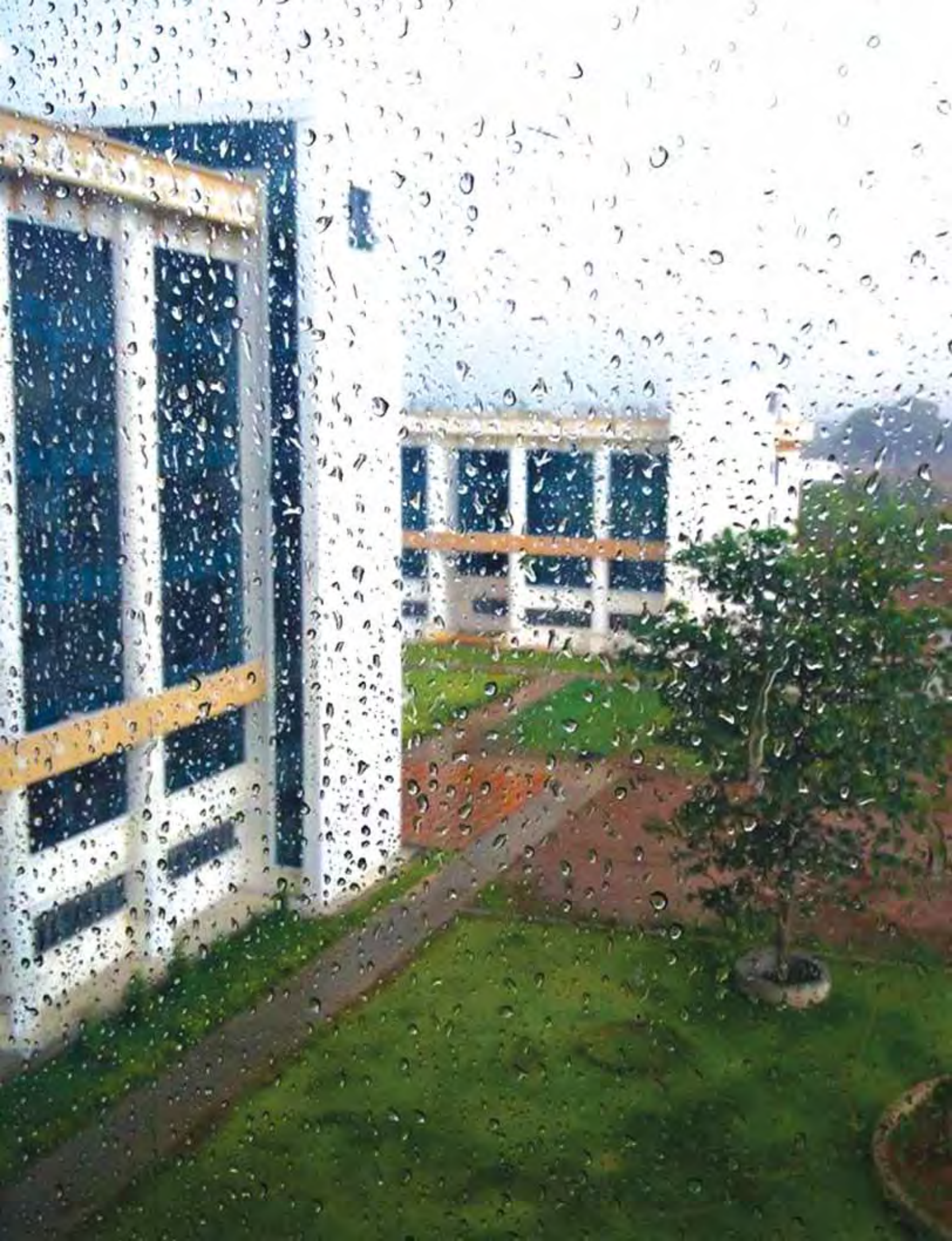
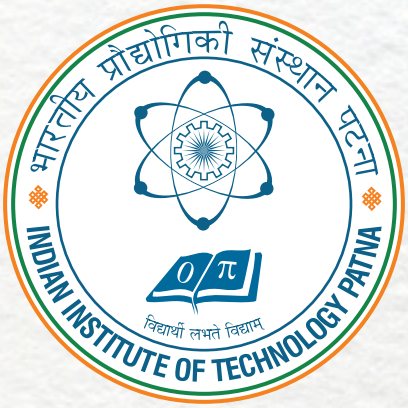


वार्षिक प्रतिवेदन
ANNUAL REPORT
2015-16



भारतीय प्रौद्योगिकी संस्थान पटना
INDIAN INSTITUTE OF TECHNOLOGY PATNA

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From the Director

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 Six Engineering Disciplines: Civil and Environmental Engineering, Chemical and Biochemical Engineering, Computer Science and Engineering, Electrical Engineering, Mechanical Engineering and Material Science and Engineering; Two Science Disciplines: Physics and Chemistry; Humanities and Social Sciences; Mathematics. 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 (Gandhinagr, 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 has moved to Bihta, a place with history, about 35 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 started from its permanent campus.

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

Highlights

- In a recently released "India Rankings 2016 by NIRF MHRD", IIT PATNA is positioned 10th in list of after top 10 India Rankings 2016 with weighted score of 74.68 among engineering institution of the country.
- Increased student strength from 929 (2014-15) to 1088 (2015-16).
- In the year 2015-16, 28 new projects worth more than Rs. 6.02 crore have been sanctioned.
- Incubation Centre, funded by Department of Electronics and IT, Govt. of India and the Government of Bihar has been established to set up state-of-the-Art Infrastructure for nurturing technology, ideas and innovations in the areas of Electronic System Design and Manufacturing (ESDM).
- Organized 5th Research Scholars Day on 28.2.2016.
- IIT Patna has set up Sophisticated Analytical Instrumentation Facility (SAIF) within its permanent campus in January 2016, with the assistance of the Department of Science and Technology, government of India.
- Indian Institute of Technology (IIT) Patna collaborated with Center for TeleInFrastruktur (CTIF), Aalborg University, Denmark on December 09, 2015.
- The third Convocation of Indian Institute of Technology Patna was held on 06th August, 2015 in its permanent campus at Bihta. The Chief Guest for this ceremony was the Vice President of Boeing International and President of Boeing India, Dr. Pratyush Kumar.
- Organized 7th Foundation Day on 6th August, 2015.
- Three Day IEEE 5G Symposium held at IIT Patna during 29th to 31st March 2016. Shri Ravi Shankar Prasad, Honorable, Union Minister for Communications & Information Technology Government of India inaugurated the symposium.
- Inauguration of Elsevier Centre of Excellence for Natural Language Processing and Shusrut: ezDI Research Lab on Health Informatics.
- The Physics Society, the first society at IIT Patna, was formally inaugurated on 30th of January, 2016. Prof. Ratnamala Chatterjee, Department of Physics, IIT Delhi was the Chief Guest at the inauguration ceremony.
- A three day Cross Lingual Information Access Workshop was held at IIT Patna on 23-25th January, 2015.
- The Fifth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG) was held at IIT Patna, Bihta, Bihar from 16th to 19th December, 2015.
- 29 new projects have been sanctioned in the financial year 2015-16.
- School in the IIT Patna premises was inaugurated on 15th August, 2015.
- Matribhasha Diwas (Mother Tongue Day) was celebrated on 21st February, 2016.

2. Organization

2.1 IIT Council (as on 31st march 2016)

1. **Smt. Smriti Zubin Irani**
   Hon'ble Minister of Human Resource Development
2. **Shri Ninong Ering**
   MP (Lok Sabha)
3. **Shri Abhishek Singh**
   MP (Lok Sabha)
4. **Shri Prabhat Jha**
   MP (Rajya Sabha)
5. **Shri V.S. Oberoi**
   Secretary (HE) MHRD
6. **Dr. Pawan Goenka**
   Chairperson, BOG, IIT Madras
7. **Dr. Vijay P. Bhatkar**
   Chairperson, Board of Governors, IIT Delhi
8. **Dr. Srikumar Banerjee**
   Chairperson, BOG IIT Kharagpur
9. **Prof. Ashok Misra**
   Chairperson, Board of Governors, IIT Roorkee
10. **Dr. Baldev Raj**
    Chairperson, Board of Governors, IIT Gandhinagar
11. **Shri S. K. Roongta**
    Chairperson, BOG IIT Bhubaneswar
12. **Shri Ajai Chowdhry**
    Chairperson, BOG IIT Patna.
13. **Mrs. Lila Poonawalla**
    Chairperson, Board of Governors, IIT Ropar
14. **Prof. Girish Chandra Tripathi**
    Chairperson, BOG IIT (BHU) Varanasi.
15. **Prof. Devang V. Khakhar**
    Director, IIT Bombay
16. **Prof. K. Gupta**
    Officiating Director,, IIT Delhi
17. **Prof. Indranil Manna**
    Director, IIT Kanpur
18. **Prof. Partha P. Chakrabarti**
    Director, IIT Kharagpur
19. **Prof. Bhaskar Ramamurthi**
    Director, IIT Madras
20. **Prof. Gautam Biswas**
    Director, IIT Guwahati
21. **Prof. Pradipta Banerji**
    Director, IIT Roorkee
22. **Prof. Rajeev Sangal**
    Director IIT (BHU) Varanasi
23. **Prof. C.V.R. Murty**
    Director, IIT Jodhpur
24. **Prof. Sudhir K. Jain**
    Director, IIT Gandhinagar
25. **Prof. Pushpak Bhattacharyya**
    Director IIT Patna
26. **Prof. U.B. Desai,**
    Director, IIT Hyderabad
27. **Prof. Sarit Kumar Das**
    Director, IIT Ropar
28. **Prof. R.V. Rajakumar**
    Director, IIT Bhubaneswar
29. **Prof. Timothy A. Gonsalves**
    Director, IIT Mandi
30. **Prof. Pradeep Mathur**
    Director, IIT Indore
31. **Prof. Anil D. Shahsrabudhe**
    Chairperson, AICTE.
32. **Prof. Ashok Jhunjhunwala**
    Deptt. of Elect. Engg., IIT Madras
33. **Dr. (Mrs.) Tessy Thomas**
    Outstanding Scientist' & Director, Advanced Systems Laboratory (ASL), Hyderabad
34. **Shri R. Subrahmanyam**
    AS (TE), MHRD
35. **Ms. Darshana M. Dabral**
    JS&FA, MHRD
36. **Mrs. Tripti Gurha**
    Director (IITs), MHRD, New Delhi
37. **Ms. Prisca Mathew**
    Under Secretary (IITs), MHRD
38. **Shri V.K. Wadhwa**
    Project Officer, Secretariat of Council of IITs
39. **Shri Arun Kumar Karan**
    Assistant, MHRD
40. **Shri Mohit Gupta**
    Assistant MHRD

2.2 The Board of Governors

Mr. Ajai Chowdhry Founder, HCL	**Chairman**
Prof. Pushpak Bhattacharyya Director, IIT Patna	**Ex-Officio Member**
Principal Secretary Department of Science & Technology, Government of Bihar	**Member**
Principal Secretary Department of Science & Technology, Government of Jharkhand	**Member**
Prof. Amitabha Ghosh Former Director, IIT Kharagpur	**Member**
Prof. Sriman Kumar Bhattacharya Former Director, Central Building Research Institute, Roorkee	**Member**
Prof. Ajay Chakrabarty Former Vice-Chancellor, BIT Mesra	**Member**
Dr. T. Mukherjee Former Deputy Managing Director, Tata Steel, Jamshedpur	**Member**
Dr. Karali Patra Associate Professor, Department of Mechanical Engineering, IIT Patna	**Member**
Dr. Nalin Bharti Associate Professor, Department of Humanities and Social Sciences, IIT Patna	**Member**
Mr. Subhash Pandey Registrar, Indian Institute of Technology Patna	**Secretary**

