibers prepared by electrospinning, Physica B, 448,112 (2014).
- V. Kumar, S. Kumari, P. Kumar, **M. Kar,** L. Kumar, Structural Analysis by Rietveld Method and its Correlation with Optical Properties of Nanocrystalline Zinc Oxide, . , Advanced Materials Letters, 6(2),139 (2015).
- S. Kumari, V. Kumar,P. Kumar, **M. Kar** and L. Kumar, Structural and Magnetic Properties of Nanocrystalline Yttrium Substituted Cobalt Ferrite Synthesized by the Citrate Precursor Technique, Advance Powder Technology, 26(1),213 (2015).
- P. Kour,P. Kumar, S. K. Sinha and **M. Kar,** Study of Dielectric and Impedance spectroscopy of La Substituted NanocrystallinePb(Zr0.52Ti0.48)O3 Ceramics, , Journal of Materials Science: Materials in Electronics, 26 () 1304. (2015).
- A. K. Kavala and **A. K. Mukherjee,** Sub-Threshold like Charge Transport in organic Field Effect Transistor: A Study on Effective Channel Thickness, Modern Physics Letters B, Yet to be given (2015).
- D. Kumar and **N. K. Nishchal,** Three-dimensional object recognition with joint fractional Fourier transform correlator using digital Fresnel holography, Asian Journal of Physics, 23, 527-534 (2014).
- P. Kumar and **M. Kar,** Tuning of Net Magnetic Moment in BiFeO3Multiferroics by Co-substitution of Nd and Mn,. , Physica B, 448, 90 (2014).
- M. Panda, V. Srinivas and **A. K. Thakur,** Universal Microstructure and Conductivity Relaxation of Polymer-Conductor Composites across the Percolation Threshold, Current Applied Physics, 14, 1596 – 1606 (2014).
- **Ajay D. Thakur,** S. Ooi, M. Chand, J. Jesudasan, P. Raychaudhuri, K. Hirata, Vortex lattices and their transformations in rectangular antidote arrays, AIP Conference Proceedings, 1591 (1651).
- I. Mehra and **N. K. Nishchal,** Wavelet-based image fusion for securing multiple images through asymmetric keys, Optics Communications, 335, 153-160 (2015).

- A. K. Kavala and **A. K. Mukherjee**, Sub-Threshold like Charge Transport in organic Field Effect Transistor: A Study on Effective Channel Thickness, Modern Physics Letters B, in press (2015).

Papers Presented in Conferences:

- **N K Nishchal,** 3D optical information security, Collaborative Conference on 3D & Materials Research, Seoul, South Korea (2014).
- Namrata Shukla and **A. K. Thakur,** AC Conductivity Analysis and Dielectric Relaxation Behaviour of a Conducting Polymeric System Based on PMMA-LiClO4, 14th Asian Conference on Solid state Ionics (ACSSI-2014), Singapore (2014).
- **N K Nishchal,** Basics of nanophotonics, UGC Sponsored National Seminar on Nano Science & its Applications, Chapra (2014).
- Atma Rai and **A. K. Thakur,** Behaviour of La0.85Al0.15FeO3 as an Electrode for Redox Supercapacitor Application, International Conference on Emerging Materials and Applications, IIT Roorkee (2014).
- P. Kumar, A. K. Sinha, A. Sagdeo, M. N. Singh and **M. Kar,** Comparative study on oxygen octahedral tilting induced structural transition in co-substituted BiFeO3 ceramics, 5th conference on Neutron Scattering, BARC Mumbai (2015).
- Avirup Das, **A. K. Thakur** and Krishna Kumar, Conductivity and Dielectric Analysis of Ion Conducting Polymer Blend at Ambient and Sub-ambient Temperatures, International Conference on Condensed Matter Physics (ICCMP-2014), H. P. University, Shimla (2014).
- Arun Singh Chouhan, Supratik Dasgupta, Vikas Shabadi, Aldin Radetinac, Philipp Komissinskiy, **Ajay D. Thakur** and Lambert Alff, Control of stoichiometry in LaMnO3/La2MnO4 thin films grown by pulsed laser deposition,79. Jahrestagung der DPG und DPG-Frühjahrstagung (79th Annual Meeting of the DPG and DPG Spring Meeting), Berlin, Germany (2015).
- Shamik Chakrabarti, **A. K. Thakur** and K. Biswas, DFT Study on Feasibility of Two Step Redox Process in Li Battery Electrodes, 14th Asian Conference on Solid state Ionics (ACSSI-2014), Singapore (2014).
- **N K Nishchal,** Digital holography and its applications, Seminar on Laser and its Applications, Muzaffarpur (2014).
- D. Kumar and **N. K. Nishchal,** Digital holography based three-dimensional object recognition using binary differential joint transform correlator, 12th Int'l. Confer. on Fiber Optics and Photonics, Kharagpur (2014).

- D. Kumar and **N. K. Nishchal,** Digital holography for three-dimensional object recognition, 6th Bihar Science Conference An Int'l. Confer. on Science & Technology, Patna (2014).
- P. Kumarand **M. Kar,** Double Crystal Symmetries in Morphotropic Phase Boundary of Substituted BiFeO3 Ceramics, DAE Solid State Symphosium, BARC, Mumbai (2014).
- I. Mehra and **N. K. Nishchal,** Double image encryption using gyrator wavelet transform, Int'l. Confer. on Optics & Photonics, Kolkata (2015).
- Sharmistha Chatterjee, **V. R. Dantham and** S.Hussain, Efficient nanoplasmonic antenna for fabricating single protein molecule detector, This paper was presented in International Conference on Optics and Photonics (ICOP) held in Kolkata and it was selected to publish in the SPIE (United States of America) proceedings, (2015).
- Sharmistha Chatterjee, **V. R. Dantham and** S.Hussain, Efficient nanoplasmonic antenna for fabricating single protein molecule detector, Internation conference on Optics and Photonics, Kolkata (2015).
- P. Kumar, R. Kumar and **M. Kar,** Enhanced Magnetic Properties near MPB in Ho and Mn co-substituted Nanocrystalline BiFeO3, , NANOCON 2014, Pune (2014).
- G. M. Das, **V. R. Dantham** and R. Laha, Enhancement of Raman scattering using photonic nanojet of an optical microspere, Internation conference on Optics and Photonics, Kolkata (2015).
- I. Mehra and **N. K. Nishchal,** Gyrator wavelet transform for optical information processing applications, Proc. of Confer. on Recent Trends in Information Optics & Quantum Optics, Patna (2014),
- S. K. Rajput, D. Kumar and **N. K. Nishchal,** Hologram watermarking using phase-retrieval algorithm and photon counting imaging, Proc. of Confer. on Recent Trends in Information Optics & Quantum Optics, Patna (2014).
- D. Kumar, S. K. Rajput and **N. K. Nishchal,** Hologram watermarking with color image via phase multiplexing and photon counting imaging technique, Int'l. Confer. on Optics & Photonics, Kolkata (2015).
- D. Kumar and **N. K. Nishchal,** Identification of three-dimensional objects using nonlinear joint fractional Fourier transform correlator, XVI Annual Confer. of Int'l. Academy of Physical Sciences on Physical Sciences and Technology for Sustainable Development, Jabalpur (2014).
- S. Holler, **V. R. Dantham,** D. Keng, V. Kolchenko, S. Arnold, Label-free single cancer marker protein detection using a nanoplasmonic-photonic hybrid whispering gallery mode biosensor, SPIE conference on Sensing Technologies for Global Health, Military

Medicine and Environmental Monitoring IV, 911217 (June 5, 2014), Maryland, USA (2014).

- S. Greculeasa, V. Kuncser, G. Schinteie, L. Kumar, P. Kumar, B. Sahoo and **M. Kar.** Magnetic and Mössbauer spectroscopy study of Al and Mn substituted nanocrystalline Ni ferrites, Electroceramics XIV, Romania (2014).
- Ashutosh Kumar, V. K. Malik and **Ajay D. Thakur,** Nanostructured $La_{0.7}Sr_{0.3}Mn_{1-x}Co_xO_3$ for Solid State Electrochemical Device Application, CTCMP 2015, NISER, Bhubaneshwar (2015).
- I. Mehra and **N. K. Nishchal,** Optical asymmetric cryptosystem based on axial translation of image sensor, 12th Int'l. Confer. on Fiber Optics and Photonics, Kharagpur (2014).
- I. Mehra and **N. K. Nishchal,** Pan-sharpened image optical encryption, Int'l. Confer. on Opto-electronics and Applied Optics, Kolkata (2014).
- D. Kumar and **N. K. Nishchal,** Performance enhancement of joint fractional correlator for digital holography based three-dimensional object recognition using wavelet filter, Int'l. Confer. on Opto-electronics and Applied Optics, Kolkata (2014).
- D. Kumar and **N. K. Nishchal,** Performance evaluation of nonlinear joint fractional correlator for three-dimensional objects recognition, Proc. of Confer. on Recent Trends in Information Optics & Quantum Optics, Patna (2014).
- A. Fatima, I. Mehra, D. Kumar and **N. K. Nishchal,** Plasmonics based keys for image encryption that uses exclusive OR logic operation, COMSOL Conference 2014, Bangalore (2014).
- A. Fatima and **N. K. Nishchal,** Plasmonics for information security, Proc. of Confer. on Recent Trends in Information Optics & Quantum Optics, Patna (2014).
- A. Fatima, I. Mehra and **N. K. Nishchal,** Plasmonics-based keys for optical image encryption, 12th Int'l. Confer. on Fiber Optics and Photonics, Kharagpur (2014).
- A.L. Sharma and **A. K. Thakur,** Relaxation Behavior in Clay Reinforced Polymer Nanocomposites, 14th Asian Conference on Solid state Ionics (ACSSI-2014), Singapore (2014).
- S. K. Rajput and **N. K. Nishchal,** Simultaneous encryption of gray-scale and color images, 12th Int'l. Confer. on Fiber Optics and Photonics, Kharagpur (2014).
- Ajay Nath and **Utpal Roy,** Solitary waves in a bichromatic optical lattice potentials under two and three-body interactions, International Seminar on Current Trends in Quantum Gases, BEC and Solitons, Panjab University Chandigarh, India (2014).

- S. Chatterjee, **V. R. Dantham** and S. Hussain, Synthesis and charaterization of efficient nanoplasmonic epitopes for fabricating a WGM hybrid microresonator, Recent Trends in Information Optics and Quantum Optics, IIT Patna (2014).
- S. Holler, **V. R. Dantham,** D. Keng, V. Kolchenko, S. Arnold, B. Mulroe and M. P. Grbavac, The whispering gallery mode biosensor: Label free detection from virus to single protein, SPIE (United States of America) conference on Biosensing and Nanomedicine VII, California, United States (2014).
- G. M. Das and **V. R. Dantham,** Theoretical investigation on photonic nanojet of an optical microsphere, Recent Trends in Information Optics and Quantum Optics, IIT Patna (2014).
- Ajay Nath and **Utpal Roy,** Ultracold atoms at negative temperature, Discussion meeting on Light-Matter interactions: International Centre for Theoretical Studies, Indian Academy for the Cultivation of Science (2014).

4.2.4 Other Activities

Fellow - Professional Bodies:

- Dr. Naveen Kumar Nishchal (2005) Optical Society of India

Member - Professional Bodies:

- Ajay Thakur (2012) Indian Physics Association.
- Manoranjan Kar (2013) Magnetic Society of India.
- Manoranjan Kar (2004) Indian Crystalographic association.
- Naveen Kumar Nishchal (2003) OSA-The Optical Society.
- Naveen Kumar Nishchal (2002) Lasers And Spectroscopy Society of India.
- Naveen Kumar Nishchal (2010) Indian Science Congress Association.
- Naveen Kumar Nishchal (2002) SPIE - The International Society for Optical Engineering, USA.
- Utpal Roy (2005) Indian Society of Atomic Molecular Physics.
- Utpal Roy (2013) AICTE.

Member - Editorial Board:

- A. K. Thakur (2008) Editorial Board Member: The Open Energy & Fuels, *Published by* Bentham Science Publishers, UK.

- A. K. Thakur (2010) Associate Editor: Journal of Applied Sciences, Engineering and Technology, *Published by* Maxwell Science Publications.
- A. K. Thakur (2012) Editorial Board Member: Journal of Research Updates in Polymer Science (JRUPS), Published by Life Science Global.
- Ajay D. Thakur (2013) Editorial Board - Journal of Advanced Research in Applied Physics and Applications.
- Naveen Kumar Nishchal (2013) Editor - The Scientific World Journal: Signal Processing
- Utpal Roy (2013) *Associate* Editor - World Res. J. of Appl Phys.