2.3 The Finance Committee

Prof. Pushpak Bhattacharyya Director, IIT Patna	**Ex-Officio Member**
Additional Secretary (TE), Ministry of HRD	**Member**
JS & FA, Ministry of HRD	**Member**
Dr. Karali Patra Associate Professor, Department of Mechanical Engineering, IIT Patna	**Member** **(Board Nominee)**
Dr. Nalin Bharti Associate Professor, Department of Humanities and Social Sciences, IIT Patna	**Member** **(Board Nominee)**
Shri Subhash Pandey Registrar, IIT Patna	**Secretary**

2.4 The Building & Works Committee

Prof. Pushpak Bhattacharyya Director, IIT Patna	**Chairman (Ex-Officio)**
Prof. Swapan Majumdar Retd. Professor, IIT Kharagpur	**Member**
Prof. Avinash Kumar Sinha Professor, Electrical Engineering, IIT Kharagpur	**Member**
Dr. Y.M. Desai Chair Professor, Civil Engineering Department, IIT Bombay	**Member**
Mr. Sushant Baliga (Retd.) Additional Director General, CPWD Training Institute, New Delhi and Advisor, Civil Works, IIT Patna	**Member**
Mr. Gaurav Dewan MRICS	**Member**
Mr. Rajiv Garg Superintending Engineer, IIT Kanpur	**Member**
Mr. B. K. Sahoo E.E. (Electrical), IIT Bombay	**Member**
Mr. Subhash Pandey Registrar, IIT Patna	**Secretary**

2.5 Administrators

Prof. Pushpak Bhattacharyya Director, IIT Patna	**Dr. Samrat Mondal** Head, Computer Science & Engineering
Dr. Somanath Tripathy Associate Dean, Academic	**Dr. Ranjan Kumar Behera** Head, Electrical Engineering
Dr. Mohd. Kaleem Khan Associate Dean, Administration	**Dr. Smriti Singh** Head, Humanities and Social Sciences
Dr. Manoranjan Kar Associate Dean, Faculty Affairs	**Dr. Dinesh Kumar Kotnees** Head, Materials Science and Engineering
Dr. Mayank Tiwari Associate Dean, Research & Development	**Dr. Yogesh Mani Tripathi** Head, Mathematics
Dr. Sahid Hussain Associate Dean, Students	**Dr. Manabendra Pathak** Head, Mechanical Engineering
Dr. Sujoy Kumar Samanta Head, Chemical and Biochemical Engineering	**Dr. Utpal Roy** Head, Physics
Mr. Subhash Pandey Registrar, IIT Patna	**Dr. Pradipta Chakrabortty** Head, IWD
Dr. Debabrata Seth Head, Chemistry	**Dr. Ashok Singh Sairam** Head, CC
Dr. Subrata Hait Head, Civil and Environmental Engineering	**Dr. Md. Lokman Hakim Choudhury** Head SAIF
	Dr. Probir Shaha Faculty-in-Charge, Central Library

2.6 Senate Members

Director	**Prof. Pushpak Bhattacharyya** Ex officio member and Chairperson
Deputy Director(s)	**Ex-officio members**[a]

Deans[b]

	Associate Dean, Academic
	Associate Dean, Administration
	Associate Dean, Resources[c]
	Associate Dean, Faculty Affairs
	Associate Dean, Research & Development
	Associate Dean, Students

2.6 Senate Members

Heads of Academic Units	**Head, Chemical and Biochemical Engineering**
	Head, Chemistry
	Head, Civil and Environmental Engineering
	Head, Computer Science & Engineering
	Head, Electrical Engineering
	Head, Humanities and Social Sciences
	Head, Materials Science and Engineering
	Head, Mathematics
	Head, Mechanical Engineering
	Head, Physics
Wardens	**Warden, Boys' Hostel (Block A & B) Mess 1**
	Warden, Boys' Hostel (Block C & D) Mess 2
	Warden, Girls' Hostel
Librarian[d]	**Dr. Probir Saha** Faculty In-charge, Central Library
All Associate Professors[e]	**Ex-officio members**
Educationists of repute Nominated by the chairman, one each from the fields of science, engineering and humanities	**Mr. Chanchal Kumar,** IAS
	Dr. Pradeep Das Director, RMRIMS
	Prof. Ashok De Director, NIT Patna
Registrar	**Shri Subhash Pandey** Non-member secretary

[a] *Right now there are no Deputy Directors and Workshop Superintendent; however, these ex-officio members are mentioned for future provision*

[b] *Since the Institute does not have any Deans yet, all Associate Deans will be members of the Senate.*

[c] *The office of Associate Dean, Resources will be looked after for the time being by the Director, IIT Patna assisted by HoD-a, PIC-Corporate Relations, PIC-International and Alumni Affairs; and PIC-T&P*

[d] *Since there is no appointed Librarian, Professor In-charge Library will be member of the Senate*

[e] *Since the Institute does not have regular Professors (other than Director), all regular Associate Professors will be members of the Senate.*

3. Events of Significant Importance

3.1 New Director Joining the Institute

Prof. Pushpak Bhattacharyya has assumed charge as Director, IIT Patna with effect from June 03, 2015.

Prof. Pushpak Bhattacharyya is Professor of Computer Science and Engineering at IIT Bombay. He earned his B. Tech. degree from IIT Kharagpur in 1984 and his M. Tech. from IIT Kanpur in 1986. He completed his PhD from IIT Bombay in 1994. He was a Visiting research fellow in Massachusetts Institute of Technology in 1990. He is well known for his contributions to natural language processing and has several distinctions in that field. He has also currently been appointed as Vijay and Sita Vashee Chair Professor.

A highly recognised researcher, Prof. Puspak Bhattachayya is a member of National Knowledge Commission: task force on translation, set up by the Prime Minister of India and Committee on Language Technology, set up by the Planning Commission of India, 2006. For his outstanding contribution to computer science, he has received many accolades including IBM Innovation award (2007), Yahoo Faculty Award (2011), P. K. Patwardhan Award for Technology Development (2008), and VNMM Award of IIT Roorkee (2014). He is also an associate editor of ACM Transaction of Asian Language Information Processing (TALIP) (since 2011), Chair of lexical resources committee of Asian Federation of NLP and board member of Global Wordnet Association. Prof. Pushpak Bhattacharyya is member of the Committee to decide Language Technology Policy, Ministry of Human Resources Development (MHRD).

Prof. Puspak Bhattacharya specializes in Natural Language Processing (NLP), Machine Learning (ML), Machine Translation (MT), Cross Lingual IR (CLIR) and Information Extraction (IE). Recently his text book "Machine Translation" has been published by CRC Press, Taylor and Francis Group, USA. Students of MT, NLP and ML, with interest in Indian Languages should find this book very helpful.

Pushpak Bhattacharyya

1. Name and Designation:

Dr. Pushpak Bhattacharyya, Director (IIT Patna) and Vijay and Sita Vashee Chair Professor (Department of Computer Science and Engineering, IIT Bombay)

2. Organization:

IIT Patna and IIT Bombay

3. Educational Qualification

(Bachelor to Doctoral):

- **B. Tech**. - 1984, Electrical Engineering, Indian Institute of Technology, Kharagpur, INDIA
- **M. Tech**. – 1986, Computer Science and Engineering, Indian Institute of Technology Kanpur, INDIA
- Visiting Research Fellow – 1990, Computer Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA
- **Ph. D**. – 1994, Computer Science and Engineering, Indian Institute of Technology Bombay, INDIA

4. Professional Experience:

Prof. Bhattacharyya has made seminal contributions in Natural Language Processing **(NLP)** and Machine Learning (ML), working in these fields for last 25 years. In addition to being Professor at Dept. of CSE in IIT Bombay, he has been a visiting Professor at Stanford University (2004), University Joseph Fourier (2005, 2009, 2011, 2014), Distinguished lecturer at University of Houston, USA (2012), and Visiting Scholar - MIT (1990). Currently he is the President of Association of Computational Linguistics (ACL), the international apex body in NLP. Dr. Bhattacharyya has carried out sponsored research projects on various NLP technologies, funded by the Ministry of Communication and Information Technology, Ministry of Human Resource Development and by IBM, Microsoft Research, Yahoo, HP Labs and NEC. He has written a text book called "Machine Translation", published by CRC Press, USA (Taylor and Francis group) which brings to light foundational points pertaining to translation of Indian languages. Google Scholar Citation which is the benchmark for Computer Science and Engineering shows approx. 2300 career citations to Dr. Bhattacharyya's papers with an h-index of 26.

5. Specialization and Expertise:

- Artificial Intelligence
- Natural Language Processing **(NLP)**
- Machine Learning **(ML)**

- Cross Lingual IR
- Information Extraction

6. Awards and Distinctions:

- **FNAE:** elected Fellow of Indian National Academy of Engineering, 2015.
- **President** of Association of Computational Linguistics (ACL), the highest international body overseeing Natural Language Processing and related Machine Learning activities in the world.
- Technology Development awards from IIT Roorkee and IIT Bombay: **VNMM 2014** and **Patwardhan 2007,** respectively.
- Ministry of IT, India awards for technology development, **Manthan Award- 2008.**
- Multiple periodic Faculty grant awards from **IBM, Microsoft, Yahoo, Accenture, and Elsevier.**
- Speaker as expert in multilingual computation in the prestigious **Dagstuhl** Seminar, Germany in 2012.
- **United Nations Research Grant:** 1996.

7. Top ten publications in last ten years:

1. Abhijit Mishra, Diptesh Kanojia, Kuntal Dey, Seema Nagar and Pushpak Bhattacharyya, Harnessing Cognitive Features for Sarcasm Detection, **ACL 2016,** Berlin, Germany, August 8-10, 2016.
2. Abhijit Mishra, Diptesh Kanojia and Pushpak Bhattacharyya, Predicting Readers' Sarcasm Understandability by Modelling Gaze Behaviour, **AAAI 2016,** Phoenix, USA, Feb 12-17, 2016.
3. Pushpak Bhattacharyya, Multilingual Projections, book chapter in Language Production, Cognition and the Lexicon (ed. Nuria Gala et al), **Springer,** Switzerland, 2015.
4. Aditya Joshi, Vinita Sharma and Pushpak Bhattacharyya, Harnessing Context Incongruity for Sarcasm Detection, **ACL 2015,** Beijing, China, July 26-31, 2015.
5. Anoop Kunchukuttan, Abhijit Mishra, Rajen Chatterjee, Ritesh Shah and Pushpak Bhattacharyya, Shata-Anuvadak: Tackling Multiway Translation of Indian Languages, **LREC 2014,** Rekjyavik, Iceland, 26-31 May, 2014
6. Kashyap Popat, Balamurali A.R, Pushpak Bhattacharyya and Gholamreza Haffari, The Haves and the Have-Nots: Leveraging Unlabelled Corpora for Sentiment Analysis, **ACL 2013,** Sofia, Bulgaria, 4-9 August, 2013
7. A.Kumaran, Mitesh Khapra and Pushpak Bhattacharyya, Compositional Machine Transliteration, ACM Transactions on Asian Language Information Processing **(TALIP Journal),** Vol. 9, Issue 4, December 2010.
8. Manoj Chinnakotla, Karthik Raman and Pushpak Bhattacharyya, Multilingual PRF: English Lends a Helping Hand, **SIGIR 2010,** Geneva, Switzerland, July, 201
9. Pushpak Bhattacharyya, IndoWordNet, Lexical Resources Engineering Conference 2010 **(LREC 2010),** Malta, May, 2010
10. Ananthakrishnan Ramanathan, Hansraj Choudhary, Avishek Ghosh, Pushpak Bhattacharyya, August 2009, Case markers and morphology: addressing the crux of the fluency problem in English-Hindi SMT, **ACL-IJCNLP 2009,** Singapore.

(More information: https://www.cse.iitb.ac.in/~pb/pubs-yearwise.html)

8. Summary of research output (papers, patents, technology development):

Prof. Bhattacharyya has co-authored approx. **230 research papers** since 2006, in leading conferences, journals and other publications. He has contributed, not only to theoretical research in NLP, but also to the practical applications. His research spans lexical resources (like Wordnets), annotation tools, and NLP systems. NLP systems developed by him include Shata-Anuvadak (a translation engine from-and-to 110 different Indian languages), Sentiment Analysis Engines, and so on. Details of the research output are in Section 10.

9. Major sponsored projects completed/ongoing:

(a) Sampark: Indian Language to Indian Language Machine Translation system, DEITY

(b) Sandhan: Cross Lingual Information Access (CLIA) - Phase II, DEITY

(c) Anuvadaksh: English to Indian Language Machine Translation (EILMT), DEITY

(d) LIS: Laboratory for Intelligent Systems, Tata Consultancy Services

(e) Indowordnet: Development and Integration of Wordnets of Indian Languages, DEITY

(f) Text Mining: Elsevier, Netherlands

(g) Artificial Intelligence in Question Answering, Virtual Agents etc.: Accenture Global R & D

(More information: https://www.cse.iitb.ac.in/~pb/sponsor.html

10. Technology development/translation/initiation:

1. **Search Engine:** Sandhan (URL: http://www.tdil-dc,in/sandhan)
2. **Translation Engines:** (a) Shata-Anuvadak, (b) English to Indian Language Machine Translation (EILMT) SMT System for "English to Marathi", (c) Indian to Indian Language Machine Translation (IL-IL-MT) system for "Marathi to Hindi" and "Hindi to Marathi", (d) Brahmi-Net (Indian language transliteration system)
3. **Lexical Resources:** (a) Hindi, Marathi and Sanskrit WordNets, (b) Indradhanush: Integrated Wordnet for Bengali, Gujarati, Kashmiri,Konkani, Oriya,Punjabi & Urdu, (c) IndoWordNet (includes Hindi, Marathi and Sanskrit WordNets), (d) Dravidian Wordnet: Kannad, Malayalam, Tamil, Telugu, (e) Development and Integration of Wordnets of North East Languages, (f) Universal-Hindi Dictionary

11. Other relevant information:

Professional Service: (a) Associate Editor- ACM Transaction on Asian Language Information Processing (TALIP) 2010-16, **(b) Editorship, Program Chair, Program Committee member** roles for top journals and conferences of the world (TALIP, ACL. COLING, EMNLP, NAACL, LREC, SIGIR, CIKM etc.), **(c) Organizing Chair** - Computation Linguistics Conference (COLING) in 2012 at IIT Bombay (first time to take place in India).

Advisorship: PhD: ongoing 14; completed 17, Masters and Undergraduate advisorship (more than 150)

3.2 IIT Patna moved to its Main Campus

Some Key Information about the Main Campus of IIT Patna

Location: Situated at N25˚32' 0.18" (Latitude) E 084˚51' 16.08" (Longitude) at Globe i.e. at Bihta (Satelite Town of Patna), 35 KM west of Patna

Nearest Railway station: Bihta 3KM

Nearest airport: Patna (35 KM)

Climate: Humid subtropical

Total Area of Plot: 500 Acres

Academic Area:

Area of construction: 53611.44 Sq. m.

Various Buildings:

Block-4:

G+3 Storied Building
Total Floor Area = 6667.73 sq. m.

Departments

1. Chemistry
2. Physics
3. Mathematics

Block-3:

G+5 Storied Building
Total Floor Area = 9885.97 Sq. m.

Departments

1. Mechanical Engineering
2. Electrical Engineering
3. Computer Science and Engineering

Block-6:

G+5 Storied Building
Total Floor Area = 9885.97 Sq. m.

Departments

1. Civil and Environmental Engineering
2. Materials Science and Engineering
3. Chemical and Biochemical Engineering
4. Humanities & Social Sciences

Block-9:

G+5 Storied Building
Total Floor area = 11319.00 Sq. m.

Block-12 (Admin Block):

G+3 Storied Building
Total Floor Area = 10655.12 Sq. m.

Work Shops:

1. Work Shop A:
Civil and Environmental Engineering,
Total floor Area = 1016.58 sq.m.

2. Work Shop B:
Mechanical Engineering,
Floor area = 825.78 sq.m.

3. Work shop C:
Electrical Engineering,
Total floor area = 633.92 sq.m.

Food Court (Part):

Single storied Building
Total Floor Area = 2200.45 sq.m.

Services:

Water Treatment plant-1:-6.00 lac. Liter

Sewerage Treatment Plant-1:-15 m^3/hour

Sub- Station-1:-11 KV substation

Residential Area:

Area of construction: 63204 SQM

Various Buildings:

Boys' Hostel:

G+7 Storied Building
Total floor area 27845.00 sq.m.
Capacity 886 nos single bed room

B-Type Quarter:

(Including Girls' hostel and Guest House)
4 numbers G+8 Storied Building
Total floor area 23174.68 sq.m.
Total number of flats - 144

D-Type Quarter:

4 numbers G+3 Storied Building
Total floor area 467.64 sq.m.
Total nos of Flats-64

Hospital Building (part):

G+1 Storied Building
Total floor area 2170.00 sq.m.

Director's Bungalow:

G+1 Storied Building
Total Floor area = 623.00 sq.m.

School Building (part):

Total floor area 1746.00 sq.m.

Services:

Water Treatment plant-2:

10.59 lac. Litre capacity

Water Treatment plant-3:

9.04 lac. Litre capacity
Unit : MLD or m^3/h or m^3/d

Sewerage Treatment Plant-2 & 3:

15000 liter/hour capacity
Unit : MLD or m^3/h

Sub- Station-2 & 3:

11 KV substation

Main Receiving Sub-Station:

32 to 11 KV

Current Construction Works:

Boys' Hostel

Girls' Hostel

C-Type Quarter (2 in number)

Gymkhana

Marketing Complex

School Building (Extension)

3.3 Recruitment of Employees at IIT Patna during 2015-16

Assistant Professor

Sl. No	Department	Advertisement No.	Date of Seminar Presentation and Interview	No. of Position Offered	No. of Persons who have joined	Name of the Person
1	Chemical & Biochemical Engineering	IITP/FACREC/ R010/2015, Dated30-03-2015	11.09.2015 12.09.2015	3	2	1. Dr. Sandip Khan (Regular) Cat.-OBC 2. Dr. Nitin Dutt Chaturvedi (On Contract) Cat.-GEN
2	Chemistry		16.08.2015 17.08.2015	1	1	1. Dr.T. Rajagopala Rao (On contract) Cat.-OBC
3	Civil & Environmental Engineering		16.07.2015 17.07.2015	5	5	1. Dr. Om Prakash (On Contract) Cat.-GEN 2. Dr. Koushik Roy (On Contract) Cat.-GEN 3. Dr. Vaibhav Singhal (On Contract) Cat.-GEN 4. Dr. Amarnath Hegde (On Contract) Cat.-GEN 5. Dr. Trishikhi Raychoudhury (Regular) Cat.-GEN
4	Computer Science & Engineering	IITP/FACREC/ R010/2015, Dated30-03-2015	18.09.2015 19.09. 2015	5	5	1. Dr. Sourav Kumar Dandapat (On Contract) Cat.-GEN 2. Dr. Suman Kumar Maji (On Contract) Cat.-GEN 3. Dr. Abyayananda Maiti (On Contract) Cat.-GEN 4. Dr. Raju Halder (Regular) Cat.-GEN 5. Dr. Joydeep Chandra (Regular) Cat.-GEN
5	Electrical Engineering		16.09.2015 17.09.2015	3	3	1. Dr. Pramod Kumar Tiwari (Regular) Cat.-GEN 2. Dr. Saurabh Kumar Pandey (On Contract) Cat.-GEN 3. Dr. S. Sivasubramani (Regular) Cat.-GEN

Sl. No	Department	Advertisement No.	Date of Seminar Presentation and Interview	No. of Position Offered	No. of Persons who have joined	Name of the Person
6	Humanities & Social Sciences	IITP/FACREC/ R010/2015, Dated30-03-2015 IITP/FACREC/ R010/2015, Dated30-03-2015	01.11.2015	2	2	1. Dr. Sweta Sinha (On Contract) Cat.-GEN 2. Dr. Richa Chaudhary (On Contract) Cat.-GEN
7	Materials Science & Engineering		Yet to be done			
8	Mathematics		01.12.2015 02.12.2015	4	4	1. Dr. Amit Kumar Verma (Regular) Cat.-GEN 2. Dr. Vivek Laha (On Contract) Cat.-GEN 3. Dr. Pratibhamoy Das (On Contract) Cat.-GEN 4. Dr. Debashree Guha Adhya (Regular) Cat.-GEN
9	Mechanical Engineering		27.09.2015 28.09.2015	3	3	1. Dr. Anirban Bhattacharya (On Contract) Cat.-GEN 2. Dr. Chiranjit Sarkar (On Contract) Cat.-SC 3. Dr. Anirban Mahato (Regular) Cat.-GEN
10	Physics		09.11.2015 10.11.2015	6	6	1. Dr. Jobin Jose (Regular) Cat.-GEN 2. Dr. Manas Kumar Sarangi (On Contract) Cat.-GEN 3. Dr. Jayakumar Balakrishnan (On Contract) Cat.-GEN 4. Dr. R. Prabhu (Regular) Cat.-GEN 5. Dr. Soumya Jyoti Ray (On Contract) Cat.-GEN 6. Dr. Alpana Nayak (Regular) Cat.-GEN

Associate Professor

Sl. No	Department	Advertisement No.	Date of Seminar Presentation and Interview	No. of Position Offered	No. of Persons who have joined	Name of the Person
	Chemistry	IITP/FACREC/ R010/2015, Dated30-03-2015	16.08.2015 17.08.2015	5	5	1. Dr. Debabrata Seth Cat.-GEN 2. Dr. Md. Lokman Hakim Choudhury Cat.-GEN 3. Dr. Neeladri Das Cat.-GEN 4. Dr. Prolay Das Cat.-GEN 5. Dr. Sahid Hussain Cat.-OBC
	Computer Science & Engineering		18.09.2015 19.09. 2015	4	4	1. Dr. Ashok Singh Sairam Cat.-OBC 2. Dr. Jimson Mathew Cat.-GEN 3. Dr. Rajiv Misra Cat.-GEN 4. Dr. Somanath Tripathy Cat.-GEN
	Electrical Engineering		16.09.2015 17.09.2015	1	1	1. Dr. Preetam Kumar Cat.-GEN
	Humanities & Social Sciences		01.11.2015	2	2	1. Dr. Nalin Bharti Cat.-GEN 2. Dr. Smriti Singh Cat.-GEN
	Mathematics		01.12.2015 02.12.2015	3	3	1. Dr. Ashish Kumar Upadhyay Cat.-GEN 2. Dr. Om Prakash Cat.-GEN 3. Dr. Yogesh Mani Tripathi Cat.-GEN
	Mechanical Engineering		27.09.2015 28.09.2015	4	4	1. Dr. Karali Patra Cat.-GEN 2. Dr. Manabendra Pathak Cat.-GEN 3. Dr. Mohd. Kaleem Khan Cat.-GEN 4. Dr. Somnath Sarangi Cat.-GEN
	Physics		09.11.2015 10.11.2015	3	3	1. Dr. Manoranjan Kar Cat.-GEN 2. Dr. Naveen Kumar Nishchal Cat.-GEN 3. Dr. Utpal Roy Cat.-GEN

a) Total Assistant Professor (Regular) - 12

b) Total Assistant Professor (On Contract) - 19

c) Total Associate Professor - 22

Non Teaching Staff

Name	Date of Joining	Designation
Mr. Ravi Shankar	23/12/2015 (FN)	Pharmacist
Mr. Raju Kumar	11/03/2016 (FN)	Junior Accountant

3.4 All India Rank [2016] of IIT Patna

In a recently released "India Rankings 2016 by NIRF MHRD", IIT PATNA is positioned 10th in the list of top 10 India Rankings 2016 with weighted score of 74.68 among the engineering institutions of the country. The Union Minister of Human Resource Development, Smt. Smriti Zubin Irani, has given a certificate of distinction to IIT Patna for ranking 10th best in engineering institutions on April 4th 2016 during the India Rankings 2016 function held at Delhi.