Visits Abroad by Faculty Members

- A K Thakur - Visiting Professor during Summer (Department of Physics, The National University of Singapore) May 10 - July 6, 2014
- Naveen Kumar Nishchal - To deliver an Invited Talk (Seoul, South Korea) 7 days

Invited Lectures by Faculty Members

- Materials for Energy Applications by Ajay D. Thakur (College of Commerce, Patna)
- Magnetic Three Vectors and Magnetic Materials by Manoranjan Kar (D.A.V. Public School,Hazaribagand)
- Bose-Einstein condensate in various external traps: an exact analytical approach by Utpal Roy (International Seminar on Current Trends in Quantum Gases, BEC and Solitons, Panjab University, Chandigarh, India)
- Light-Matter interactions by Utpal Roy (International Centre for Theoretical Studies, Indian Academy of Cultivation of Sciences Kolkata, India)
- Supercapacitors : Concepts, Design and State of-the-art Status as an Energy Storage Device by A K Thakur (PDPM Indian Institute of Information Technology, Jabalpur)
- NCL behaviour and Ion Transport Property in Ion Conducting Polymers by A K Thakur (14th Asian Conference on Solid State Ionics, The National University of Singapore, Singapore)
- Optical techniques of image encryption, watermarking and 3D target identification by Naveen Kumar Nishchal (Seoul, SOUTH KOREA)
- How to teach Physics at by Ayash Kanto Mukherjee (Dr. G. L. Dutta D.A.V. Public School)
- Electrodynamics by Ayash Kanto Mukherjee (D.A.V. Public School Hazaribagh)

4.3 Chemistry

4.3.1 Faculty List

Name	Highest Degree	Research Areas
Associate Professors		
Debashis Chakraborty	**Ph.D.**	Synthetic organometallic chemistry; homogeneous catalysis
Assistant Professors		
Debabrata Seth (Coordinator)	**Ph.D.**	Photochemistry and Chemical Dynamics
Md. Lokman Hakim Choudhury	**Ph.D.**	Total Synthesis of Biologically Important Natural Products, Pot Atom and Step Economic (PASE) Synthesis, Diversity Oriented Synthesis (DOS) and Heterocyclic Chemistry.
Neeladri Das	**Ph.D.**	Supramolecular Chemistry, Coordination Chemistry, Polymer Chemistry
Prolay Das	**Ph.D.**	DNA self assembly for production of 3-dimensional functional Nanostructures. Clustered DNA damage and DNA repair mechanism in Nucleosome core particles.
Ranganathan Subramanian	**Ph.D.**	Spectroscopy, Computational, Instrumentation development, Physical Chemistry
Sahid Hussain	**Ph.D.**	Nano-scale Materials, Green Chemistry and Synthetic Organic Methodologies

Amit Kumar	**Ph.D.**	Exploration of carbohydrates: Synthesis of modified sugar, glycosyltransferase inhibitors, oligosaccharides and chiral catalyst. Application of Metal catalysis in natural product synthesis.

4.3.2 Academic Programs

- B.Tech. in Chemical Science and Technology.
- M.Tech. in Nanoscience and Technology (jointly with Department of Physics).
- Ph.D. Program.

4.3.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Prolay Das,** DNA guided assembly of Quantum dot-Photosensitizer conjugate for photodynamic therapy Sponsoring Agency (BRNS, DAE, **Rs.21.07 Lakhs**).
- **PI: Dr. Neeladri Das,** Design and Synthesis of Triptycene Based Microporous Polymers (CSIR New Delh, **Rs.14.00 Lakhs**).
- **PI: Dr. Prolay Das,** DNA guided assembly of Quantum dot-Photosensitizer conjugate for photodynamic therapy (BRNS, **Rs.25.00 Lakhs**).
- **PI: Dr. Prolay Das,** DNA supramolecular self assembly for construction of functional nanostructures (DBT, **Rs.25.00 Lakhs**).
- **PI: Dr. Prolay Das,** DNA-Supramolecular Self Assembly for construction of Functional Nanostructures (Dept. of Biotechnology, Govt. of India, **Rs.24.58 Lakhs**).
- **PI: Dr. Amit Kumar,** Functionalization of the Carbohydrates: Designing New Strategies for the Synthesis of Natural and Modified Sugars via Catalysis (DST-SERB, **Rs.0.00 Lakhs**).
- **PI: Dr. Debashis Chakraborty,** Indium Compounds as Catalysts for Ring Opening Polymerization (CSIR New Delhi (Proposal Submitted in December 14), **Rs.33.70 Lakhs**).
- Indo-US Joint Center on From Fundamentals to applications of Nanoparticle Assemblies (The Indo-US Science and Technology Forum (IUSSTF), Rs.64.75 Lakhs) (PI : Dr. Sanat K. Kumar (Columbia University) and)
- **PI: Dr. Prolay Das,** Study of Clustered DNA-Damage Repair Mechanism in Nucleosome Core Particles (DST, **Rs.25.00 Lakhs**).

- **PI: Dr. Debabrata Seth,** Study of osmotic and activity coefficients of binary systems containing room temperature ionic liquids (RTILs) and molecular solvents by vapour pressu (CSIR, **Rs.19.00 Lakhs**).

Papers Published in Journals:

- Aniruddha Molla, **Sahid Hussain,** "Borax catalyzed domino reactions: synthesis of highly functionalised pyridines, dienes, anilines and dihydropyrano[3,2-c] chromenes, RSC Advances, 4, 29750–29758 (2014).
- Edwin S. Gnanakumar, Eswara Rao Chokkapu, Shrikant Kunjir, T. G. Ajithkumar, P. R. Rajamohanan, **Debashis Chakraborty,** Chinnakonda S. Gopinath, 9-Fluorenemethanol: an internal electron donor to fine tune olefin polymerization activity, Dalton Transactions, 43, 9143 (2014).
- **Debashis Chakraborty,** Dipa Mandal, Venkatachalam Ramkumar, V. Subramanian, J. Vijaya Sundar, A new class of MPV type reduction in group 4 alkoxide complexes of salicylaldiminato ligands: Efficient catalysts for the ROP of lactides, epoxides and polymerization of ethylene, Polymer, 56, 157 (2015).
- Vandana Singh, Bhavini Kumari, Banibrata Maity, **Debabrata Seth, Prolay Das,** Abasic DNA Damages with APE1 in TATA Box and CpG Island by Reaction Kinetics and Fluorescence Dynamics, Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis, 766-767, 56 (2014).
- Arpi Majumdar, Rigini Singh, Mrinmay Mandal, T. Madhubabu, **Debashis Chakraborty,** Air-stable Palladium(0) Phosphine Sulfide Catalysts for Ullmann-type C-N and C-O Coupling, Journal of Organometallic Chemistry, 781, 23 (2015).
- Shaik Karamthulla, Suman Pal, Md. Nasim Khan and **Lokman H. Choudhury,** "On-water" synthesis of novel trisubstituted 1,3-thiazoles via microwave-assisted catalyst-free domino reactions, RSC Advances, 4, 37889–37899 (2014).
- Kumari, R. Bhowmick, S. Das, **N. Das,** P, Binding and interaction of di- and tri-substituted organometallic triptycene palladium complexes with DNA, J. Biol. Inorg. Chem., 19(7), 1221-1232 (2014).
- Rina Kumari, Sourav Bhowmick, **Neeladri Das** and **Prolay Das,** Binding and Interaction of Di- and Tri-Substituted Organometallic Triptycene Palladium Complexes with DNA, Journal of Biological Inorganic Chemistry, Vol. 19 Issue 7, p12 (2014).
- Samiyara Begum and **Ranga Subramanian,** Bonding and Spectroscopic properties of Complexes of SO2-O2 and SO2-N2 and its atmospheric consequences, Phys.Chem.Chem.Phys, 16, 17658 – 17669 (2014).

- Bijja Rajashekhar, **Debashis Chakraborty,** Co(II) and Mn(II) catalyzed bulk ring-opening polymerization of cyclic esters, Polymer Bulletin, 71, 2185 (2014).
- M. S. H. Faizi and **Sahid Hussain,** Di¬chlorido¬(N,N-diethyl-4-{[(quinolin-2-yl)meth -yl¬idene]amino-κ2N,N}aniline) mercury(II), Acta Cryst. E, E70, m197 (2014).
- Seema Singh, Anirban Chakraborty, Vandana Singh, Aniruddha Molla, **Sahid Hussain,** Manoj K. Singh and **Prolay Das,** DNA mediated assembly of quantum dot–protoporphyrin IX FRET probes and the effect of FRET efficiency on ROS generation, , Physical Chemistry Chemical Physics, 17, 5973-5981 (2015).
- Swarup Ghosh, **Debashis Chakraborty,** Babu Varghese, Group 1 salts of the imino(phenoxide) scaffold: Synthesis, structural characterization and studies as catalysts towards the bulk ring opening polymerization of lactides, European Polymer Journal, 62, 51 (2015).
- Ahmed, A. Sarkar, P. Ahmad, I. **Das, N. Bhowmick, A. K,** Influence of the Nature of Acrylates on the Reactivity, Structure and Properties of Polyurethane Acrylates, Ind. Eng. Chem. Res, 54(1), 47–54 (2015).
- Banibrata Maity, Aninda Chatterjee, Sayeed Ashique Ahmed, **Debabrata Seth,** Interaction of Nonsteroidal Anti-Inflammatory Drug Indomethacin with Micelles and Its Release, The Journal of Physical Chemistry B, 119, 3776 (2015).
- Mrinmay Mandal, **Debashis Chakraborty,** Kinetic investigation on the highly efficient and selective oxidation of sulfides to sulfoxides and sulfones with t-BuOOH catalyzed by La2O3, RSC Advances, 5, 12111 (2015).
- Shaik Karamthulla, Md. Nasim Khan and **Lokman H. Choudhury,** Microwave-assisted synthesis of novel 2,3-disubstituted imidazo[1,2-a]pyridines via one-pot three component reactions, RSC Advances, 5, 19724-19733 (2015).
- Md Nasim Khan, Suman Pal, Shaik Karamthulla and **Lokman H. Choudhury**, Multicomponent reactions (MCRs) for the facile access of coumarin fused dihydroquinolines and quinolines: Synthesis and photophysical studies, New Journal of Chemistry, 38, 4722-4729 (2014).
- Sayeed Ashique Ahmed, Aninda Chatterjee, Banibrata Maity, **Debabrata Seth,** Osmotic Properties of Binary Mixtures 1-Butyl-1-methylpyrrolidinium Dicyanamide and 1-Methyl-3 octylimidazolium Chloride with Water: Effect of Aggregation of Ions, The Journal of Chemical Thermodynamics, 81, 227 (2015).
- Sayeed Ashique Ahmed, Aninda Chatterjee, Banibrata Maity, **Debabrata Seth,** Osmotic Properties of Binary Mixtures of 1-Butyl-1-methylpyrrolidinium Iodide and Water, Journal of Molecular Liquids, 200, 349 (2014).

- Aninda Chatterjee, Banibrata Maity, Sayeed Ashique Ahmed, **Debabrata Seth,** Photophysics and Rotational Diffusion of Hydrophilic Molecule in Polymer and Polyols, The Journal of Physical Chemistry B, 118, 12680 (2014).
- Aninda Chatterjee, Banibrata Maity, **Debabrata Seth,** Photophysics of 7-(Diethylamino)coumarin-3-carboxylic Acid in Cationic Micelles: Effect of Chain Length and Head Group of the Surfactants and Urea, RSC Advances, 4,34026 (2014).
- Banibrata Maity, Aninda Chatterjee, **Debabrata Seth,** Photophysics of Lumichrome in Anionic and Cationic Micellar Media, RSC Advances, 5, 3814 (2015).
- Bhavini Kumari, Shib Shankar Banerjee, Vandana Singh, **Prolay Das** and **Anil K. Bhowmick,** Processing of abasic site damaged lesions by APE1 enzyme on DNA adsorbed over normal and organomodified clay, Chemosphere, 112, 503-510 (2014).
- S Bhowmick, S Chakraborty, A Das, P. R Rajamohanan, **N Das,** Pyrazine Based Organometallic Complex: Synthesis, Characterization and Supramolecular Chemistry, Inorganic Chemistry, 54 (6), pp 2543–25 (2015).
- Samiyara Begum and **Ranga Subramanian,** Reaction of chlorine radical with tetrahydrofuran: a theoretical investigation on mechanism and reactivity in gas phase, J Mol Model., 20:2262 (2014).
- Vandana Singh, Bhavini Kumari and **Prolay Das,** Repair efficiency of clustered abasic sites by APE1 in nucleosome core particles is sequence and position dependent, RSC Advances, 5, 23691-23698 (2015).
- Sourav Chakraborty, Sourav Bhowmick, J Ma, H Tan, **Neeladri Das**, Size Dependent Effect of New Organometallic Triptycene Tectons on the Dimension of Self-Assembled Macrocycles, Inorg. Chem. Frontiers, 2, 290-297 (2015).
- Aninda Chatterjee,Banibrata Maity, **Debabrata Seth,** Supramolecular Interaction between a Hydrophilic Coumarin Dye with Macrocyclic Hosts: Spectroscopic and Calorimetric Study, The Journal of Physical Chemistry B, 118, 9768 (2014).
- Banibrata Maity, Aninda Chatterjee, Sayeed Ashique Ahmed, **Debabrata Seth,** Supramolecular Interaction of Nonsteroidal Anti-inflammatory Drug in Nanochannels of Molecular Containers: A Spectroscopic, Thermogravimetric and Microscopic Investigation, ChemPhysChem, 15, 3502 (2014).
- Radhika Mehta, Rina Kumari, **Prolay Das** and **Anil Kumar Bhowmick,** Synthesis and Characterization of Biocompatible Monotyrosine-Based Polymer and its Interaction with DNA, Journal of Material Chemistry B, 2, 6236-6248 (2014).
- Shaik Karamthulla, Suman Pal, Md Nasim Khan and **Lokman H. Choudhury*** , Synthesis of pentasubstituted pyrroles via catalyst free multicomponent reactions, Synlett, 25,1926-1936 (2014).