India rankings 2016 benchmarked institutions in engineering vertical, wherein IIT Patna, was assessed on parameters, including teaching-learning; research; collaborative practice and professional performance; graduate outcomes; placements; outreach and inclusive action and peer group perception. Each of these has been further subdivided into nearly 20 sub criteria to comprehensively assess among the institutions to withstand distinction marks.

IIT Patna stands at the Tenth position with weighted score of 74.68. Its rank on different parameters such as teaching, learning and resources (TLR) stands at Sixth position with weighted score of 79.8; research,

professional practice and collaborative performance (RPC) stands at Tenth position with weighted score of 68.29; graduation outcome (GO) stands at Ninth position with weighted score of 74.13; outreach and inclusivity (OI) stands at Seventh position with weighted score of 68.78; and perception (PR) stands at Ninth position with weighted score of 93.

IIT Patna on teaching, learning and resources (TLR) parameter, sub criteria faculty student ratio (FSR) scored 20.40 of 30; metric faculty with Ph.D and experience (FQE) scored 21.96 of 30; metric library, studio & laboratory (LL) scored 29.69 of 30; and metric for sports and extracurricular facilities (SEC) scored 7.76 of 10.

NIRF's ranking has recognized IIT Patna's state-of-the-art facilities with score 98.9% in sub criteria metric for library, studio & laboratory (LL).

IIT Patna on research, professional practice and collaborative performance (RPC), sub criteria metric for publications (PU) scored 29.58 of 30, metric for citations (CI) scored 25.27 of 30, intellectual property rights and patents (IPR) scored 2.586 of 15, collaborative publications and patents (CP) scored 6.44 of 10, footprint of projects and professional practice (FPPP) scored 9.877 of 15.

NIRF's ranking has recognized IIT Patna's excellent publications work with score 98.6% in sub criteria metric for publications (PU) and scored 84.2% for citations (CI).

IIT Patna on graduation outcome (GO), sub criteria performance in university and public examinations (PUE) scored 19.40 of 30, performance in placement, higher studies and entrepreneurship (PHE) scored 35.40 of 50, mean salary for employment (MS) scored 19.34 of 20.

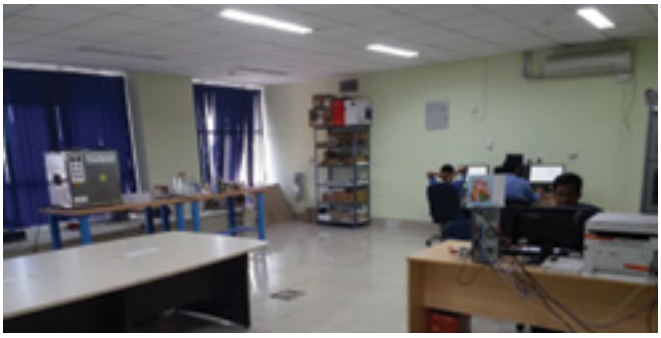
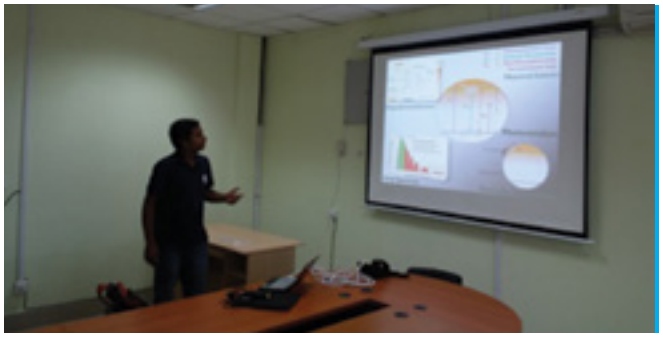
NIRF's ranking has recognized IIT Patna's good mean salary with score 96.7% in sub criteria mean salary for employment (MS)

IIT Patna on outreach and inclusivity (OI), sub criteria continuing education service (CES) scored 15.40 of 25, percentage of students from other states/ countries (CES) scored 17.10 of 25, percentage of women students and faculty (WS) scored 9.79 of 20, percentage of economically and socially disadvantaged students (ESDS) scored 20 of 20, facilities for physically challenged/differently abled persons (PCS) scored 6.5 of 10.

NIRF's ranking has recognized IIT Patna's service to economically and socially disadvantaged with score 100% in sub criteria percentage of economically and socially disadvantaged students (ESDS).

4. Chemical and Biochemical Engineering



4.1 Faculty List

Visiting Professor

Name	Highest Degree	Research Area
Prof. Debatosh Datta	Ph.D	Controlled Angiogenesis and Ischaemic Tissue Reperfusion; Low-Mol-Wt Angiogens and their Characteristics; Tissue Repair – In-situ; Engineering Interfaces & Solutions For Human Biological Problems; Small Molecule Based Drug Design in --- Ischaemic and Infective Conditions; Process and Rationale of Natural Molecules as Multi-tasking Agents; New Biochemical Marker(s) in Ischaemic Diseases --- For Quantification and Continuous assessment of Progress of Disease

Associate Professor

Name	Highest Degree	Research Area
Dr. 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

Assistant Professors

Name	Highest Degree	Research Area
Dr. Sujoy Kumar Samanta	Ph.D	Microwave Assisted Material Processing,Chemical Reaction Engineering, Modeling and Simulation, Renewable Energy Sources and Their Applications

Name	Highest Degree	Research Area
Dr. Nitin Dutt Chaturvedi	Ph.D	Modeling and Simulation of Chemical processes; Process system engineering; Process Integration; Pinch Analysis; Industrial Energy Conservation
Dr. Sandip Khan	Ph.D	Molecular Modelling and Simulation, Statistical Thermodynamics, Equilibrium, Dynamic and Interfacial Properties of Complex fluids, Development of Novel Materials like super-hydrophobic, super-oleophobic, anti-fouling, anti-icing surfaces etc.; Self-Assembled Monolayer in application of chemical sensor, Thermo-physical properties of actinides compounds in application of nuclear fuel.

4.2 Academic Programs

- B.Tech. in Chemical Science and Technology
- Ph.D. Program

4.3 Research & Development Activities

Papers Published in Journals

1. N. D. Chaturvedi, Z. A. Manan, S. R. W. Alwi and S. Bandyopadhyay, Maximising heat recovery in batch processes via product streams storage and shifting, Journal of Cleaner Production, 112, 2802–2812 (2016).
2. N. D. Chaturvedi, Z. A. Manan, S. R. W. and S. Bandyopadhyay, Effect of multiple water resources in a flexible-schedule batch water network, Journal of Cleaner Production, 125, 245–252 (2016).

Papers Presented in Conferences

1. S. Khan, Challenges in Molecular Dynamics Simulation, National Supercomputing Mission: Building capacity and capability, C-DAC, Pune, India (2016).
2. S. K. Samanta, A. Roy, Z. Alam and P. Verma, Comparative Study of Microwave Assisted Heating of Human Blood at Frequencies of 915 MHz and 2450 MHz, International Conference on New Frontiers in Chemical, Energy and Environmental Engineering (INCEEE-2015), NIT Warangal (2015).
3. S. K. Samanta and P. Verma, Microwave Assisted Heating of Human Blood at 2450 MHz Frequency Using Various Composite Supports, Electrical, Electronics, Signals, Communication and Optimization (EESCO-2015) International Conference, VIIT, Visakhapatnam, A.P. (2015)

4.4 Other Activities

Member - Professional Bodies

1. Sujoy Kumar Samanta (2013) Indian Institute of Chemical Engineers
2. Sujoy Kumar Samanta (2015) American Institute of Chemical Engineers
3. Sujoy Kumar Samanta (2015) International Association of Engineers

Visits Abroad by Faculty Members

1. Sujoy Kumar Samanta - To attend, present paper and chair a session in AIChE Annual Meeting 2015, Salt Lake City, USA, 8-11 November 2015.

Invited Lectures by Faculty Members

1. Microwave Assisted Material Processing by Sujoy Kumar Samanta (Vignan's Institute of Information Technology, Visakhapatnam, A.P.).

5. Civil & Environmental Engineering

5.1 Faculty List

Assistant Professors

Name	Highest Degree	Research Area
Dr. Pradipta Chakrabortty	Ph.D	Soil Dynamics and Geotechnical Earthquake Engineering, Soil Heterogeneity, Finite Element Analysis in Geotechnical Engineering, Ground Improvement, Probabilistic Methods in Engineering
Dr. Subrata Hait	Ph.D	Water and Wastewater Treatment, Solid and Hazardous Waste Management, Organic Waste Management by Composting and Vermicomposting, Conventional and Ecological Sanitation
Dr. 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.
Dr. Avik Samanta	Ph.D	Structural Engineering, Structural Dynamics, Performance Based Earthquake Engineering
Dr. 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
Dr. Koushik Roy	Ph.D	Structural Damage Detection; Vibration Control; System Identification; Earthquake Engineering; Structural Dynamics; Soil-Structure Interaction
Dr. Vaibhav Singhal	Ph.D	Seismic behavior of reinforced concrete and masonry structures; Small-scale modeling of structural systems for real time dynamic testing; Seismic evaluation and rehabilitation of structures; Earthquake damage surveys
Dr. Amarnath Hegde	Ph.D	Geotechnical Engineering; Ground Improvement; Computational Geotechnics; Geosynthetics; Rock Mechanics and Tunneling
Dr. Trishikhi Raychoudhury	Ph.D	Environmental Engineering (Colloid Filtration); Solute fate and transport; Water treatment using novel material Environmental implication of nanotechnology)

5.2 Academic Programs

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

5.3 Research & Development Activities

Sponsored Research Projects

1. Fate and transport of Engineered Nanoparticles in Natural Sediment and its implication on porous media (DST-SERB, ₹30.44 Lakhs) (PI : Dr. Trishikhi Raychoudhury)
2. Microzonation of Jaipur City Based on Shear Wave Velocity (Department of Science & Technology, Govt. of India, ₹16.02 Lakhs) (PI : Dr. Pradipta Chakrabortty)
3. Seismic Response, Damage and Vulnerability of Structures in Patna for Future Earthquakes (DST, ₹21.39 Lakhs) (PI : Dr. Avik Samanta)