- Suman Pal, Md. Nasim Khan, Shaik Karamthulla and **Lokman H. Choudhury*** , Synthesis of pyranocoumarin fused spirooxindoles via Knoevenagel/Michael/cyclization sequence: a regioselective organocatalyzed multicomponent reaction, Tetrahedron Letters, 56, 359–364 (2015).
- Sourav Chakraborty, Snehasish Mondal, Rina Kumari, Sourav Bhowmick, **Prolay Das, Neeladri Das,** Synthesis, characterization and DNA interaction studies of new triptycene derivatives, Beilstein J. Org. Chem., 10, 1290–1298 (2014).
- Sourav Chakraborty, Snehasish Mondal, Rina Kumari, Sourav Bhowmick, **Prolay Das and Neeladri Das,** Synthesis, characterization and DNA interaction studies of new triptycene derivatives, Beilstein Journal of Organic Chemistry 10, 1290–1298 (2014).
- Sourav Chakraborty, Snehasish Mondal, Sourav Bhowmick, J Ma, H Tan, S Neogi, **Neeladri Das,** Triptycene based organometallic complexes: a new class of acceptor synthons for supramolecular ensembles, Dalton Trans., 43(35), 13270-13277 (2014).
- Snehasish Mondal and **Neeladri Das,** Triptycene Based Organosoluble Polyamides: Synthesis, Characterization and Study of The Effect of Chain Flexibility on Morphology, RSC Adv., 4, 61383-61393 (2014).
- Md. Nasim Khan, Shaik Karamthulla, **Lokman H. Choudhury** and Md. S.H.Faizi, Ultrasound assisted multicomponent reactions: a green method for the synthesis of highly functionalized selenopyridines using reusable polyethylene glycol as reaction medium, RSC Advances, Vol-5, Pages 22168 (2015).
- Mrinmay Mandal, **Debashis Chakraborty,** Venkatachalam Ramkumar, Zr(IV) complexes containing salan-type ligands: Synthesis, structural characterization and role as catalysts towards the polymerization of ε-caprolactone, rac-lactide, ethylene, homopolymerization and copolymerization of epoxides with CO2, RSC Advances, 5, 28536 (2015).
- Samiyara Begum and **Ranga Subramanian**, Theoretical Studies on Gas-Phase Kinetics and Mechanism of H-abstraction Reaction from Methanol by ClO and BrO Radicals, RSC Adv., 2015, DOI: 10.1039/C5RA06483J.

Papers Presented in Conferences

- Aniruddha Molla, Subham Ranjan, Arif Dar and **Sahid Hussain**, Borax Catalyzed Domino Reactions: Synthesis of Highly Functionalised Spirooxindole Derivatives, An International Symposium on Recent Advances in Chemistry (REACH), Shillong (2015).

- Pappuru Sreenath, J. Vijaysunda, V. Subramanian, Dillip Kumar Chand, **Debashis Chakraborty,** Group IV Complexes as Initiators for the ROP of rac-Lactide: ligand and metal screening, 13th Eurasia Conference On Chemical Sciences Indian Institute of Science, Bangalore, Indian Institute of Science, Bangalore (2014).
- **Debashis Chakraborty** Metal Phenolates as Catalysts for the Synthesis of Bio-degradable Polymers (Invited Lecture), International Conference on Natural Polymers 2015, Mahatma Gandhi University, Kerala (2015).
- **Lokman H. Choudhury,** Shaikh Karamthulla, Suman Pal and Md Nasim Khan Molecular diversity from the multicomponent reaction of arylglyoxal,1,3-dicarbonyl compounds and various 1,3-binucleophiles under green reaction conditions, 5th Asia-Oceania Conference on Green and Sustainable Chemistry (AOC 5-GSC), India Habitat Centre, Lodhi Road, Delhi (2015).
- Sagnik Kumar Roymuhury, **Debashis Chakraborty** Polymerization studies of lactides, epoxides and ethylene with highly effective group 4 metal alkoxide catalysts containing imine based bis-bidentate ligands, Second Symposium on Advances in Sustainable Polymers 2015, Centre for Excellence for sustainable polymers (2015).
- **Debashis Chakraborty** Role of Ligands in the Ring Opening Polymerization of Lactones and Lactides (Short Invited Lecture), MACRO 2015 (Preminum National Conference in Polymer Science and Engineering), IACS, Kolkata, West Bengal (2015).
- Snehasish Mondal and **Neeladri Das** Synthesis and Characterization of Triptycene Based Polymer, MACRO 2015 (a biannual international symposium on Polymer Science and Technology held in India under the umbrella of The Society of Polymer Science, India - SPSI), IACS Jadavpur, Kolkata, WB, India (2015).
- S. Karamathulla and **Lokman H.Choudhury**, Synthesis of Functionalized Pyrroles and Thiazoles using Arylglyoxal-Based Multicomponent Reactions (MCRs), 15th Tetrahedron sympoium, Asian Edition, Singapore (2014).
- Aniruddha Molla and **Sahid Hussain**, Template Free Synthesis of Bi-In-Zn-S and its efficient visible-light driven decolorization of methylene blue, An International Symposium on Recent Advances in Chemistry (REACH), Patna (2014).
- Samiyara Begum and **Ranga Subramanian**, Theoretical investigation on Energetics and Spectroscopic Properties of Linear Cation Molecule, XCH+-N2 (X=O, S) Complexes in Gas-Phase, The 14th Theoretical Chemistry Symposium, CSIR- NCL, Pune (2014).
- Dipa Mandal, **Debashis Chakraborty** Zirconium Complexes of Salicylaldiminato Ligands and Their Catalytic Activity in Ring-opening Polymerization of ε-Caprolactone and rac-Lactide, 13th Eurasia Conference on Chemical Sciences, Indian Institute of Science, Bangalore (2014).

- **Ranga Subramanian**, Theoretical investigation on Energetics and Spectroscopic Properties of Linear Cation Molecule, XCH+-N2 (X=O, S) Complexes in Gas-Phase, The 14th Theoretical Chemistry Symposium, CSIR- NCL, Pune, December 2014.

4.3.4 Other Activities

Member - Professional Bodies:

- Amit Kumar (2014) Chemical Research Society of India
- Ranganathan Subramanian (2014) Chemical Research Society of India

Member - Editorial Board

- Amit Kumar (2013), Journal of Pharma-Bio Management.
- Md. Lokman Hakim Choudhury (2013), American Journal of Organic Chemistry.
- Prolay Das (2013), Oriental Journal of Chemistry.

Visits Abroad by Faculty Members:

- **Neeladri Das** - IUSSTF Project: collaboration with Prof. Dr. Ramanan Krishnamoorti - Chemical Engineering (University of Houston, Texas, USA) three weeks in June 2014.

Invited Lectures by Faculty Members

- Synthesis and Characterization of Triptycene Based Polymer by Neeladri Das (IACS Kolkata).
- Some Application of Directing Group in the Synthesis of functionalized heterocycles by AMIT KUMAR (CDRI-Lucknow, India).
- Green Chemistry and Green Technology by Sahid Hussain (Science College, Patna).
- Abinitio calculations and its Applications in Atmospheric Sciences by Ranganathan Subramanian (Patna University for National Science Day).
- Role of ligands in the ring opening polymerization of lactones and lactides by Debashis Chakraborty (MACRO-2015 at IACS Kolkata, West Bengal).
- Metal phenolates as catalysts for the synthesis of bio-degradable polymers by Debashis Chakraborty (ICNP-2015 at University of Kottayam, Kerala).

5. School of Humanities & Social Sciences

5.1 Faculty List

Name	Highest Degree	Research Areas
Associate Professors		
Binod Mishra (Coordinator)	**Ph.D.**	Professional Communication, Indian Writing in English, Contemporary Literature
Assistant Professors		
Aditya Raj	**Ph.D**	Theoretical and Methodological Practice, Sociology of Education, Development, Migration and Culture, Social Change in India, Bihar
Jyotsna Agrawal	**Ph.D**	Positive Psychology, community mental health, child & adolescent mental health, Neuro-phenomenology, Indian Psychology, Yoga & Consciousness studies and first-person/ subjective research methodologies
Nalin Bharti	**Ph.D**	Macroeconomic Reforms WTO and India
Papia Raj	**Ph.D**	Health care management, , Population and Public Health, Regional Development, Quantitative Methods,Waste Management, Environmental Health
Priyanka Tripathi	**Ph.D**	Gender Studies, Indian Writing in English, Short Fiction
Smriti Singh	**Ph.D**	Contemporary Literary Theory, Linguistics and Language Teaching, Indian Writing in English

5.2 Academic Programs

- Ph. D Program.

5.3 Research & Development Activities

Sponsored Projects:

- **PI: Dr. Papia Raj,** Waste Management Training to Reduce Health Hazards of Solid Wastes in Patna (Center for Energy and Environment, **Rs.12.18 Lakhs**).
- **PI: Dr. Papia Raj,** Waste Management Training to Reduce Health Hazards of Solid Wastes in Patna (Centre for Energy and Environment, **Rs.12.00 Lakhs**).

Papers Published in Journals:

- **Binod Mishra,** "Innovative Ways of English Language Teaching in Rural India through Technology", International Journal of English and Literature 6, 38 (2015).
- **Priyanka Tripathi** and Anupma Singh, "Supernatural Proximity: Fantasy and Fiction in Charles Dickens's "The Bagman's Story", IUP Journal of English Studies, 86-95 (2014).
- **Priyanka Tripathi**, Dimensions of Cultural Conflict and Diasporic Sensibilities in Chitra Banerjee Divakaruni's Arranged Marriage, Sukhadia University Journal of English Literary Studies, 76-85 (2014).
- **Binod Mishra** and Veerendra Kumar Mishra, Dreams: A de tour of Indentity Formation in Chitra Banerjee's Queen of Dreams, Conjuctions, 107-118 (2014).
- Sharma Devendra K and **Binod Mishra**, English in Hindustan: A historical & Sociolinguistic Study, Creative Writing and Criticism. (An International Journal of English Studies) XII, 60-68 (2014).
- Shaivya Singh, **Smriti Singh,** Rajesh Kumar, English in India: A Socio-Psychological Paradox, IOSR Journals 127-130 (2014).
- Kumar Gaurav, **Nalin Bharti** and Priyanka Sinha, Is India Back to the Hindu Growth Rate, YOJNA, Vol 58, pp. 20-27 (2014).
- **Smriti Singh,** Narrating a Subaltern Consciousness: Bamas Sangati, International Journal of English and Literature, 113-118 (2014).
- Lata Atreya, **Smriti Singh,** Rajesh Kumar, Passives in Magahi, IOSR Journals 19, 47 (2014).
- **Priyanka Tripathi,** Quest for an Alternate Paradigm: A Theoretical Expedition of Women and Indian Public Policy, Spectrum: An International Journal of Humanities and Social Sciences, 1-8 (2014).
- Lata Atreya, **Smriti Singh,** Rajesh Kumar, Relative Clauses in Magahi-A Descriptive Story, IOSR Journal 19, 43 (2014).

- Pooja and **Aditya Raj,** Representation of Indian Women in Select Indian Diasporic Narratives, Roots and Routes, Autumn (2014).
- **Smriti Singh,** Self-Assessment of Oral Proficiency among ESL Learners, ELT Voices-india, 1-7 (2015).
- **Smriti Singh,** Using Technology for Measuring Proficiency in Oral Skills at College Level in India, Journal of ELT and Applied Linguistics, 29-36 (2015).
- **Aditya Raj, Papia Raj,** Utilization of Maternal Health Care Services in Bihar, Research Process, 2, 11 (2014).
- **Aditya Raj** and **Papia Raj,** Utilization of Maternal Health Services in Bihar, Research Process: International Journal of Social Research Foundation, 2, 3 (2014).
- **Nalin Bharti** and Shaiwal Satyarthi, Why TK Incompatible with IPR: Practical implications and illustrations, Journal of Central European Green Innovation, Vol 02, No- 2 (2014).
- **Nalin Bharti** and Shaiwal Satyarthi, Why TK Incompatible with IPR: Practical implications and illustrations, Journal of Central European Green Innovation, Vol 02, Number 2 (2014).

Papers Presented in Conferences:

- **Bonod Mishra,** "Quintessence of Hope and Trust in Mulk Raj Anand's The Bubble", 59th All India English Teachers' Conference, Rajasthan Technical University, Kota, (2014).
- **Aditya Raj** Education of Indian Diasporic Youth in Canada, All India Sociological Conference, Varanasi (2014).
- **Smriti Singh** Employability Skills in ESL Classroom, English from Classes to Masses, Vivekanand Global university, Jaipur (2014).
- **Nalin Bharti** and Gopal Ganesh, "Is Labor Law a Hindrance in India's Public Sector Reforms?", Vth international Scientific Conference on the series of 'Public Sector in the Modern Economy, University of Bialystok, Poland (2014).
- **Smriti Singh** Learning Academic Vocabulary: Need for Conscious Effort, international Conference on Language, Literature and Community, Bhubaneshwar (2015).
- **Nalin Bharti** Penalist with Hans Bernd Schaefer, Professor, Bucerius Law School in Hamburg, Germany in Track-2 of the conference, International Conference on Law and Economics, Gujarat National Law University (2015).
- **Smriti Singh** Self-Assessment of Oral Proficiency in English, Role of ELT in Education for Sustainable Development, Amity University, Lucknow (2014).

- **Smriti Singh** Technology and the Suburban Language Classroom, Globalization and Localization in CALL, Bhavans Sheth R.A. College, Ahmedabad (2014).
- **Smriti Singh** Technology in Learning and Teaching, Impact of Technology on Society: Issues and Challenges, St. Xaviers College, Patna (2014).
- **Aditya Raj** and Atul Thakur, Towards Socially relevant Engineering Education in India, All India Sociological Conference, Varanasi (2014).

Books

- **Binod Mishra** and Prashant Mishra: Post Colonial Pedagogical Issues: Strategies, theories and Practices in English Teaching. published by Adhyayan Publishers and Distributors, New Delhi (2014).

5.4 Other Activities

Fellow - Professional Bodies:

- Aditya Raj (2011) Indian Sociological Association

Member - Professional Bodies:

- Aditya Raj (2001) Indian Sociological Society.
- Aditya Raj (2004) International Sociological Society.
- Binod Mishra (Life) Association for English Studies of India.
- Binod Mishra (Life) Indian Association for Australian Studies.
- Binod Mishra (Life) Association of Literature & Environment.
- Jyotsna Agrawal (2006) Indian Association of Clinical Psychology.
- Nalin Bharti (Life) Indian Society of Labour Economics.
- Nalin Bharti (Life) The Indian Science Congress Association.
- Nalin Bharti (2013) UNCTAD Virtual Institute on Trade and Development, Geneva, Switzerland.
- Nalin Bharti (2013) American Economic Association.
- Papia Raj (2013) All India Sociological Society.

Member - Editorial Board:

- Aditya Raj (2013) Member, Editorial Board - International Journal of Critical Pedagogy.
- Aditya Raj (2013) Member, Editorial Board - International Journal of Youth Studies.
- Binod Mishra (2014) Chief Editor - The Indian Journal of English Studies, Vol. 51.

- Binod Mishra (2014) Member - International Journal of Multidisciplinary Approach and Studies.
- Binod Mishra (2013) Assistant Editor - Creative Writing and Criticism. (An International Journal of English Studies).
- Binod Mishra (2014) Member - International Journal of Literature, Language and Theory
- Binod Mishra (2014) Member-Editorial Board – Literati.
- Binod Mishra (2013) Reviewer - Cyber Literature.
- Nalin Bharti (2013) Member Editorial Board - International Journal of History and Research.
- Nalin Bharti (2013) Member Editorial Board - Journal of Management & Public Policy (JMPP).
- Nalin Bharti (2013) Member Editorial Board - American International Journal of Research in Sciences, Technology,Engineering and Mathematics.
- Nalin Bharti (2013) Member Editorial Board - International Journal of Humanities and Social Sciences (IJHSS).

Awards & Honours

- Aditya Raj (2013) Professor M N Srinivas Memorial Prize, Indian Sociological Society.
- Nalin Bharti (2013) Selected for the Bharat Shiksha Ratan Award by Global Society for Health & Education Growth, New Delhi.
- Aditya Raj (2013) Werklund Foundation Award, University of Calgary.

Visits Abroad by Faculty Members

- Nalin Bharti - IV international Scientific Conference on the series of 'Public Sector in the Modern Economy', University of Bialystok, Poland, Oct. 23-24, 2014.
- Priyanka Tripathi - International Conference (ICAS 2014), Colombo, Sri Lanka, July 14-15, 2014.
- Binod Mishra - To attend TRI-ELE Conference and present a paper, Bangkok, Thailand, June 20-21, 2014.

Invited Lectures by Faculty Members:

- "Research Methodology in Social Sciences", University Level Workshop by Nalin Bharti, C. M. College, Darbhanga, Bihar, October 18, 2014.
- "GI and Bihar", in the UGC sponsored National Seminar on 'Intellectual Property Rights (IPRs) and Bihar by Nalin Bharti, LNMU Darbhanga, Bihar, November 29, 2014.

- "Bihar in the Indo-Nepal Trade Link in the Stakeholder, Consultative Workshop", by Nalin Bharti, A. N. Sinha Institute of Social Studies, Patna.
- "Women in the Informal Economy: Report of the Special Task Force by SEWA" by Nalin Bharti, ADRI Patna, July 16, 2014.
- Strategies to develop Effecive C.S. among the youths of Bihar by Binod Mishra, LNMCBM, Muzaffarpur in collaboration with University of Cambridge.
- Role of Soft Skills for Techers in Classroom Management by Binod Mishra, Santajee Mahavidyalaya, Nagpur.

Short-Term Courses, Training Programmes and Workshops organised

- Financial Awareness Programme, Reserve Bank of India, Patna, November 5, 2014.

6. Centralized Services, Programmes and Units

6.1 Central Library

The Central Library of IIT Patna has become an advanced library in a very short span of time. It has acquired a large collection of books and e-journals and provides excellent services to its users. Central Library caters the information needs of its highly demanding faculty members, research scholars, students as well as staff of the Institute by offering a wide range of knowledge based (and value added) services and products. The Central Library, IIT Patna has a collection of 11159 books till date. During 2014 - 2015, 1119 new books have been added to the Central Library. All books are RFID tagged and duly processed before use or circulation. Within this period Central Library has also subscribed new e-resources in the form of full-text e-journals and e-books to disseminate the requirement of the users. Central Library has procured 06 new e-journal packages namely Annual Reviews, Europhysics Letter, IOP Science, Journal of Material Research, Nature and Allied Journals, Thieme Journals. 02 new e-books collections such as Pearson e-Books collection (Chemistry & Chemical Science) and 378 titles of Wiley e-books are also procured to satisfy the information need of the users of IIT Patna. Being a core member of INDEST-AICTE Consortium Central Library is also getting access of various e-resources from the consortium. Central Library is subscribing thirty six e-journals packages and eight e-books packages in total, which facilitate various knowledge based needs of the users. Central Library is also procuring few popular magazines and six daily news paper of English and Hindi languages.

6.2 Computer Center

IIT Patna has a *state of the art* Computer Center. The Computer Centre has been catering to the computing needs of the entire institute since its inception. The centre provides email, Internet and computation resources round the clock. The Institute webpage is managed and maintained by the centre. The Computer Centre maintains the entire institute campus network including all hostels and guest house. Software for in-house use has been developed by the centre. All software required for general use is made available to its users. The Computer Centre currently has two Scientific Officer and four Junior Technical Superintendents. The centre also provides technical services and support to all members of the Institute. The nature of technical services and support include: 365 X 24 X 7 support services, VPN for remote access, Internet access, Wi-fi (Boys' Hostel), Intranet, Leave portal, online academic module, Examination related services (GATE), Support during student placement, Conference Site Maintenance, Support for training programs organization, Support for student

Gymkhana website for events like Anwesha, Celesta, Reverberance and other extra co-curricular activities, Institute Website and e-mail support, Support for Desktop, Laptop, Printer, network, etc. related issues, CSE department Lab maintenance and support, Library libsys software support, License server support (MATLAB, Mathematica, ANSYS and Tecplot 360 etc.), Support for institute meeting resources like web conferencing, internet access, etc. and Support for procurement of departmental and institute assets (Computer and accessories, LAB, furniture and other infrastructure related items).

The computer center lab is equipped with 63 desktops and it operates from 9:00 AM till 12:00 PM on all seven days. In addition, there are nine UNIX based servers that caters to the students' academic requirements and research purpose. Availability of the servers and resources is ensured with power back up provided by UPS grid. A local area network is catering to the needs of students, faculty and staff. National Knowledge Network (NKN), an initiative by Govt. of India, deployed its infrastructure at IIT Patna and equipped the Computer Center with Internet bandwidth of 1 Gbps for video conferencing, etc. Dedicated NKN link provides for virtual classroom service as well as internet. High speed and uninterrupted internet access is provided across the campus to everyone through multiple ISP leased lines provided by RAILTEL (45 Mbps), Reliance (12 Mbps), BSNL (4 Mbps) and NKN (1000 Mbps).

6.3 Institute Civil, Electrical and Water Works

In our permanent campus at Bihta about 30 km from Patna the construction activities for academic part and residential part of the campus by M/s Sapoorji & Pallaonji Co Ltd, Mumbai under the supervision of NBCC and CPWD, respectively are going on full swing. In the academic part of the campus, the strcutural and concreting works for three academic blocks, one number of tutorial cum lecture hall complex, one number of administrative building, three numbers of workshop and one number of food court have been already completed and subsequently finishing work is going on. Internal approach roads and internal water supply works to all buildings in the academic part of the campus are also in progress. In the residential part of the campus, the strcutural and concreting works for Director's Bungalow, one hostel for students, four numbers of B-type quarters for faculty members, four numbers of D-type quarters for staff members and one number of hospital have been already completed and subsequently finishing work is going on. Internal approach roads, sub-station work for electric supply and internal water supply work to all buildings in the residential part of the campus are also in progress. The Institute is planning to shift to its permanent campus at Bihta.

6.4 Rajbhasha Vibhag

IIT Patna has appointed Mr Sanjay Kumar, Assistant Registrar, as Hindi Officer of the Institute. He has been assigned with the responsibility of implementation of the official language. Its activities include translation of Annual Reports, Annual Accounts, Audit Reports, etc. Different files, forms, registers, service books, health books etc. are being made bilingual. This Institute website is also in the process of being bilingual. September 14 each year is being observed as Hindi Diwas and different Hindi competitions are organized.

6.5 Sponsored Research and Industrial Relations Unit (SRIRU)

Prof. Mayank Tiwari, Associate Professor, Department of Mechanical Engineering is acting as a Co-ordinator, SRIRU. The following projects have been sanctioned by the various agencies during 2014-15:

Sl.N	Name of PI/CoPI	Dept.	Title	Funding Agency	Amt. (In Lakh)
1	Dr. Om Prakash	Mathematics	Mathematics Training and Talent Search Programme	NBHM	4.00
2	Dr. Dinesh Kumar Kotnees	Materials Science & Engg. in association with HASETRI	INTERNATIONAL CONFERENCE ON POLYMERS AND ALLIED MATERIALS (ICPAM 2014)	External funding from corporate sectors, government agencies and registration fees	47.00
3	Dr. Dinesh Kumar Kotnees	Materials Science & Engg. in association with HASETRI	INTERNATIONAL WORKSHOP ON REVERSE ENGINEERING OF RUBBER PRODUCTS (IWRERP 2014)	External funding from corporate sectors, government agencies and registration fees	5.00
4	Dr. Subrata Hait	Civil & Environ. Engg.	Development of Gravity-based Household Filter for Simultaneous Removal of Arsenic and Iron Contamination of Groundwater in Patna District, Bihar, India	Shastri Indo-Canadian Institute	6.00
20	Dr. Anup Kumar Keshri	Materials Science & Engg	Fabrication of Robous Plasma Sprayed Rare Earth Oxide Hydrophobic Coating for the High Temperature and Wear Resistance Applications	SERB(DST)	26.74