Consultancy Projects

1. Performance Evaluation of Saidpur STP, Patna – Phase II (IIT Madras, ₹0.28 Lakhs) Consultant Dr. Subrata Hait
2. Quality Assurance of Construction Materials of Dr. Kalam Agricultural College, Kishanganj, Bihar (Bihar State Building Construction Corporation Ltd., Govt. of Bihar, ₹6.18 Lakhs) Consultant Name: Dr. Avik Samanta & Dr. Subrata Hait

Papers Published in Journals

1. Syed K. K. Hussaini, B. Indraratna and J. S. Vinod, A laboratory investigation to assess the functioning of railway ballast with and without geogrids, Transportation Geotechnics, 6, 45-54 (2016).
2. Syed K. K. Hussaini, B. Indraratna and J. S. Vinod, Application of Optical-Fiber Bragg Grating Sensors in Monitoring the Rail Track Deformations, Geotechnical Testing Journal, 38(4), pp.387-396 (2015).
3. A. Hegde and T. G. Sitharam, Behaviour of geocell reinforced soft clay bed subjected to incremental cyclic loading, Geomechnics and Engineering, 10(4), 405-422. (2016).
4. B. Datta, M. Amirabdollahian, R. Zuo and O. Prakash, Groundwater Contamination Plume Delineation Using Local Singularity Mapping Technique, International Journal of GEOMATE, 11 (2016).
5. O. Prakash and B. Datta, Optimal characterization of pollutant sources in contaminated aquifers by integrating sequential-monitoring-network design and source identification: methodology and an application in Australia, Hydrogeology Journal, DOI 10.1007/s10040-0 (2015).
6. D. C. Rai, V. Singhal, S. B. Raj and S. L. Sagar, Performance of residential buildings during the M 7.8 Gorkha (Nepal) earthquake of 25 April 2015, Current Science, 109, 2126-2135 (2015).
7. B. Datta, F. Durand, S. Laforge, O. Prakash, H. K. Esfahani, S. Chadalavada and R. Naidu, Preliminary Hydrogeologic Modeling and Optimal Monitoring Network Design for a Contaminated Abandoned Mine Site Area: Application of Developed Monitoring Network Design Software, Journal of Water Resource and Protection, 8-01/46 (2016).
8. D. C. Rai, V. Singhal, Bhushan Raj S. and S. L. Sagar, Reconnaissance of the Effects of the M7.8 Gorkha (Nepal) Earthquake of April 25, 2015, Geomatics, Natural Hazards and Risk, 7, 1-17 (2015).
9. S. K. Mishra, S. Gur, K. Roy and S. Chakraborty, Response of Bridges Isolated by Shape Memory–Alloy Rubber Bearing, Journal of Bridge Engineering, 04015071 (2015).
10. S. Gur, S. K. Mishra and K. Roy, Stochastic seismic response of building with super-elastic damper, Mechanical Systems and Signal Processing, 72, 642-659 (2016).

Papers Presented in Conferences

1. A. Hegde. and T. G. Sitharam, 3-dimensional numerical modeling of rock bolt pull-out tests, Indian Geotechnical Conference, Pune (2015)
2. Anshupriya and S. Hait, Bioleaching of selected metals from waste printed circuit board by Acidiphilium acidophilum, CHEMCON 2015: Indian Chemical Engineering Congress, IIT Guwahati (2015)
3. Anshupriya and S. Hait, Comparative assessment of conventional and hybrid bioleaching of selected metals from e-waste employing Acidiphilium acidophilum, International Conference on Human Implications of Biotechnology, Central University of South Bihar, Patna (2016)
4. A. Swati and S. Hait, Four-pronged pre-processing approaches for maximum utilization of raw tannery sludge by earthworms, International Conference on Water, Environment, Energy and Society (ICWEES-2016), AISECT University, Bhopal (2016)
5. T. Raychoudhury and S. Kalidindi, Impregnation of metal based oxides within granular activated carbon for removal of inorganic contaminants from water, International Conference on Innovation on Sustainable Water and Wastewater Treatment System (ISWATS), Pune, India (2016)

6. V. Singhal and D. C. Rai, Lateral Strength and Stiffness Predictions for Confined Masonry Walls, 10th US National Conference on Earthquake Engineering, Anchorage, Alaska (2015)
7. S. Kalidindi, B. S. Pankaj and T. Raychoudhury, Multiple-metal oxides anchored granular activated carbon based composite for fluoride removal, 251st American Chemical Society, National Spring Meeting & Exposition, San Diego, USA (2016)

5.4 Other Activities

Member - Professional Bodies

1. Amarnath Hegde (2011) International Geosynthetic Society
2. Amarnath Hegde (2014) Indian Geotechnical Society
3. Avik Samanta (2015) ASCE
4. Avik Samanta (2015) EERI
5. Avik Samanta (2015) Indian Society of Earthquake Technology
6. Pradipta Chakrabortty (2003) Indian Society of Earthquake Technology (ISET)
7. Subrata Hait (2009) World Toilet Organization, Singapore
8. Subrata Hait (2012) Institution of Engineers (India)
9. Subrata Hait (2014) American Society of Civil Engineers (ASCE)
10. Subrata Hait (2014) International Water Association (IWA)
11. Subrata Hait (2005) Eco-Ethics International Union, Germany
12. Syed Khaja Karimullah Hussaini (2016) American Association of Civil Engineers
13. Syed Khaja Karimullah Hussaini (2016) International Geosynthetics Society
14. Syed Khaja Karimullah Hussaini (2016) Canadian Geotechnical Society
15. Trishikhi Raychoudhury American Chemical Society (ACS)
16. Vaibhav Singhal (2016) Earthquake Engineering Research Institute
17. Vaibhav Singhal (2016) American Society of Civil Engineers

Member - Editorial Board

1. Amarnath Hegde (2016) Associate Editor - Journal of Advanced Research in Civil and Environmental Engineering
2. Pradipta Chakrabortty (2016) Associate Editor - Journal of Advanced Research in Civil and Environmental Engineering
3. Subrata Hait (2015) Article Editor - SAGE Open

Awards & Honours

1. Amarnath Hegde (2015) IGS-Prof. Leonard's award
2. Vaibhav Singhal (2015) INAE Innovative Students Projects Awards 2015

Fellowships

1. Amarnath Hegde (2016) Endeavour Fellowship from Australian Government

Invited Lectures by Faculty Members

1. Are We Safe From Earthquakes? by Vaibhav Singhal (JNV Bikram, Bihar)
2. Design and Construction Details of Confined Masonry by Vaibhav Singhal (Imphal)

Books Published

1. Hegde, A. and Sitharam, T.G.: Ground improvement using 3D-cellular Confinement Systems. published by Lambert Academic Publishing, Germany (2016)

6. Computer Science and Engineering

6.1 Faculty List

Professor

Name	Highest Degree	Research Area
Prof. Pushpak Bhattacharyya	Ph.D	Artificial Intelligence, Natural Language Processing (NLP), Machine Learning (ML), Cross Lingual IR, Information Extraction

Associate Professors

Name	Highest Degree	Research Area
Dr. Ashok Singh Sairam	Ph.D	Network Security, Routing in Wireless Networks, Network Bandwith Monitoring and Management
Dr. Jimson Mathew	Ph.D	Fault Tolerant Computing, VLSI.; Design and Methodologies, Reliability Aware; Designs, Hardware Security etc
Dr. Rajiv Misra	Ph.D	Mobile Computing, Adhoc Networks and Sensor Networks
Dr. Somanath Tripathy	Ph.D	Lightweight Cryptography, Computer Security, Network Security

Assistant Professors

Name	Highest Degree	Research Area
Dr. Abyayananda Maiti	Ph.D	Online Algorithms, Complex Networks, Social Networks, Big Data
Dr. Arijit Mondal	Ph.D	CAD for VLSI, Analog EDA

Name	Highest Degree	Research Area
Dr. Asif Ekbal	Ph.D	Natural Language Processing; Data Mining and Machine Learning Applications; Information Extraction; Bio-text Mining; Machine Learning in Social Networks
Dr. Joydeep Chandra	Ph.D	Peer-to-Peer Systems, Online Social Networks, Complex Networks, Distributed Systems
Dr. Raju Halder	Ph.D	Formal Methods, Abstract Interpretation, Programming Languages, Static Analysis and Verification, Databases
Dr. Samrat Mondal	Ph.D	Security & Privacy and Database Systems
Dr. Sourav Kumar Dandapat	Ph.D	Wireless Networking; Mobile Social Computing; Human Computer Interaction
Dr. Sriparna Saha	Ph.D	Pattern Recognition, Multiobjective Optimization, Bio-Text Mining, Bioinformatics, Soft Computing
Dr. Suman Kumar Maji	Ph.D	Image Processing, Medical Imaging, Bioinformatics, Computer Vision

6.2 Academic Programs

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

6.3 Research & Development Activities

Sponsored Research Projects

1. Centre of Excellence for Natural Language Processing-IITP (Elsevier, ₹213.00 Lakhs)(PI : Prof. Pushpak Bhattacharyya, Co-PIs: Dr. Asif and Dr. Sriparna Saha)
2. Development of Authentication Scheme to be used in Public Domain (SERB-DST, ₹16.04 Lakhs) (PI : Dr. Samrat Mondal)
3. Development of solution to defend against collaborative attacks in P2P networks (DIETY, ₹35.40 Lakhs) (PI : Dr. Somanath Tripathy)
4. IITB-IITP NLP ML (COLING, ₹47.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya)
5. Shusrut: ezDI Research Lab on Health Informatics (eZDI, ₹145.00 Lakhs) (PI : Dr. Prof. Pushpak Bhattacharyya, Dr. Asif and Dr. Sriparna Saha) SMDP-C2SD (DEITY, Delhi) (PI : Dr. K. C. Ray)
6. Three GIAN approved courses (MHRD, ₹19.00 Lakhs) (PIs : Prof. Pushpak Bhattacharyya, Dr. Asif Ekbal, Dr. Sriparna Saha)
7. Tunable Synchronization of Spatially Distributed Cyber-Physical Systems (DST-DAAD, ₹10.00 Lakhs) (PI : Dr. Ashok Singh Sairam)
8. Vehicular Sensor and Mesh Networks based Future ITS (DeitY, ₹100.15 Lakhs) (PI : Dr. Rajiv Misra)

Consultancy Projects

1. Bandwidth estimation and hop-to-hop capacity estimation algorithm(s) (Meritech Software Pvt. Ltd. Chandigarh - 160101, India, ₹2.25 Lakhs) Consultant Name: Ashok Singh Sairam

Papers Published in Journals

1. A. Ekbal and S. Saha, Joint Model for Feature Selection and Parameter Optimization Coupled with Classifier Ensemble in Chemical Mention Recognition, Knowledge-Based Systems, 85, PP 37-51 (2015).
2. S. Saha, S. Mitra and R. K. Yadav, A Multiobjective Based Automatic Framework for Classifying Cancer-microRNA Biomarkers, Gene Reports (expanded version of Gene), Accepted (2016).
3. A. Alok, S. Saha and A. Ekbal, A New Semi-supervised Clustering Technique using Multi-objective Optimization, Applied Intelligence, 633-661 (2015).