21	Prof. Anil K. Bhowmick	Chemistry	From Fundamentals to Applications of Nanoparticle Assemblies	Indo-US	6.84
22	Dr. Utpal Roy	Physics	Coherent control & Interferometry using Bose Einstein Condensate	SERB(DST)	15.24
23	Dr. K.C Ray	Electrical Engg.	Design and Implementation of Novel VLSI Architectures of PRNG for Cryptography Applications	CSIR	4.72
25	Dr. Rishi Raj	Mechanical Engg.	Flow Boiling Heat Transfer in Scalable Nanostructured Micro channels for High Heat Flux Application	SERB(DST)	23.36
26	Dr. Jayakumar Balakrishnan	Physics	Innovation in Science Pursuit for Inspired Research (INSPIRE)	DST	35.00
27	Dr. Avik Samanta	Civil & Environ. Engg.	Seismic Response, Damage and Vulnerability of Structures in Patna for Future Earthquakes	SERB(DST)	21.39
28	Dr. Somnath Roy	Mechanical Engg.	Immersed Boundry Simulation of low Reynolds Number Flow over Oscillating Airfoils	AR&DB	20.40
29	Dr. Naveen Kumar Nishchal	Physics	Frontiers in Modern Optics	SERB(DST)	1.68
30	Dr. Subrata Hait	Civil & Environ. Engg.	Performance Evaluation of Saidpur STP, Patna	IITM	0.20
31	Dr. Naveen Kumar Nishchal	Physics	Conference on Recent Trends in Information Optics & Quantum Optics (IOQO-2014	Others	4.50
32	Dr. Mohd. Kaleem Khan	Mechanical Engg.	Influence of hydrogen content on burst characteristics of Ziracolly-4 cladding tube	DAE	26.65
33	Dr. Rishi Raj (PI)/ Dr. Ajay D. Thakur (Co-PI)	Mechanical Engg./Physics	Performance analysis and improvement of 02 Tonne, 7 kw ammonia based adsorption	New Leaf Dynamic Technologies (P) Ltd	1.55

			refrigerator		
34	Dr. S.S Panda, Dr. Somnath Roy, Dr. Somnath Sarangi	Mechanical Engg.	Comprehensive Integrated Dignostic Study of Clusters in State Bihar, India	Govt. of Bihar	5.40
35	Dr. Rishi Raj (PI)/ Dr. Ajay D. Thakur (Co-PI)	Mechanical Engg./Physics	Contact Angle Goniometer, X-Ray Diffractormeter (XRD) and Field Emission Scanning Electron Microscoper with EDAX for 24 nos of sample characterization	NIT Agartala	0.50
36	Dr. Dinesh Kumar Kotnees	Materials Science & Engg.	Improvement of low temperature performance and room temperature physical properties of elastomers	DENKA, Japan	16.00
38	Dr. Karali Patra	Mechanical Engg.	Soft active dielectric elastomers for human motion-based energy harvesting	DST	41.14
40	Prof. J.N Sinha	Electrical Engg.	"Visvesvaraya PhD scheme for Electronics and IT"	DEIT	561.64
41	Dr. Avik Samanta & Dr. Subrata Hait	Civil & Environ. Engg.	Quality Assurance of Construction Materials of Agricultural College, Kishanganj, Bihar	BSBCCL	4.55
42	Dr. Binod Mishra & Dr. Smriti Singh	Humanities & Social Sciences	Sustainability and Development : Implications of ELT for Individual, Society and Ecology	Others	3.00
44	Dr. K.C Ray	Electrical Engg.	Short Term Course on FPGA Based System Design	Others	2.25
45	Dr. Naveen Kumar Nishchal	Physics	SERC School on "Modern Optics and its applications"	SERB(DST)	17.76
46	Dr. Ashok Singh Sairam	Computer Science & Engg.	Bandwidth estimation and hop-to-hop capacity estimation algorithm(s)	MSPL	2.53

6.6 Training and Placement Cell

Training and Placement Cell (TPC) of the Institute actively engaged in developing relationship between various industrial organizations and employers of technical and scientific manpower. The Placement Cell is engaged in summer internships for the pre-final year and placement activities of the final year B.Tech. and M.Tech. students, who would be completing their degree in May, 2014. The Placement office is fully equipped for the placement procedure at every stage. Arrangements for placement activity are handled by the staff and the student coordinators at the placement office. We are well equipped with conference halls to conduct pre-placement talks and tests; video conferencing facilities; well-furnished air-conditioned rooms for interviews and group discussions and a fully computerized office. The Institute intends to achieve cent percent placement for the graduating students and for which the Cell emphasizes on the developing students' soft skills like verbal communications, personality development and general awareness for better performance in the interview boards. The Cell organized several lectures, workshop on Pre-Placement training and demonstration by experts to the students for the development of these skills.

A training and placement brochure is published by the TPC for circulation to the prospective employers including several private companies, public sector undertakings and government agencies. The summer internship for a period of 8 weeks is compulsory component of all the branches of B.Tech. curricula for pre-final year students. The cell has been actively involved in placement of the final year graduating B.Tech students of second batch admitted in year 2011 and M.Tech. students admitted in year 2013. The campus placement session started in September 2014 with reputed organizations including Indian Navy, Delloitte, Amazon India, Capgemini, Hero Motocorp Ltd, Tata Motors, L&T ECC, TCS Innovation Lab, Flipkart, Tricon Infotech, TCS IT and Snapdeal. Out of 35 M.Tech. students registered for placement, 15 got placed with an average salary of INR 7 lakhs per annum. Out of 97 B.Tech. students registered for placement, 80 have got placed in 30 different companies. A total of 94 offers were made. The highest number of offers to B.Tech. students were made by TCS IT (13), L&T ECC (10), Amazon India (8), Tata Motors (7) followed by TCS Innovation Lab, Snapdeal and Tescra with 6 offers each. The other 23 technological, consultancy and financial companies who recruited our graduates ranged from 1 to 5. The average salary package is INR 9.125 lakhs per annum. At least 6 undergraduate students opted to go for higher studies abroad.

7. Various Activities at IIT Patna

7.1 Foundation Day

On August 6, 2014, IIT Patna completed sixth years since its inception and celebrated its 6th Foundation Day. The occasion was commemorated through a day long celebration with active participation from all the faculty members, staff members and the students. It all started with the inauguration of the blood donation camp by Prof. Arjun Singh, President, Bihar Orthopaedic Association and Head, Orthopaedic Department, Patna Medical College Hospital, Patna. A lecture titled "Introduction to Osteoarthritis" was delivered by Padmashree Prof. R. N. Singh who was the Guest of Honor for the event. The Foundation Day lecture was delivered by the Vice Chancellor of Patna University, Prof. Y. C. Simhadri. The topic for this years Foundation Day Debate was "Will the creation of smart cities improve the human way of life". The sports event which followed post lunch, provided a good chance for students, staff and faculty members to come together and display sportsman spirit and sporting skills.

7.2 Nebula

Indian Institute of Technology Patna celebrated the Fresher's day Nebula 2014, named after the budding star, is where the seniors welcomed the newcomers or future stars with great heart and ensured that they are an integral part of the Institute. Mr. Chanchal Kumar, IAS, Govt. of Bihar was the chief guest who encouraged the freshers to bring glory to the institute and even encouraged the senior students to help freshers to pursue laurels with innovativeness. "A hundred new faces, but a million dreams" was the main motive of the occasion and to develop the bond among the seniors and freshers. The Nebula event was to set the stage for the freshers to showcase their talents with their breathtaking song and dance performances and no stone was left unturned to welcome the freshers. The highlights of the events were the mimicry shows by seniors and skits beautifully demonstrating social evils and finally Mr and Miss freshers set ablaze the stage by their by their walk on the ramp, dance performances and sizzling shows.

Glimpses of Nebula 2014 held at IIT Patna

7.3 Independence Day

Independance Day Celebrations were royal. The arena echoed with patriotic songs and speeches and the heart-warming performance of a street play on the life of a soldier by the freshers was highly appreciated. The event came to its solemn end after certificates were distributed to the Secretaries of the various hostels for performing their duties well.

7.4 Republic Day

Like every year, the Institute celebrated enthusiastically the 66th Republic Day on 26th January, 2015 with great zeal and fervour to commemorate the day when the Constitution of India came into effect. Professor J. N. Sinha, Hon'ble Chief Guest unfurled the National Flag and the National Anthem was played by the students. Subsequently, Hon'ble Chief Guest addressed the audience with encouraging words and emphasized the importance of the day. The festivity of the Republic Day was celebrated through various cultural programme and

events by the students showing their devotion towards the nation. The ceremony was officially concluded with a patriotic speech and vote of thanks by the Mr. Subhash Pandey, Registrar appreciating the enthusiasm and patriotic zeal of the youth and emphasizing one to become a good citizen to serve nation better.

7.5 Teachers Day

HOSCA celebrated Teachers' Day on the birthday of Dr. S. Radhakrishnan, 5th of September. The evening was celebrated with fervor and gusto. There were melodious performances by the students that harmonized the environment and set the mood. Contributions of Dr. S. Radhakrishnan to the Indian society were discussed. This was followed by a quiz especially designed for the teachers by the students.

7.6 Anwesha 2015

IIT Patna is incomplete without ANWESHA, the Techno-Cultural Festival of IIT Patna. The 6th edition of Anwesha took place from 29th Jan. to 1st of Feb. 2015 and saw a huge crowd and participation from colleges all over India. These 4 days echoed the theme of the festival "Hakuna Matata" meaning "No Worries". The festival was formally inaugurated by Sh. P. K. Shahi, Hon'ble Minister, Government of Bihar. The first night witnessed the opening ceremony and a performance by the Sufi Fusion band of Coke Studio – Swarathma. The pronites of Day 1 featured the much awaited Femina Miss India Campus Princess and Verve – The Fashion Show, judged by Miss India Earth 2013 Miss Shobita Dhulipala. Day 2, began with a lot of excitement and aggressive competition as teams clashed in quizzes and on spot events. But this was all bland in the extravaganza that was awaiting the crowd at night. Syngphony and Heelturn, the singing and dancing competition left not only the participants but also the crowd panting for more as the performances saw a complete spectrum of The Modern Indian Culture from Kathak to Salsa, from Ali Azmat to Taylor Swift. "All the world your stage and all me mere players" was proved by intense competition seen in Theatrix and Maidan-e-Jung (The Street Play Competition). Yet the first three nights although lavish in themselves were just a buildup for what was yet to come. Day 4 and the rock band performance. The stage was set and the crowd ready to hit the right note as Lagori took our breath away bringing to close the 4 day festival etched in our hearts forever.

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Glimpses of Anwesha 2015

7.7 Swacch Bharat Abhiyaan

Swachh Bharat Abhiyan, an initiative of the PMO, was officially started on 2nd October, 2014 in the Institute campus. This campaign was actively participated by the faculty members, staff members and students to clean the streets, roads and infrastructure of the Institute. A pledge was administered by Mr. Subhash Pandey, Registrar for dealing with this societal and sanitation issue and also to generate awareness about sanitation and health education at both individual and higher Institute level. A majority of faculty members, staff members and students present on this occasion assured to strictly adhere to the pledge mission.

7.8 Good Governance Day

The birth anniversary of Shri Atal Bihari Vajpayee, former Prime Minister of India was celebrated as 'Good Governance Day'. On this occasion, a seminar competition was organized entitled "Use of Technology and Innovations in Promoting Good Governance". Faculty members, staff members

and students actively participated in this event with zeal and enthusiasm. Prizes were also given to the best presentations based on oratory skills and content.

7.9 Conferences, Seminars and Workshops

A number of distinguished visitors from within the country as well as abroad presented their work in the Institute seminar series. A number of workshops and conferences were organized at IIT Patna in the financial year 2014-15. The details of some of them are provided below:

International Worksop on Reverse Engineering of Rubber Products (IWRERP 2014) and International Conference on Polymer and Allied Materials (ICPAM 2014)

Department of Materials Science and Engineering, IIT Patna in association with Hari Shankar Singhania Elastomer and Tyre Research Institute (HASETRI) organised an International Workshop on Reverse Engineering of Rubber Products - Concepts, Tools and Techniques from May 28-29, 2014 at Hotel Maurya, Patna. Dr. Dinesh K. Kotnees, Assistant Professor, Dept of MSE co-ordinated the workshop along with Prof. Anil K. Bhowmick, Former Director. Interesting sessions on Polymer Composites and Nanocomposites, Polymer Blends, Polymer Processing, Carbon and Smart Materials, Advenced Analytical Characterization Techniques, Tyre, Sustainability, Recycling and Regulation, New Polymers and Filters, Strategic Materials, Textile Materials, Rubber Products, Polymer Synthesis and Characterization and Modeling and Simulation attracted the attention of participants and created interactive discussions. Forty eminent participants from various sectors of corporate divisions, industry, academics across the globe attended the workshop which was grand success.

International Conference on Polymers and Allied Materials (ICPAM 2014)

Department of Materials Science and Engineering, IIT Patna in association with Hari Shankar Singhania Elastomer and Tyre Research Institute (HASETRI) organised an International Conference on Polymers and Allied Materials (ICPAM 2014) held on May 30-31, 2014 at Hotel Maurya, Patna. Dr. Dinesh K. Kotnees, Assistant Professor, Dept of MSE was the convener of the conference and Prof. Anil K. Bhowmick, Former Director was the chairman of the

conference. There were interesting sessions on Polymer Composites and Nanocomposites, Polymer Blends, Polymer Processing, Carbon and Smart Materials, Advenced Analytical Characterization Techniques, Tyre, Sustainability, Recycling and Regulation, New Polymers and Filters, Strategic Materials, Textile Materials, Rubber Products, Polymer Synthesis and Characterization and Modeling and Simulation. The technical part of this conference was composed of approximately 18 invited lectures and 78 contributory lectures. There were eminent speakers and delegates from USA, Germany, Austria, South Korea, Srilanka and Japan.

A group photo of participants at IWRERP 2014

This was followed by an International Conference on Polymers and Allied Materials (ICPAM 2014) held on May 30-31, 2014 at Hotel Maurya, Patna.

Delegates on the Dais at ICPAM 2014

Trends and Innovations in Materials Testing for Academia

Department of Materials Science and Engineering, IIT Patna in association with Zwick/Roell, Germany organized a half day seminar on "Trends and Innovations in Materials Testing for Academia" on January 21, 2015 and held at IIT Patna. Dr. Dinesh K. Kotnees, Assistant Professor, Dept of MSE coordinated the event.

Participants at the half day seminar on Trends and Innovations in Materials Testing for Academia held at IIT Patna

Mini MTTS Programme

Dr. Om Prakash, Assistant Professor, Department of Mathematics organised two weeks' Mini Mathematics Training and Talent Search Programme (Mini MTTS) for undergraduate students of Mathematics, sponsored by National Board of Higher Mathematics during June 9-21, 2014.