4. D. Das, R. Misra and A. Raj, Approximating geographic routing using coverage tree heuristics for wireless network, Wireless Networks, 21 (2015).
5. S. Saha, A. Alok and A. Ekbal, Brain Image Segmentation using Semi-supervised Clustering, Expert Systems with Applications, Vol. 52, PP. 50-63 (2015).
6. 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 (2015).
7. U. Sikdar, A. Ekbal, S. Saha, O. Uryupina and M. Poeiso, Differential Evolution based Feature Selection Technique for Anaphora Resolution, Soft Computing, 19(8), PP. 2149-2161 (2015).
8. X. Yang, A. A. Adeyemo, A. Jabir and J. Mathew, High-performance single-cycle memristive multifunction logic architecture, Electronics Letters, 1-2 (2016).
9. N. Chakraborty and S. Mondal, HoneyString: An Improved Methodology Over Tag Digit Based Honeypot To Detect Shoulder Surng Attack, International Journal of Trust Management in Computing and Communications, (2016).
10. S. Saurabh and A. S. Sairam, Increasing Accuracy and Reliability of IP Traceback for DDoS Attack Using Completion Condition, International Journal of Network Security, 18 (2016).
11. Y. Yang, J. Mathew, R. S. Chakraborty, M. Ottavi and D. K. Pradhan, Low Cost Memristor Associative Memory Design for Full and Partial Matching Applications, IEEE Transactions on Nanotechnology, DOI 10.1109/TNANO.2016.2553438, DOI 10.1109/TNANO.20 (2016).
12. U. Sikdar, A. Ekbal and S. Saha, MODE: Multiobjective Differential Evolution for Feature Selection and Classifier Ensemble, Soft Computing, 19(12), PP:3529-3549 (2015).
13. A. Alok, S. Saha and A. Ekbal, Multi-objective semi-supervised clustering for automatic pixel classification from remote sensing imagery, Soft Computing, Accepted (2015).
14. S. Saha, K. Kuldeep, A. Alok and S. Acharya, Multi-objective semi-supervised clustering of tissue samples for cancer diagnosis, Soft Computing, Accepted (2015).
15. 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), Pages 691-698 (2015).
16. 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, 1-19 (2015).
17. S. Mishra, S. Mondal and S. Saha, Sensitivity-An Important Facet of Cluster Validation Process for Entity Matching Technique, International Journal Transactions on Large-scale Data and Knowledge-Centered Systems (TLDKS), Accepted (2016).
18. S. Saha, R. Spandana, A. Ekbal and S. Bandyopadhyay, Simultaneous Feature Selection and Symmetry Based Clustering using Multiobjective Framework, Applied Soft Computing, 479-486 (2015).
19. Krallinger, M., Rabal, O., Leitner, F., Vazquez, Sikdar, U., K., Ekbal, A., & Segura-Bedmar, I., The CHEMDNER corpus of chemicals and its Annotation Principles, Cheminformatics, 7(S-1): S2 (2015).
20. J. Boyar, K. S. Larsen and A Maiti, The Frequent Items Problem in Online Streaming Under Various Performance Measures, International Journal of Foundations of Computer Science, 26 (4): 413 – 439 (2015).
21. S. Acharya, S. Saha and S. Bandyopadhyay, Use of Line Based Symmetry for Developing Cluster Validity Indices, Soft Computing, Accepted (2015).
22. S. Saha, A. Alok and A. Ekbal, Use of Semi-supervised Clustering and Feature Selection Techniques for Gene-Expression Data, IEEE Journal of Biomedical and Health Informatics, doi: 10.1109/JBHI.20 (201).

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1. M. Pal, S. Saha and S. Bandyopadhyay, Clustering based Online Automatic Objective Reduction to aid Many-Objective Optimization, In Proceedings of IEEE CEC 2016, Vancouver, Canada (2016)
2. S. K. Maji, C. Dargemont, J. Salamero and J. Boulanger, Joint Denoising-Deconvolution approach for fluorescence microscopy, IEEE International Symposium of Biomedical Imaging (ISBI), Prague, Czec Republic (2016)
3. Md. Hasanuzzaman, S. Saha, G. Dias and S. Ferrari, Understanding Temporal Query Intent, The 38th Annual ACM SIGIR Conference, Santiago, Chile (2015)
4. S. Mishra, S. Saha and S. Mondal, An Automatic Framework for Entity Matching in Bibliographic Databases, IEEE World Congress on Computational Intelligence, Vancouver, Canada (2016)
5. A. Pandey, R. Chakraborty, S. Sarkar and J. Chandra, Analyzing Link Dynamics in Scientific Collaboration Networks --- A Social Yield Based Perspective, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, Paris, France (2015)
6. S. Akhtar, A. Ekbal and P. Bhattacharyya, Aspect based Sentiment Analysis in Hindi: Resource Creation and Evaluation (accepted), 10th edition of the Language Resources and Evaluation Conference (LREC), Portorož, Slovenia. (2016)
7. S. Akhtar, A. Ekbal and P. Bhattacharyya, Aspect Based Sentiment Analysis: Category Detection and Sentiment Classification for Hindi, 17th International Conference on Intelligent Text Processing and Computational Linguistics (CICLING), Konya, Turkey (2016)
8. D. Pawar, Md. Hasanuzzaman and A. Ekbal, Building Tempo-HindiWordnet-A resource for temporal information access in Hindi (accepted), 10th edition of the Language Resources and Evaluation Conference (LREC), Portorož, Slovenia. (2016)
9. N. C. Rathore, P. Shaw and S. Tripathy, Collaborative Access Control Mechanism for Online Social Networks, ICDCIT 2016, Bhubaneswar (2016)
10. N. C. Rathore, S. Tripathy, Collaborative Access Control Model for Online Social Networks, 6th IEEE International Advance Computing Conference (IACC-2016), Bhimavaram, Andhra Pradesh (2016)
11. A. Sharma and R. Misra, Computing Large Connected Components Using Map Reduce In Logarithmic Rounds, IEEE BigDataSecurity 2016, Columbia University, New York USA (2016)
12. A Sherawat, R. Misra and R. Yadav, Connectivity in CRNs with Bounded Treewidth Potential Graph and its Fixed Parameter Tractability, Twenty Second National Conference on Communications NCC 2016, IIT Guwahati (2016)
13. D. Khosley and R. Halder, Data Cleaning: An Abstraction-based Approach, 4th International Conference on Advances in Computing, Communications and Informatics, Kochi, India (2015)
14. Md. Imran Alam and R. Halder, Data-centric Refinement of Information Flow Analysis of Database Applications, rd International Symposium on Security in Computing and Communications, Kochi, India (2015)
15. R. Matam and S. Tripathy, Denial of Service attack on Low Rate Wireless Personal Area Networks, 22nd National Conference on Communications, NCC 16, IIT Guwahati (2016)
16. S. S. Basu, S. Tripathy and A. R. Chowdhury, Design challenges and Security issues in the Internet of Things, TENSYMP 2015, Ahmadabad (2015)
17. S. Mishra, S. Saha and S. Mondal, Divide and Conquer Based Non-dominated Sorting for Parallel Environment, IEEE World Congress on Computational Intelligence, Vancouver, Canada (2016)
18. R. Misra, A. Gupta and A. Pratap, Fairness while Improving Smartphone Battery Life using D2D Cooperative Relays Underlaying LTE Networks, 2016 International Conference on Computational Techniques in Information and Communication Technologies (ICCTICT), New Delhi (2016)

19. S. Mishra, S. Mondal and S. Saha, Fast Implementation of Steady State NSGA-II, IEEE World Congress on Computational Intelligence, Vancouver, Canada (2016)
20. A. Majumder, Md. Hasanuzzaman and A. Ekbal, Feature selection for event extraction in biomedical text, ICAPR, ISI Kolkata (2015)
21. U. K. Sikdar, A. Ekbal and S. Saha, Feature Selection in Anaphora Resolution for Bengali: A Multiobjective Approach, 6th International Conference on Intelligent Text Processing and Computational Linguistics (CICLing 2015), Cairo, Egypt (2015)
22. N. Chakraborty and S. Mondal, Few notes towards making honeyword system more secure and usable, 8th International Conference on Security of Information and Networks, Sochi, Russian Federation (2015)
23. R. Das, S. Saha, Gene expression classification using a fuzzy point symmetry based PSO clustering technique, 2nd Intl. Conference on Soft Computing & Machine Intelligence, Hong Kong (2015)
24. R. Das and S. Saha, Gene Expression Data Classification using Automatic Differential Evolution Based Algorithm, In Proceedings of IEEE CEC 2016, Vancouver, Canada (2016)
25. A. Kumar, S. Kohail, A. Kumar, A. Ekbal and C. Biemann, IIT-TUDA at SemEval-2016 Task 5: Beyond Sentiment Lexicon: Combining Domain Dependency and Distributional Semantics Features for Aspect Based Sentiment Analysis, SemEval-2016, collocated with NAACL, USA (2015)
26. A. Kumar, C. Kansal and A. Ekbal, Investigating Active Learning for Document-level Sentiment Analysis, Social Networking Workshop, COMSNET, Bangalore (2015)
27. R. N. Yadav and R. Misra, k-channel connected topology control algorithm for cognitive radio networks, COMSNETS 2016, Bangalore (2016)
28. R. Chakraborty and J. Chandra, Link dynamics in scientific collaboration networks, COMSNETS 2016, Bangalore, India (2016)
29. R. Das and S. Saha, Microarray Gene Expression Data classification Using Modified Differential Evolution Based Algorithm, IEEE INDICON-2015, Jamia Millia Islamia, New Delhi, India (2015)
30. A. Alok, S. Saha and A. Ekbal, MR Brain Image Segmentation Using Muti-objective Semi-supervised Clustering, IEEE SPICES 2015, NIT Calicut, Kerala (2015)
31. S. Roy and A. S. Sairam, Network Attack Detection and Mitigation, IEEE International Conference on Self-Adaptive and Self-Organizing Systems Workshops (SASOW), Cambridge, USA (2015)
32. D Vinod, Ramnarayan and R. Misra, On Robust k-hop clustering in Ad-hoc Cognitive Radio Networks, 22nd National Conference on Communications : NCC 2016, IIT Guwahati (2016)
33. A. Sarkar, Partitioned Fair Round Robin: A Fast and Accurate QoS Aware Scheduler for Embedded Systems, VLSE Design Conference, Kolkata (2016)
34. J. Mayank and A. Mondal, Performance optimization of real time control systems using variable time period, VLSI Design and Test Symposium, Ahmedabad, India (2015)
35. R. N. Yadav and R Misra, Periodic channel-hopping sequence for rendezvous in cognitive radio networks, 2015 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2015, Kochi, India (2015)
36. A. Jana, R. Halder, N. Chaki and A. Cortesi, Policy-based Slicing of Hibernate Query Language, 4th International Conference on Computer Information Systems and Industrial Management Applications, Warsaw, Poland (2015)
37. D. Gupta, K. Reddy, Shweta and A. Ekbal, PSO-ASent: Feature Selection using Particle Swarm Optimization for Aspect based Sentiment Analysis, NLDB, Passau, Germany (2015)
38. A. Pratap and R. Misra, Resource sharing in D2D communication underlaying cellular LTE-A networks, 2015 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2015, Kochi (2015)