Participants of Mini MTTS Programme with the Resource Persons

Conference on Recent Trends in Information Optics & Quantum Optics (IOQO - 2014)

The Department of Physics organized a Conference on Recent Trends in Information Optics & Quantum Optics (IOQO- 2014) during November 7-8, 2014. About 100 delegates from all over the country participated in the two days' technical event. There were two parallel technical sessions comprising 21 invited talks, 17 oral presentations and 27 poster papers. Prof. Rajpal S. Sirohi, Padmashree and former Director IIT Delhi inaugurated the conference and Prof. Kehar Singh, former Emeritus fellow IIT Delhi delivered the keynote address.

Participants of IOQO 2014 during High Tea

7.10 Memorandum of Understanding (MoU) and Agreements

The Institute has signed MoU with following Institutes/Universities during the the last five years:

University of Hartford, USA.
University of Saskatchewan, Canada.
University of Houston, United States of America.
Louisiana State University, USA.
National University of Singapore, Singapore.
New South Wales, Australia.
University of North Texas-Denton, USA.
Ca' Foscari University of Venice, Italy.

7.11 Students Gymkhana

The Students' Gymkhana, which is the students' governing council that consists of representatives elected by the students, organises a plethora of cultural, technical and sports events all-round the year to facilitate a holistic learning experience for the IITP student community.The institute has developed basketball court, volleyball court, badminton court (indoor), cricket pitch, football ground etc. There is also multi-station gymnasium facilities for boys' and girls' in their respective hostels as well as in the Gymkhana building. Coaches of different discipline are hired in order to provide best possible training to the students to improve upon their skills. To promote the co-curricular activities and interests, the gymkhana has many clubs and groups dedicated to the interests of the students.

Round the academic session, Inter-Hall and Inter-Department games were organized in which students participated in maximum number in all sports activities. Girls also took part in various sports activities like Badminton, Table Tennis etc. They also took part in Inter College Football, Inter College Cricket and Inter College Basketball tournament organized by different IITs and other educational institutes.

We also organized a 'Run for a Cause Marathon' along with Inter IIT Sports meet 'Mashal', as a part of first ever pan IIT social initiative, on November 9, 2014 at our permanent campus in

Bihta. This event also marks the commencement of activities in the permanent campus of IIT Patna at Bihta and was a grand success. Our girls basketball team participated in the Indian College Basketball League organized by Basketball Federation of India from November 11-19, 2014 and stood 2nd in position. Ms. Amolika Sinha, a second year B.Tech student was awarded the most promising player of the tournament award.

IIT Patna's students participated in the 50th Inter-IIT Sports Meet'14 held at IIT Bombay from December 12-19, 2014. The contingent included 88 students including 72 boys and 16 girls. They participated in various games and performed well in events like badminton, tennis, table-tennis, basketball, volleyball, football, cricket and athletics. For the first time, IIT Patna took part in women basketball competition. IIT Patna stood 1st in march-past among all 16 IITs. IIT Patna staff team also participated in 22nd Inter IIT Staff Sports Meet-2014, held at IIT Bombay from December 22 to 26, 2014. 18 staff members participated in various games like volleyball, badminton and cricket. Their performance was commendable.

Glimpses of IIT Patna team at the 50th Inter-IIT Sports Meet'14

IIT Patna basketball team participated in the Inter College Basketball Tournament organized by National Institute of Fashion Technology (NIFT) Patna from February 9-11, 2015 and got

1st Place. Our table tennis team also stood first in the Inter College Table Tennis Tournament organized by NIFT Patna from February 9-11, 2015. In the Inter College Football Tournament organized by Birla Institute of Technology (BIT) Patna from March 13-15, 2015, IIT Patna's football team stood in 2nd position.

8. Statistical Information

8.1 (A) Admission to Undergraduate Students

Admission to B.Tech. at IIT Patna were made through Joint Entrance Examination held in June, 2014. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2014-15 is given below:

Students admitted through JEE 2013 in IIT Patna:

Course	Gen	OBC	PD	SC	ST	Grand Total
Computer Science & Engineering	24	13	**0**	6	4	47
Electrical Engineering	24	12	**0**	7	4	47
Mechanical Engineering	21	14	**2**	7	3	47
Chemical Science and Technology	10	6	**1**	3	2	22
Civil and Infrastructure Engineering	11	6	**0**	3	2	22
	90	51	3	26	15	185

Branch-wise list of students who enrolled for B.Tech at IIT Patna for the academic session 2014-15 is given below:

(I) Computer Science & Engineering:

Sl No.	Roll No.	Name of Student	Gender	Category
1	1401CS01	ABHINAY PALADUGU	MALE	GE

2	1401CS02	ABHISHEK JAISWAL	MALE	OBC
3	1401CS04	AMAN PRAKASH	MALE	SC
4	1401CS05	AWANISH KUMAR DAS	MALE	SC
5	1401CS06	BADETI SATHYAPRAKASH	MALE	OBC
6	1401CS07	BHUKYA KOUSHIK RAJ	MALE	ST
7	1401CS08	BORA RAGHU RAM REDDY	MALE	GE
8	1401CS09	BORA UDAY	MALE	SC
9	1401CS10	BOREDDY VISHNUKANTH REDDY	MALE	GE
10	1401CS11	BUSIREDDY GANESH REDDY	MALE	GE
11	1401CS12	CHINNAPUREDDY VINILESWAR REDDY	MALE	GE
12	1401CS13	CHIRAG SONI	MALE	GE
13	1401CS14	EDITHAL S S VIGNESH	MALE	GE
14	1401CS15	GAGAN KUMAR	MALE	OBC
15	1401CS16	GENOM LEGO	MALE	ST
16	1401CS17	GOPAL KUMAR	MALE	GE
17	1401CS18	HINGE MITHILESH SUSHEEL	MALE	GE
18	1401CS19	JITENDRA KUMAR	MALE	SC
19	1401CS20	KAVURI KAVYA	FEMALE	GE
20	1401CS21	KONDA TAPASYA	MALE	OBC
21	1401CS22	LAXMAN KUMAR PRABHAKAR	MALE	OBC
22	1401CS24	MADDU JEEVAN SURYA	MALE	GE
23	1401CS25	MAYANK GOYAL	MALE	GE
24	1401CS26	MIRYALA SAISREE REDDY	FEMALE	GE
25	1401CS27	MRITUNJAY KUMAR	MALE	OBC
26	1401CS28	NAMAN AGARWAL	MALE	GE
27	1401CS29	NEWTON KUMAR	MALE	OBC
28	1401CS30	PATIL SHREYAS SUDESH	MALE	ST
29	1401CS31	POGIRI VENKATA SAI CHAKRADHAR	MALE	OBC
30	1401CS32	POOJARI VENKATESH	MALE	ST
31	1401CS33	PRALAY RAMTEKE	MALE	SC
32	1401CS34	PRANJALI KOKARE	FEMALE	GE
33	1401CS35	PRASHANT	MALE	GE
34	1401CS36	PRATEEK SHARMA	MALE	GE
35	1401CS37	PRINCE RAHEJA	MALE	GE

36	1401CS38	RAJDEEP GUPTA	MALE	GE
37	1401CS39	RAPETI SUBHANG	MALE	OBC
38	1401CS40	ROHAN RATHI	MALE	OBC
39	1401CS41	S SUBRAMANIYAM	MALE	GE
40	1401CS42	SANTE KUSHAL SANTHOSH	MALE	OBC
41	1401CS43	SHENDURWADKAR D DIGAMBARRAO	MALE	GE
42	1401CS44	SHIFONA GARG	FEMALE	GE
43	1401CS45	SHUBHAM KUMAR VERMA	MALE	SC
44	1401CS46	SUSHANT KUMAR	MALE	OBC
45	1401CS47	TANMAY DAS	MALE	GE
46	1401CS48	VIPIN MAVI	MALE	OBC
47	1401CS49	VISHAL SOLANKI	MALE	GE

(II) Electrical Engineering:

Sl No.	Roll No.	Name of Student	Gender	Category
1	1401EE01	AAKHYA SINGH	FEMALE	GE
2	1401EE02	ABHISHEK KUMAR	MALE	GE
3	1401EE03	ABHISHEK MEENA	MALE	ST
4	1401EE04	AKASH GOYAL	MALE	SC
5	1401EE05	ALPESH RAJESH MORE	MALE	SC
6	1401EE06	AMAN OMKAR	MALE	OBC
7	1401EE07	ANUPAM DAS	MALE	GE
8	1401EE08	ASHUTOSH PRASAD	MALE	OBC
9	1401EE09	AYUSH BAKLIWAL	MALE	GE
10	1401EE10	AYUSH KUMAR	MALE	GE
11	1401EE11	BANDHU SAI KRISHNA KANTH	MALE	OBC
12	1401EE12	CHETHIREDDY PRANAY TEJA REDDY	MALE	GE
13	1401EE14	DESHRAJ MEENA	MALE	ST
14	1401EE15	DURGESH KUMAR	MALE	SC
15	1401EE17	HATIM KANCHWALA	MALE	GE
16	1401EE18	HET RAM MEENA	MALE	ST
17	1401EE19	LOKESH KUMAR RAIGER	MALE	SC
18	1401EE20	MADUGULA MANISH	MALE	GE

19	1401EE21	MAYANK KUMAR	MALE	SC
20	1401EE22	MOGALIPUVVU PRANEETH	MALE	GE
21	1401EE23	MOHD ASAD	MALE	OBC
22	1401EE24	NAHAS ROSHAN K	MALE	GE
23	1401EE25	NIMMALA PAVAN KALYAN	MALE	GE
24	1401EE26	PARAS MANI	MALE	OBC
25	1401EE27	PRABHAT KUMAR MADDHESHIYA	MALE	OBC
26	1401EE28	PRANJAL MISHRA	MALE	GE
27	1401EE29	PRITESH RAMAN	MALE	GE
28	1401EE30	RAKESH KUMAR BIJARNIYA	MALE	OBC
29	1401EE31	RAKESH SARKAR	MALE	SC
30	1401EE32	RAM NIWAS SAINI	MALE	OBC
31	1401EE33	RANGUDU SRICHARAN	MALE	GE
32	1401EE34	RAUNAK SENGUPTA	MALE	GE
33	1401EE35	RITU MEENA	FEMALE	ST
34	1401EE36	SACHIN KUMAR	MALE	OBC
35	1401EE37	SAMEER PURWAR	MALE	GE
36	1401EE38	SANKET NAGSHETTI	MALE	GE
37	1401EE39	SHAILESH KUMAR KASHYAP	MALE	OBC
38	1401EE40	SHIVAM SHARMA	MALE	OBC
39	1401EE41	SHOBHIT BHATNAGAR	MALE	GE
40	1401EE42	SHUBHAM JAIN	MALE	GE
41	1401EE43	SNEHAN SHOURYA	MALE	GE
42	1401EE44	SOMIL JAIN	MALE	GE
43	1401EE46	THIRUMALA REDDY MANOJ REDDY	MALE	GE
44	1401EE47	VINEET MEHTA	MALE	GE
45	1401EE48	VIVEK KUMAR	MALE	OBC
46	1401EE49	VOORE MANOJ KUMAR	MALE	GE
47	1401EE50	YASH UMARIA	MALE	SC

(III) Mechanical Engineering:

Sl No.	Roll No.	Name of Student	Gender	Category
1	1401ME01	ADAPAKA SUSRUT	MALE	SC

2	1401ME02	ALAN AIPE	MALE	GE
3	1401ME03	AMIT KUMAR	MALE	OBC
4	1401ME05	ANURAG MEENA	MALE	ST
5	1401ME06	ASHISH KUMAR	MALE	SC
6	1401ME07	B BRIJESH REDDY	MALE	GE
7	1401ME08	BHAWANA PUSHKAR	FEMALE	SC
8	1401ME09	CHAITANYA KUMAR	MALE	OBC
9	1401ME11	DEEPANWAY GHOSAL	MALE	GE
10	1401ME12	DHARMESH KUMAR DEWANGAN	MALE	GE
11	1401ME13	DIVYANSHU	MALE	OBC
12	1401ME14	GYANESH RAJPUT	MALE	OBC
13	1401ME15	HAROON RASHID	MALE	OBC
14	1401ME16	HARSHIT AGRAWAL	MALE	GE
15	1401ME17	HITESH GOLCHHA	MALE	GE
16	1401ME18	JAINENDRA GAUTAM	MALE	SC
17	1401ME19	JATIN KALRA	MALE	GE
18	1401ME20	KARTIK AGRAWAL	MALE	GE
19	1401ME21	KILLI SANTHOSH NAIDU	MALE	OBC
20	1401ME23	KUNCHE YASWANTH	MALE	SC
21	1401ME24	KUSHAGRA JAIN	MALE	GE
22	1401ME25	MADDIPATLA GANESH	MALE	GE PD
23	1401ME26	MANEESH MEENA	MALE	ST
24	1401ME27	MD ZEESHAN ALAM	MALE	GE
25	1401ME28	MOHIT SHARMA	MALE	GE
26	1401ME29	PONNANA SAI KIRAN	MALE	OBC
27	1401ME30	RAHUL MEENA	MALE	ST
28	1401ME31	RAHUL SHARMA	MALE	GE
29	1401ME32	RAJNESH RAJPUT	MALE	OBC
30	1401ME33	RAVI ANAND	MALE	SC
31	1401ME34	RAVI KUMAR	MALE	OBC
32	1401ME35	S.VIJAY ANAND	MALE	OBC
33	1401ME36	SAI MANISH B	MALE	GE
34	1401ME37	SARTHAK RASTOGI	MALE	GE
35	1401ME38	SATYABRATA SATYAJIT SAHOO	MALE	GE