39. A. Khan, A. Ekbal and E. Endelzo, Simultaneous Feature Selection and Parameter Optimization Using Multi-objective Optimization for Sentiment Analysis, ICON, IIIT-M, Kerala (2015)
40. A. Alok, S. Saha, A. Ekbal and N. Kanekar, Simultaneous Feature Selection and Semi-supervised Clustering for Gene-Expression Data, IEEE SPICES 2015, NIT Calicut, Kerala (2015)
41. K. Gopalakrishnan, A. Pandey and J. Chandra, Social interaction in the Flickr social network, COMSNETS 2016, Bangalore, India (2016)
42. R. Misra, Towards Smart Cities using ITeS, International Conference on Smart Cities, IIT Delhi (2016)
43. A. S. Sairam, S. Roy and S. Dwivedi, Using CAPTCHA Selectively to Mitigate HTTP-based, IEEE GLOBECOM, San Diego, California, USA (2015)
44. A. Jana, R. Halder and A. Cortesi, Verification of Hibernate Query Language by Abstract Interpretation, 5th International Conference on Intelligence Science and Big Data Engineering, Suzhou, China (2015)

6.4 Other Activities

Fellow - Professional Bodies

1. Rajiv Misra (2008) IETE

Member - Professional Bodies

1. Arijit Mondal IEEE
2. Ashok Singh Sairam (2010) International Association of Computer Science and Information
3. Ashok Singh Sairam (2010) IEEE
4. Asif Ekbal (2006) ACL
5. Asif Ekbal (2015) ACM
6. Asif Ekbal (2014) IEEE
7. Jimson Mathew (2014) IEEE
8. Joydeep Chandra ACM
9. Rajiv Misra (2016) IEEE
10. Samrat Mondal (2011) IEEE
11. Somanath Tripathy (2009) IEEE
12. Somanath Tripathy (2006) Cryptological Research Society of India
13. Sriparna Saha (2015) International Association of Computer Science and Information Technology (IACSIT),
14. Sriparna Saha (2015) International Association of Engineers (IAENG)
15. Sriparna Saha (2015) IEEE
16. Sriparna Saha (2015) The Association of Computer, Electronics and Electrical Engineers (ACEEE),
17. Sriparna Saha (2015) Association for Computing Machinery

Member - Editorial Board

1. Jimson Mathew (2016) Special issue Editor - ACM Transactions on Embedded Computing

Awards & Honours

1. Sriparna Saha (2015) Best paper award in IEEE INDICON 2015
2. Sriparna Saha (2015) Elevated to IEEE Senior Member
3. Rajiv Misra (2015) HiPC 2015 Faculty Travel Grant
4. Sriparna Saha (2016) IEI Young Engineers Award in Computer Engineering Discipline
5. Rajiv Misra (2015) IPDPS 2015 Faculty Travel Grant

Fellowships

1. Asif Ekbal (2015) CNRS fellowship
2. Sriparna Saha (2015) Junior Humboldt Research Fellowship

Visits Abroad by Faculty Members

1. Sriparna Saha - Research Collabaration (University of Caen, France) May-June 2015

2. Ashok Singh Sairam - DST- DAAD Project based Personnel Exchange Programme (University of Applied Sciences, Offenburg, Germany) 4-June-2015 to 13-July-2015
3. Ashok Singh Sairam - To attend and present paper in IEEE Global Communications Conference (San Diego, USA) 5-12-2015 to 13-12-2015
4. Samrat Mondal - To attend SIN 2015 conference (Visited Sochi, Russia in September 2015) 3 days
5. Asif Ekbal - To serve as visiting research scientist (University of Caen, France) May-June, 2015
6. Asif Ekbal - Attending NLDB conference (Passau, Germany) June 17-19, 2015

Invited Lectures by Faculty Members

1. Shortest Path Algorithms by Sriparna Saha (NIT Patna)
2. Semi-supervised Clustering by Sriparna Saha (Sona College of Technology, Salem, Tamilnadu)
3. Natural Language Processing by Sriparna Saha (University of Allahabad)
4. Security and Privacy Issues in Cloud Storage by Somanath Tripathy (Silicon Institute of Technology)
5. Real Time Embedded Systems Analysis by Arijit Mondal (Ahmedabad)
6. Verilog - A hardware description language by Arijit Mondal (Patna)
7. Advanced Search by Asif Ekbal (NIT Patna)
8. Natural Language Processing: Introduction and Some Issues of Optimization by Asif Ekbal (University of Allahabad)
9. Opinion Mining in Social Media Contents by Asif Ekbal (Patna University)
10. Overview of CSE Department, IIT Patna to incubators summit by Asif Ekbal (Ahmedabad)
11. Algoithms-Randomized quicksort, Randomized divide-and-conquer for order statistics by Rajiv Misra (NIT-Patna)

Books Published

1. H. Yahia, J. Sudre, V. Garcon, A. Turiel, S. K. Maji: Novel Nonlinear Methods in Image Processing for Analyzing Ocean Datasets published by INRIA Press (2016)

7. Electrical Engineering

7.1 Faculty List

Associate Professor

Name	Highest Degree	Research Area
Dr. Preetam Kumar	Ph.D	Physical Layer issues in Wireless Communications, Signal Processing for Communication Systems, VLSI for Communication, Wideband Antenna Design, Underwater Communications

Assistant Professors

Name	Highest Degree	Research Area
Dr. Ahmad Ali	Ph.D	Control Systems, Evolutionary algorithms, New tuning strategies for controller design, Relay based system identification
Dr. Aneek Adhya	Ph.D	Physical layer impairment-aware WDM backbone networks; traffic grooming, energy efficiency in backbone and access networks; hybrid wireless-optical broadband access networks; computer communication and networks
Dr. Kailash Chandra Ray	Ph.D	VLSI architectural design, VLSI Signal Processing, Digital VLSI Design, Hardware design methodologies, FPGA based System Design, CORDIC
Dr. Mahesh Kumar H. Kolekar	Ph.D	Digital Signal, Image and Video Processing, Video Surveillance, Multimedia Communication, Medical Image Processing, Computer Graphics, Signal Processing for communication, Tele-medicine
Dr. Pramod Kumar Tiwari	Ph.D	Modeling, Simulation and Fabrication of Semiconductor Devices
Dr. 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
Dr. Ranjan Kumar Behera	Ph.D	Design and Fabrication of Power Electronics Circuits, Control of Electrical Drives, Application of Nonlinear Control Theory to Power Electronics and Electric Drives, Pulse Width Modulation Techniques for Power Electronics
Dr. S. Sivasubramani	Ph.D	Power System Optimization; Smart Grid
Dr. Sanjoy Kumar Parida	Ph.D	Optimal Operation and Control of Power Systems, Electricity Market, Renewable Energy, Smart Energy Network, Flexible AC Transmission Systems
Dr. Saurabh Kumar Pandey	Ph.D	Optoelectronics Devices, Semiconductor thin films, Solar Cells
Dr. Shovan Bhaumik	Ph.D	Statistical signal processing; Non linear estimation; Aerospace target tracking; Smart material

Name	Highest Degree	Research Area
Dr. Sudhan Majhi	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.
Dr. Sumanta Gupta	Ph.D	Digital Signal Processing for Communication; Coherent Optical Communication; Photonic Integrated Circuits (PICs); All-Optical Signal Processing; Design, Characterization, and Optimization of Fiber-Optic Transmission Systems and Networks
Dr. Yatendra Kumar Singh	Ph.D	RF MEMS, Computational Electromagnetics

7.2 Academic Programs

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

7.3 Research & Development Activities

Sponsored Research Projects

1. Analytical investigation of subthreshold behavior of SiNT FETs (DRDO, ₹19.98 Lakhs) (PI : Dr. Pramod Kumar Tiwari)
2. Design and Analysis of High Performance RF MEMS-based Electronically Reconfigurable Filters for Wireless Communication Applications (SERB, DST, ₹26.75 Lakhs) (PI : Dr. Yatendra Kumar Singh)
3. Design and FPGA prototyping of multicarrier multiple access schemes for variable rate multimedia satellite communication (DeitY, ₹105.00 Lakhs) (PI : Dr. Preetam Kumar, Dr K C Ray)
4. High Power AC Drives for Electric Locomotive and General Purpose off Highway Applications (Department of Science & Technology (DST), Govt. of India, ₹19.75 Lakhs) (PI : Dr. Ranjan Kumar Behera)
5. Integrated Automatic Voltage Control of a High Efficient Solar PV System (Department of Science & Technology (DST), Govt. of India, ₹34.12 Lakhs) (PI : Dr. Ranjan Kumar Behera)
6. Integration of Distributed Energy Resources to enhance the reliability of the system (Department of Science and Technology, ₹6.00 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
7. Modeling, Design and Implementation of Induction Motor Drives for Propulsion Applications (Department of Electronics and Information Technology, ₹50.60 Lakhs) (PI : Dr. Ranjan Kumar Behera)
8. Modeling, simulation and performance optimization of Re-S/D SOI MOSFET (DST, ₹22.90 Lakhs) (PI : Dr. Pramod Kumar Tiwari)
9. Sparse Grid Quadrature Filter With Application in Bearings-only Passive Underwater Target Tracking Problem (Naval Research Board, ₹13.00 Lakhs) (PI : Dr. Shovan Bhaumik)
10. Special Man Power Development- Chip to System Design (DeitY, Govt. Of India, ₹285.00 Lakhs) (PI : Dr. Kailash Chandra Ray)

Patents (filed / granted)

1. Patent Name : An improved squirrel cage induction motor with enhanced efficiency and wide range of operating speed for application in electric vehicle; Patent Owner: Ranjan Kumar Behera

2. Patent Name : Automatic Booklet scanning machine and its method of working; Patent Owner: Kailash Chandra Ray
3. Patent Name : Ecient Image Enhancement Technique via Discretization of Riemann-Liouville Denition; Patent Owner: Rajib Jha

Papers Published in Journals

1. P. Kumar and P. Kumar, A Comparative Study of Spread OFDM with Transmit Diversity for Underwater Acoustic Communications, Springer Wireless Personal Communications, 83 (2015).
2. P. Pattanayak and P. Kumar, A computationally efficient genetic algorithm for MIMO broadcast scheduling, Elsevier Applied Soft Computing, 37 (2015).
3. S. Raj, K. Maurya and K. C. Ray, A knowledge-based real time embedded platform for arrhythmia beat classification, Biomedical Engineering Letters, Vol. 5(4),271-280 (2015).
4. S. Suman and R. K. Jha, A New technique for Image Enhancement using Digital Fractional Order Savitzky Golay Differentiator, Multidimensional Systems & Signal Processing, 1-25 (2015).
5. A. K. Singh and S. K. Parida, A Novel Hybrid Approach to Allocate Renewable Energy Sources in Distribution System, International Journal of Electrical Power and Energy Systems, Vol. 10,pp.1-11 (2015).
6. D. Shukla, R. K. Jha, A robust video stabilization technique using integral frame projection warping, Signal, Image & Video processing, 9, 6, 1287-1297 (2015).
7. A. K. Singh and S. K. Parida, Allocation of distributed generation using proposed DMSP approach based on utility and customers aspects under deregulated environment, International Journal of Electrical Power and Energy Systems, Vol. 68, pp.159-169 (2015).
8. V. S. Verma, R. K. Jha, An Overview of Robust Digital Image Watermarking, IETE Technical Review, 32, 6, 479-496 (2015).
9. M. A. Hasan and S. K. Parida, An overview of solar photovoltaic panel modeling based on analytical and experimental viewpoint, Renewable and Sustainable Energy Reviews, Vol. 60, pp. 75-83 (2016).
10. P. Pattanayak, K. M. Roy and P. Kumar, Analysis of a new MIMO Broadcast Channel Limited Feedback Scheduling Algorithm with user Grouping, Springer Wireless Personal Communications, 80 (2015).
11. P. K. Tiwari, V. R. Samoju, T. Sunkara, S. Dubey and S. Jit, Analytical modeling of threshold voltage for symmetrical silicon nano-tube field-effect-transistors (Si-NT FETs), Journal of Computational Electronics, 15, issue 45 (2016).
12. S. Raj, G. S. S. P. Chand and K. C. Ray, ARM-based arrhythmia beat monitoring system, Microprocessors and Microsystems, Vol. 39(7),504–511 (2015).
13. S. K. Pandey and S. Mukherjee, Bias dependent photo-detection of dual ion beam sputtered MgZnO thin films, Bulletin of Materials Science, 39 (2016).
14. 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, 349-361 (2015).
15. S. Verma and P. Kumar, Compact Arc Shaped Antenna with Binomial Curved Conductor-Backed Plane for Multiband Wireless Applications, IET Microwave Antennas and Propagation, 9 (2015).
16. N. Kumar and Y. K. Singh, Compact tri to dual passband switchable bandpass filter using stub-loaded split-ring resonator with improved bandwidth, Electronics Letters, 51 1510-1512 (2015).
17. V. S. Verma, R. K. Jha and A. Ojha, Digital watermark extraction using support vector machine with principal component analysis based feature reduction, Visual Communication & image representation, 31, 75-85 (2015).
18. S. K. Pandey, Enhanced Performance and Defects Analysis of MgZnO based CIGS Solar Cell, Journal of Nanoelectronics & Optoelectronics, 11 (2016).