36	1401ME39	SHASHANK KUMAR	MALE	OBC
37	1401ME40	SHEFALI DAS	FEMALE	GE
38	1401ME41	SHIV JEE	MALE	OBC
39	1401ME42	SHIVAM SHARMA	MALE	GE
40	1401ME44	SHUBHAM SHUKLA	MALE	GE
41	1401ME45	SOURABH JAIN	MALE	GE
42	1401ME46	TADI SANTH KUMAR	MALE	SC
43	1401ME47	THATI SANTHOSH KUMAR	MALE	OBC
44	1401ME48	VENKATA KISHORE BABU POLISETTY	MALE	GE
45	1401ME49	VISHAL SINGH	MALE	GE
46	1401ME50	YERUVA BALADINESH	MALE	GEPD
47	1401ME51	ZENIN EASA P	MALE	OBC

(IV) Civil and Infrastructure Engineering:

Sl No.	Roll No.	Name of Student	Gender	Category
1	1401CE02	ABHINAV KUMAR	MALE	OBC
2	1401CE03	ABHISHEK MISHRA	MALE	GE
3	1401CE04	ABHISHEK SOURABH	MALE	OBC
4	1401CE05	AKSHAY PATNI	MALE	GE
5	1401CE06	AMIT PRATAP SINGH RAJAWAT	MALE	GE
6	1401CE07	ANIL	MALE	OBC
7	1401CE08	ANIRUDH CHAUHAN	MALE	GE
8	1401CE10	DEVENDRA KUMAR MEENA	MALE	ST
9	1401CE11	DHONGADE RITESH JANARDHAN	MALE	SC
10	1401CE12	GAURAV	MALE	OBC
11	1401CE13	GESU INDIA	FEMALE	GE
12	1401CE14	KANHAIYA KUMAR MANDAL	MALE	ST
13	1401CE15	NANNAPANENI SRIMAAN	MALE	GE
14	1401CE16	NEHA VERMA	FEMALE	GE
15	1401CE17	PATEL SHUBHASH INDRABHAN	MALE	GE
16	1401CE18	PRATYAY AMRIT	MALE	SC
17	1401CE19	RAHUL KUMAR	MALE	SC
18	1401CE20	S PRANAV	MALE	GE

19	1401CE21	S.SURESH RAJA	MALE	OBC
20	1401CE22	SHUBHAM	MALE	GE
21	1401CE23	SUNIL KUMAR	MALE	OBC
22	1401CE25	YASHODEEP	MALE	GE

(V) Chemical Science and Technology:

Sl No.	Roll No.	Name of Student	Gender	Category
1	1401CH01	AJAGEKAR AKSHAY SUKUMAR	MALE	GE
2	1401CH02	AMIT KUMAR	MALE	OBC
3	1401CH03	ANKIT CHAHAL	MALE	OBC
4	1401CH04	APOORVA SHRIVASTAVA	FEMALE	GE
5	1401CH05	BHAGYASHRI VERMA	FEMALE	OBC
6	1401CH06	CHARU MEENA	FEMALE	ST
7	1401CH07	DARAPU THARAKESHWARA REDDY	MALE	OBC
8	1401CH08	DEEKSHA VERMA	FEMALE	SC
9	1401CH10	LAKHAN AGGRAWAL	MALE	OBC
10	1401CH11	MADDU AAKASH SASTRI	MALE	SC
11	1401CH12	MAYANK TIWARI	MALE	GE
12	1401CH13	MUKESH KUMAR	MALE	OBC PD
13	1401CH14	MUKESH KUMAR BHEEL	MALE	ST
14	1401CH15	NIDHI GARG	FEMALE	GE
15	1401CH16	PRANJALI SHARMA	FEMALE	GE
16	1401CH17	PULAGAM SAI TEJA	MALE	GE
17	1401CH18	RISHABH SINGHAL	MALE	GE
18	1401CH19	SATISH GUPTA	MALE	GE
19	1401CH20	SAURABH KUMAR	MALE	OBC
20	1401CH22	SHIVAM KUMAR SUTRAKAR	MALE	SC
21	1401CH24	UTKARSH SINGH	MALE	GE
22	1401CH25	VISHVESH NARAIN RAI	MALE	GE

8.1 (B) Admission to Postgraduate Students

Admission to M.Tech Courses at IIT Patna were made through GATE score (70% weightage) and Personal Interview (30% weightage) in May, 2014. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2014-15 is given below:

Students admitted in M.Tech in 2014-15 in IIT Patna:

Course	GEN	OBC	PD	SC	ST	Grand Total
Civil & Infrastructure Engineering	6	5	0	2	1	14
Communication System & Engineering	8	5	1	2	1	17
Computer Science & Engineering	6	4	1	2	0	13
Material Science & Engineering	7	4	0	0	0	11
Mathematics & Computing	2	6	0	2	0	10
Mechanical Engineering	4	4	0	1	0	9
Mechatronics	5	4	1	2	0	12
Nanoscience and Technology	4	5	0	1	1	11
Grand Total	**42**	**37**	**3**	**12**	**3**	**97**

Branch-wise list of students who enrolled for M.Tech at IIT Patna for the academic session 2014-15 is given below:

(I) Civil & Infrastructure Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411CE01	ANKURITA NATH	F	OBC
2	1411CE02	INDRAMOHAN	M	SC
3	1411CE03	ISHU KUMAR	M	GEN
4	1411CE04	JOHNEO PASI	M	ST
5	1411CE05	NAVLESH KUMAR	M	GEN
6	1411CE06	NILAMANI PRAYAG CHAND BEHERA	M	SC
7	1411CE07	PRANJUL PANDEY	M	GEN

8	1411CE08	RAVI KANTH SRIWASTAV	M	GEN
9	1411CE09	RAVISHEK	M	OBC
10	1411CE10	SAURABH KUMAR	M	OBC
11	1411CE14	SHAILENDRA KUMAR SINGH	M	GEN
12	1411CE11	SOMYA SHRIVASTAVA	F	GEN
13	1411CE12	SOURAV ANAND	M	OBC
14	1411CE13	UTTAM KUMAR	M	OBC

(II) Communication System & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411EE01	ABUL MUSA MUSTAFA RAHMANI	M	GEN
2	1411EE02	ADITI PRASAD	F	GEN
3	1411EE03	ANUPAM KUMAR JHA	M	GEN
4	1411EE04	ARPIT AGARWAL	M	GEN/PD
5	1411EE05	ASHUTOSH CHANDRA PAL	M	OBC
6	1411EE06	BHAWANA PARATE	F	ST
7	1411EE07	CHANDAN KUMAR SINGH	M	GEN
8	1411EE08	KOPAL DWIVEDI	F	GEN
9	1411EE09	KRISHNA KANTH YENUMULA	M	OBC
10	1411EE10	KUMARI PRIYANKA	F	SC
11	1411EE11	KUNAL KUMAR	M	GEN
12	1411EE12	MADHUSUDAN KUMAR SINHA	M	OBC
13	1411EE13	MAYUKH ROY CHOWDHURY	M	GEN
14	1411EE14	NARENDRA PATEL	M	OBC
15	1411EE15	NISHANT BHARTI	M	SC
16	1411EE16	NITHIN BABU	M	GEN
17	1411EE17	OM PRAKASH PAL	M	OBC

(III) Computer Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411CS01	ANKIT MAHESHWARI	M	GEN
2	1411CS02	ANUJ KUMAR	M	GEN
3	1411CS03	BASANT KUMAR JHA	M	GEN
4	1411CS04	DIPAWESH RAJENDRA PAWAR	M	OBC
5	1411CS05	HARSHITA GOSWAMI	F	OBC
6	1411CS06	JAYANT VYAS	M	GEN/PD
7	1411CS07	MANISH BHANU	M	GEN
8	1411CS08	NAVNEET KISHORE KUNAL	M	OBC
9	1411CS09	PRETI KUMARI	F	SC
10	1411CS10	RAVI KANT VERMA	M	OBC
11	1411CS11	RAVI SHARMA	M	GEN
12	1411CS12	SUBRATA DAS	M	SC
13	1411CS13	VARTIKA TEWARI	F	GEN

(IV) Material Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411MS01	AMIT KUMAR	M	GEN
2	1411MS02	ANIL KUMAR	M	OBC
3	1411MS03	MOHD SHARIB	M	OBC
4	1411MS04	NITISH KUMAR	M	OBC
5	1411MS05	NIWAS KUMAR	M	OBC
6	1411MS06	PIYUSH	M	GEN
7	1411MS07	RISHI KUMAR GUPTA	M	GEN
8	1411MS08	RISHU KUMAR	M	GEN
9	1411MS09	SUDHANSHU	M	GEN
10	1411MS10	TARUN KUMAR GAYEN	M	GEN
11	1411MS11	YASHANSHU DIXIT	M	GEN

(V) Mathematics & Computing:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411MC01	ABDUS SAMAD	M	GEN
2	1411MC02	AMIT KUMAR	M	GEN
3	1411MC03	ARINDAM SADHUKHAN	M	OBC
4	1411MC04	CHANDRAKANT	M	OBC
5	1411MC05	DANISH ALI P	M	OBC
6	1411MC06	DEEPAK KUMAR	M	OBC
7	1411MC07	PINTU KUMAR RAM	M	SC
8	1411MC08	PIYUSH KUMAR	M	OBC
9	1411MC09	PRACHETA SAHOO	F	OBC
10	1411MC10	SHIKHA SINGH	F	SC

(VI) Mechanical Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411ME01	BHOLE SANKET ASHOK	M	OBC
2	1411ME02	BIKASH RANJAN SINGH	M	GEN
3	1411ME03	DEEP SINGH THAKUR	M	GEN
4	1411ME04	ISRAR AHMAD	M	GEN
5	1411ME06	NIRBHAY KUMAR	M	GEN
6	1411ME07	PRABHAKAR	M	OBC
7	1411ME08	SOMNATH SHANKAR GORE	M	SC
8	1411ME10	UDAY KUMAR SINGH	M	OBC
9	1411ME09	UMESH KUMAR	M	OBC

(VII) Mechatronics:

Sl No.	Roll No	Name of Candidate	Gender	Category

1	1411MT01	ABHISHEK SAINI	M	OBC
2	1411MT02	ATUL SINGH	M	OBC
3	1411MT03	AVINASH KUMAR	M	GEN
4	1411MT04	KAUSHAL KISHORE	M	OBC
5	1411MT05	KRISHNA KANHAIYA	M	GEN
6	1411MT06	LLEWELLYN GRENOLD LOY DSA	M	GEN
7	1411MT07	NOOPUR DILIP JAMNIKAR	F	OBC
8	1411MT08	PATEL AKASHKUMAR AMBALAL	M	GEN
9	1411MT09	PRITEEM RANJAN BEHERA	M	SC
10	1411MT10	RAHUL KUMAR SINGH	M	GEN
11	1411MT11	VEER AMOL MOTINATH	M	OBC/PD
12	1411MT12	VIVEK SINGH	M	SC

(VIII) Nanoscience & Technology:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1411NT01	ADITYA RAJ SINGH	M	OBC
2	1411NT02	AMIT KUMAR TAGORE	M	OBC
3	1411NT03	ANIL BABARAO RINGNE	M	ST
4	1411NT04	KUMAR ANAND	M	OBC
5	1411NT05	NISHIT RANJAN	M	GEN
6	1411NT06	PUCHAKATLA VENKATA SUBBAIAH	M	OBC
7	1411NT07	RAVI SHANKAR KUMAR MISHRA	M	GEN
8	1411NT08	RINKAL KANANI	F	GEN
9	1411NT11	SONU	F	GEN
10	1411NT09	UPASANA SAHU	F	OBC
11	1411NT10	VIVEK SINGH	M	SC

8.2 Students Awarded merit-cum-means (MCM) Scholarship

Under the Merit-Cum-Means (MCM) scheme, the following benefits are provided to the students:

(a) **For General & OBC category students**: Rs. 1,000/- per month for two semesters (8 months in a year) and Free Tuition Fee.

(b) **For SC & ST category students**: Free Messing (Dues of only basic menu), Exemption from Hostel Room Rent, Pocket allowance of Rs. 250/- per month.

Provided below are the details of the MCM scholarships awarded during FY 2014-15:

Batch	GEN+OBC	SC+ST	Total
2011	21	15	36
2012	23	04	27
2013	34	17	51
2014	35	12	47
Total	113	48	161

The following 161 undergraduate students (B.Tech. Programme) were selected for the award of the Merit-Cum-Means (MCM) scholarship in the academic year 2014-15 by the Institute:

Sl. No.	Name	Roll No.
1	THOTA CHAITANYA K PHANI	1101EE33
2	KANDULA SRIKANTH REDDY	1101CS19
3	ANKIT CHAKRABORTY	1101ME03
4	SHAHIL PUSARAL	1101CS33
5	AAKASH TRIPATHI	1101ME01
6	Y GOKULNATH REDDY	1101EE40
7	THOGARU SAI KRISHNA	1101ME34
8	DEVENDER VERMA	1101CS13
9	NARAVA CHANDRA KIRAN	1101CS24

10	MANISH GARG	1101CS39
11	PRIYAM AGARWAL	1101ME21
12	TAPENDER SINGH YADAV	1101CS34
13	SACHIN KUMAR	1101CS29
14	MUKUL KUMAR	1101ME18
15	MANISH KUMAR JAISWAL	1101ME16
16	K SAI AKHIL REDDY	1101EE11
17	KUNDAN KUMAR	1101CS23
18	SHASHANK KUSHWAHA	1101ME27
19	ASSETI VEERA NAGA SRI HARSHA	1101EE06
20	CHANDRA MOHAN RAO PINNINTI	1101CS11
21	PRANAV SANJAY TADLA	1101ME33
22	KARAN KUMAR	1101CS20
23	AKSHAY VERMA	1101CS04
24	RAVI KUMAR MEENA	1101ME22
25	PRASHANT SHAW	1101CS26
26	ANKIT KUMAR	1101ME04
27	BANTULAL MEENA	1101EE07
28	TUSHAR CHAVAN	1101CS36
29	RAJESH M SHEDOLKAR	1101CS28
30	MAYANK CHAKARWARTI	1101EE20
31	SURENDRA MEENA	1101EE32
32	BIJENDRA MEENA	1101ME10
33	AGRESH KUMAR	1101EE03
34	DHEERENDRA MEENA	1101CS14
35	VICKY KUMAR	1001ME38
36	HARNA SINGH	1001EE13
37	SAYAN CHAKRABORTY	1201EE32
38	ANUBHAV JOSHI	1201CS03
39	OM PRAKASH CHAURASIA	1201CS42
40	VISHAL CHAURASIA	1201ME37
41	SARNADAUTI BRAHMA	1201EE31
42	VITTHAL PANDEY	1201ME38
43	RAJU GUPTA	1201ME22

44	DEVANSHU GANATRA	1201ME08
45	GURPINDER SINGH RANDHAWA	1201CS14
46	RAGHAV RASTOGI	1201EE28
47	SATYANSHU SHUKLA	1201CS31
48	YOGESH PATEL	1201CS39
49	MAYANK AGGARWAL	1201EE22
50	VIKESH	1201EE39
51	CHERUPALLY SAIRAM	1201CS09
52	ASHISH BHUKER	1201CS06
53	PRIT RANJAN KUMAR	1201ME21
54	DEEP SURESH THAKKAR	1201ME33
55	ABHILASH KUMAR	1201EE01
56	ABHISHEK KUMAR GUPTA	1201ME07
57	DIVYANSH KUMAR	1201EE12
58	HUMA FARHEEN	1201CS16
59	K SREE HARSHA	1201ME14
60	VINAY KUMAR	1201CS38
61	RINKU MEENA	1201EE30
62	HUKAMI MEENA	1201CS15
63	CHOUTI ROSELEEN	1101CS12
64	MAYANK ARYA	1301CS28
65	ANKIT KUMAR	1301CS10
66	RAVI SONAM	1301CS37
67	SUNNY NARAYAN	1301CS43
68	K. TEJRAM	1301CS22
69	VINAY KUMAR YADAV	1301CS45
70	J. AJAY REDDY	1301CE11
71	KUMAR GAURAV	1301CE12
72	NITESH KUMAR	1301ME30
73	ANKIT CHOUDHARY	1301CS53
74	KSHITIJ KUMAR CHOUDHARY	1301ME23
75	AYUSH GARG	1301CE55
76	MULAY GANESH ANIL	1301EE19
77	SAGAR KUMAR VERMA	1301CS39

78	RAMAYAN KUMAR	1301CS36
79	RAJ KISHOR RANJAN KUMAR	1301CS35
80	DIVYA GARG	1301CH09
81	ABHINAV KUMAR DAS	1301ME02
82	RUSTAM KUMAR	1301EE31
83	BATHINA V MSR KRISHNA BABU	1301EE07
84	AMAN PRAKASH SINGH	1301EE02
85	ALOK PATWAL	1301CS07
86	ABHISHEK BHAWSAR	1301CH02
87	DEEPAK KUMAR	1301EE09
88	HIMANSHU GARG	1301CS20
89	MOHAMMED SHIYAS PC	1301EE18
90	SAURABH KUMAR GUPTA	1301ME41
91	SWAPNIL JHAWAR	1301EE38
92	YEWALE AKASH DILIP	1301CE22
93	JATIN SINGH	1301CE10
94	SHIVAM YADAV	1301CE21
95	AJAY SHARMA	1301CH04
96	V. SAI KUMAR	1301EE43
97	KUNAL KANOI	1301ME24
98	ANKITA SINGH	1301EE03
99	RAJAN KUMAR	1301EE24
100	PADMA RAM MEG	1301CS30
101	RAKESH PODDER	1301EE26
102	SANDIP MANDAL	1301CS40
103	MADANMOHAN BAIRWA	1301EE14
104	SAURAV VERMA	1301CE20
105	RINKU MEENA	1301EE29
106	PRASHANT PARIHAR	1301CH14
107	SIYA RAM MEENA	1301EE36
108	ASHUTOSH SINGH	1301CE03
109	GUGULOTH MAHENDER	1301CH10
110	KULDEEP MEENA	1301CS24
111	L.SUNIL NAIK	1301ME26

112	ADITYA MEENA	1301CH03
113	M.G. NAVEEN KUMAR	1301CS29
114	HIMANSHU PARMAR	1301CS21
115	MADIPATLA GANESH	1401ME25
116	VOORE MANOJ KUMAR	1401EE49
117	CH PRANAY TEJA REDDY	1401EE12
118	ALAN AIPE	1401ME02
119	P VENKATA KISHORE BABU	1401ME48
120	YERUVA BALADINESH	1401ME50
121	RAJDEEP GUPTA	1401CS38
122	KILLI SANTHOSH NAIDU	1401ME21
123	SAURABH KUMAR	1401CH20
124	DARAPU T REDDY	1401CH07
125	B BRIJESH REDDY	1401ME07
126	MOHIT SHARMA	1401ME28
127	JATIN KALRA	1401ME19
128	LAKHAN AGGARWAL	1401CH10
129	AKSHAY PATNI	1401CE05
130	MAYANK TIWARI	1401CH12
131	ABHISHEK JAISWAL	1401CS02
132	S VIJAY ANAND	1401ME35
133	SHUBASH INDRABHAM PATEL	1401CE17
134	NANNAPANENI SRIMAN	1401CE15
135	AMAN OMKAR	1401EE06
136	ANKIT CHAHAL	1401CH03
137	SHUBHAM SHUKLA	1401ME44
138	SAI MANISH B	1401ME36
139	SATISH GUPTA	1401CH19
140	VIPIN MAVI	1401CS48
141	CHIRAG SONI	1401CS13
142	MOHD ASAD	1401EE23
143	VISHVESH NARAIN RAI	1401CH25
144	MIRIYALA SAISREE REDDY	14701CS26
145	POGIRI V S CHAKRADHAR	1401CS31

146	PONNANA SAI KIRAN	1401ME29
147	HARSHIT AGRAWAL	1401ME16
148	RAKESH KUMAR BIJARNIYA	1401EE30
149	SHIV JEE	1401ME41
150	DURGSEH KUMAR	1401EE15
151	TADI SANTH KUMAR	1401ME46
152	P VENKATESH	1401CS32
153	AMAN PRAKASH	1401CS04
154	AKASH GOYAL	1401EE04
155	M AAKASH SASTRI	1401CH11
156	DESHRAJ MEENA	1401EE14
157	SHIVAM KUMAR SUTRAKAR	1401CH22
158	ABHISHEK MEENA	1401EE03
159	ALPESH RAJESH MORE	1401EE05
160	RITU MEENA	1401EE35
161	ASHISH KUMAR	1401ME06

8.3 Students Enrolled in Undergraduate Courses

The Table below gives the total number of students in B.Tech. course (Upto May 2015):

Batch	Gen	ST	SC	OBC	PD	Total
2009	1	0	0	1	0	2
2010	0	1	2	0	0	3
2011	52	14	17	32	0	115
2012	57	9	17	33	2 (Gen)	118
2013	84	16	27	49	3 (2 Gen & 1 OBC)	179
2014	88	15	26	50	3 (2 Gen & 1 OBC)	182

8.4 Statement of Results (Undergraduate)

Following table shows the summary of the results of the undergraduate students at IIT Patna in the year April 2014 to March 2015:

Years		CSE	EE	ME	CE	CH	All Dept.
4th Year	Total	39	39	37	00	00	115
	Pass	39	34	36	00	00	109
	Fail	00	05	01	00	00	06
3rd Year	Total	45	38	35	00	00	118
	Pass	44	35	32	00	00	111
	Fail	01	03	03	00	00	07
2nd Year	Total	55	42	46	20	17	180
	Pass	53	42	39	18	16	168
	Fail	02	00	07	02	01	12
1st Year	Total	46	46	48	20	22	182
	Pass	41	45	46	18	21	171
	Fail	05	01	02	02	01	11
All Years (Registered)	Total	185	165	166	40	39	595
	Pass	177	156	153	36	37	559
	Fail	08	09	13	04	02	36
On Leave/ Not Registered		02	01	01	00	00	04
Grand Total		187	166	167	40	39	599

Fail means one or more subject failure or CPI less than 05

8.5 Statement of Results (Postgraduate)

Following table shows the summary of the results of the Postgraduate students at IIT Patna in the FY 2014-15:

Years		Civil & Infrastructure Engineering	Computer Science & Engineering	Communication System Engineering	Mathematics & Computing	Mechanical Engineering	Materials & Science Engineering	Mechatronics	Nanoscience & Technology	All Dept.
1st Year	Total	14	13	16	9	8	11	12	11	94
	Pass	14	13	16	9	8	11	09	10	90
	Fail/ Incomplete	0	0	0	0	0	0	03	01	04
2nd Year	Total	0	13	14	10	0	0	12	8	57
	Pass	0	13	14	10	0	0	11	8	56
	Fail/ Incomplete	0	0	0	0	0	0	1	0	1
All Years (Registered)	Total	14	26	30	19	8	11	24	19	151
	Pass	14	26	30	19	8	11	20	18	146
	Fail/ Incomplete	0	0	0	0	0	0	04	1	5
On Leave/Not Registered		0	1	0	0	0	0	0	0	1
Grand Total		14	27	30	19	8	11	24	19	152

Fail means one or more subject failure or CPI less than 06

8.6 List of Research Scholars Enrolled for the PhD Degree

The table below represent the number of research scholars in various departments as of FY 2014-15:

Year of admission			SCHOOLS								TOTAL
		SCHOOL OF ENGINEERING					SCHOOL OF BASIC SCIENCES			SCHOOL OF HUMANITIES AND SOCIAL SCIENCES	
	CSE	EE	ME	MSE	CBC	CIV	PHY	CHE	MA	HSS	
2009-10	00	03	02	00	00	00	02	01	00	03	11
2010-11	03	04	00	00	00	00	00	03	04	02	16
2011-12	06	02	05	01	00	00	04	05	02	00	25
2012-13	01	04	02	01	00	00	03	00	06	03	20
2013-14	11	11	08	03	00	04	06	07	03	03	56
2014-15	07	19	11	02	01	01	05	06	06	01	59
TOTAL	**28**	**43**	**28**	**07**	**01**	**05**	**20**	**22**	**21**	**12**	**187**

8.6 Financial Information

The receipt and payment of the Institute for the year ended March 31, 2015 is provided below:

INDIAN INSTITUTE OF TECHNOLOGY PATNA					
RECEIPTS AND PAYMENTS FOR THE YEAR ENDING 31ST MARCH 2015 (in INR)					
Sl. No.	**Receipts**	**Current Year (2014-15)**	**Sl. No.**	**Payments**	**Current Year (2014-15)**
1	Opening Balance (Bank Balances)	624650924.00	1	Establishment Expenditure	152144240.00
2	Grants Received from Govt. of India (Plan Grant)	2069700000.00	2	Administrative Expenditure	178961131.00
3	Academic receipts (Including Mess Fee)	75018164.00	3	Expenditure on Fixed Assets	1661324675.00
4	Other Income	16744204.00	4	Fellowships/Scholarships	47683872.00
5	Deposits and Advances	178904656.00	5	Other Payment (including Statutory Payments)	61646065.00
6	Interest Received	44060097.00	6	Closing Balance (with current liabilities)**	977234759.00
7	Misc. Receipts (including statutory receipt)	69,916,697.00	-	-	-
	TOTAL	**3078994742.00**		**TOTAL**	**3078994742.00**

Grants-in aid under Plan from MHRD Received	INR 20697.00 Lakhs
Internal Income	INR 1049.42 Lakhs
Expenditure	INR 21017.59 Lakhs

A Glimpse of Bihta Campus