19. N. Gupta and R. K. Jha, Enhancement of dark images using dynamic stochastic resonance with anisotropic diffusion, Journal of Electronic Imaging, 25, no. 2, 023017 (2016).
20. R. Chouhan, P. K. Biswas and R. K. Jha, Enhancement of low-contrast images by internal noise-induced Fourier coefficients rooting, Signal image & video Processing, in press (2015).
21. K. K. S. Pandian and K. C. Ray, Five Decade Evolution of Feedback Shift Register: Algorithms, Architectures and Applications, Int. J. of Communication Networks and Distributed Systems, Vol.15, No.2/3 pp.27 (2015).
22. M. K. Gupta, N. K. Tomar and S. Bhaumik, Full and reduced-order observer design for rectangular descriptor systems with unknown inputs, Journal of the Franklin Institute, 352(9) pp. 1250-64 (2015).
23. A. K. Singh and S. Bhaumik, Higher degree cubature quadrature Kalman filter, International Journal of Control, Automation and Systems, 13(5), pp. 1097-1105 (2015).
24. R. Chouhan, P. K. Biswas and R. K. Jha, Hybrid domain analysis of noise-enhanced contrast stretching, Signal Processing Systems, in press (2015).
25. S. K. Dey and A. Adhya, IP-Over-WDM Network Design Methodology to Improve Efficiency in Overall Expenditure Due to Cost and Energy Consumption, Journal of Optical Communications and Networking, Volume 7, PP.563-577 (2015).
26. R. Radhakrishnan, A. K. Singh, S. Bhaumik and N. K. Tomar, Multiple sparse-grid Gauss-Hermite filtering, Applied Mathematical Modelling, 40(7-8) pp.4441–44 (2016).
27. K. K. S. Pandian and K. C. Ray, Non-singular sequence folding-based pseudorandom key generation algorithm for cryptographic processor, Security and Communication Networks, Vol.8(18), 4019–40 (2015).
28. A. K. Singh and S. K. Parida, Novel sensitivity factors for DG placement based on loss reduction and voltage improvement, International Journal of Electrical Power and Energy Systems, Vol. 74, pp.453-456 (2016).
29. S. Pal and S. Gupta, Proposal and Analysis of a Silicon MMI Coupler Based Electronically Controllable Photonic Switch, IEEE Journal of Selected Topics in Quantum Electronics, Early Access (2016).
30. B. B. Bhowmik and S. Gupta, Proposal for an optical multicarrier generator based on single silicon micro-ring modulator, Optics Communications, Vol. 349, pp.132-137 (2015).
31. P. Pattanayak and P. Kumar, Quantized feedback MIMO scheduling for heterogeneous broadcast networks, Springer Wireless Networks, (2016).
32. D. Shukla, R. K. Jha, Robust motion estimation for night-shooting videos using dual-accumulated constraint warping, Visual Communication & image representation, in press (2015).
33. V. S. Verma, R. K. Jha and Aparajita Ojha, Significant region based robust watermarking scheme in lifting wavelet transform domain, Expert systems with applications, 42, 21, 8184–8197 (2015).
34. M. Ajmeri and A. Ali, Simple Tuning Rules for Integrating Processes with Large Time Delay, Asian Journal of Control, 17, 2033-2040 (2015).
35. S. Verma, S. K. Pandey, S. K. Pandey and S. Mukherjee, Theoretical Simulation of Hybrid II-O/III-N Green Light-Emitting Diode with MgZnO/InGaN/MgZnO Heterojunction, Materials Science in Semiconductor Processing, 31 (2015).
36. M. Ajmeri and A. Ali, Two degree of freedom control scheme for unstable processes with small time delay, ISA Transactions, 56, 308-326 (2015).
37. D. Shukla, R. K. Jha and A Ojha, Unsteady camera zoom stabilization using slope estimation over Interest Warping Vectors, Pattern Recognition Letters, 68, no. 1, 197–204 (2015).
38. B. B. Bhowmik and S Gupta, Wavelength division multiplexed 16-QAM generator using silicon micro ring modulator with preconditioned electronic input, Journal of Optics, Volume 45, pp -26-38 (2016).

Papers Presented in Conferences

1. A. K. Singh, M. K. Singh and K. C. Ray, Design and Implementation of Quadruple Floating-Point CORDIC, IEEE Int., Symposium on Nanoelectronic and Information Systems (IEEE-iNIS 2015), Indore, India, (2015)
2. Md S. Ahmad and S. Sivasubramani, Optimal solution of plug in hybrid electric vehicles to minimize cost and emission in a Smart Grid - a developing country view, IEEE PES General Meeting, Denver, USA (2015)
3. S. Raj and K. C. Ray, A comparative study of multivariate approach with neural networks and Support Vector Machine for arrhythmia classification, IEEE International Conference on Energy, Power and environment (IEEE-ICEPE-2015), NIT meghaya, shillong, India (2015)
4. N. K. Singh, S. Bhaumik and S. Bhattacharya, A comparison of several nonlinear filters for ballistic missile tracking on re-entry, IEEE First International Conference On Control, Measurement And Instrumentation (CMI), Jadavpur University, Kolkata (2016)
5. J. Gupta and A. Adhya, A Cost-efficient Protection Scheme for Service Recovery Against Single Shared-risk Link Group Failure in Long-reach Passive Optical Network, IEEE International Conference on Advanced Networks and Telecommunication Systems, Indian statistical Institute, Kolkata (2015)
6. V. K. Trivedi, V. Sagar and P. Kumar, An Efficient Deterministic Scheme for Blind CFO Estimation in SC-FDMA, WPMC 2015, Hyderabad (2015)
7. P. Kumar and P. Kumar, CI/DS-CDMA scheme for Autonomous Underwater Vehicle Communication, ICC 2015, London, UK (2015)
8. A. K. Singh and S. Bhaumik, Cubature Quadrature Kalman Filter for Maneuvering Target Tracking, International Conference on Smart Sensors and Application, Kuala Lumpur, Malaysia (2015)
9. A. Kumar, Md. A. Hasan, Md. J. Akhtar, S. K. Parida and R. K. Behera, Design Optimization of Linear Induction Motor, International Conference on IEEE Power Electronics Systems and Application, Hong Kong Poly Technic University (2015)
10. S. Raj, S. Luthra and K. C. Ray, Development of Handheld Cardiac Event Monitoring System, 13th IFAC Conference on Programmable Devices and Embedded Systems (PDeS 2015), Krakow, Poland (2015)
11. P. Pattanayak, D. Pandey and P. Kumar, Error Rate Performance for Multiuser scheduling in MIMO downlink system with imperfect CSI, WVITAE 2015, Hyderabad (2015)
12. P. Biswas, S. Bhaumik and I. Patiyat, Estimation of glucose and insulin concentration using nonlinear Gaussian filters, IEEE First International Conference on Control, Measurement and Instrumentation, Jadavpur University, Kolkata (2016)
13. Md S. Ahmad and S. Sivasubramani, Feasiblity Of V2G Ideology In Developing Economy : Impact, Analysis And Operation, National Conference on Recent Trends in Power Engineering, IIT Madras, Chennai (2015)
14. A. K. Panda and K. C. Ray, FPGA Prototype of Low Latency BBS PRNG, IEEE Int., Symposium on Nanoelectronic and Information Systems (IEEE-iNIS 2015), Indore, India, (2015)
15. R. Radhakrishnan, A. K. Singh, S. Bhaumik and N. Kumar, IMM-cubature quadrature Kalman filter for maneuvering target tracking, International Conference on Signal Processing, Informatics,Communication and Energy Systems, Kozhikode, India (2015)
16. A. K. Singh and S. Bhaumik, Improved high-degree cubature Kalman filter, Sensor Signal Processing for Defence (SSPD), 2015, Edinburgh, United Kingdom (2015)
17. G. L. Raja and A. Ali, Improved Tuning of Cascade Controllers for Stable and Integrating Processes with time Delay, Michael Faraday IET Internationsl Summit, Kolkata (2015)
18. P. Pattanayak and P. Kumar, Limited Feedback Scheduling For MIMO-OFDM Broadcast Network, WPMC 2015, Hyderabad (2015)
19. V. Kumar, K. C. Ray and P. Kumar, Low-complexity CORDIC-based VLSI Design and FPGA Prototype of CI-OFDMA System for Next-generation, 12th IEEE Colloquium on Signal Processing and its Applications, Malaysia (2016)

20. R. K. Behera and O. Ojo, Modeling and Control of DAB Converter for Solar Micro-grid Application, IEEE PESA 2015, Hong Kong Polytech. University, Hong Kon (2015)
21. G. L. Raja and A. Ali, Modified Parallel Cascade Control Structure for Integrating Processes, IEEE International Conference on Recent Developments in Control, Automation and Power Engineering, Noida (2015)
22. P. Kumar, V. K. Trivedi and P. Kumar, Performance Evaluation of DQPSK OFDM for Underwater Acoustic Communications, IEEE International Underwater Technology Symposium (UT-15), Chennai, India (2015)
23. Md. A. Hasan and S. K. Parida, Performance of Single Phase Induction Motor Under Different Supply Quality, 6th IEEE International Conference on Power Systems, 2016 (ICPS 2016), Indian Institute of Technology Delhi (2016)
24. V. K. Trivedi, A. Agarwal and P. Kumar, PerformanceEvaluation of MC-CDMA over Hybrid Satellite/Underwater Acoustic Channel, IEEE ICICS 2015, Singapore (2015)
25. Md. J. Akhtar, R. K. Behera and S. K. Parida, Propulsion System Design of Electric Vehicle, International Conference on IEEE Power Electronics Systems and Application, Hong Kong Poly Technic University (2015)
26. R. Radhakrishnan, A. K. Singh, S. Bhaumik and N. K. Tomar, Quadrature Filters for Underwater Passive Bearings-Only Target Tracking, Sensor Signal Processing for Defence (SSPD), 2015, Edinburgh, United Kingdom (2015)
27. A. Agarwal, V. Mukati and P. Kumar, Rate Independent Multicarrier Variable Rate Scheme over Frequency Selective Channel, WVITAE 2015, Hyderabad (2015)
28. P. Kumar, V. K. Trivedi and P. Kumar, Recent Trends in Multicarrier Underwater Acoustic Communications, IEEE International Underwater Technology Symposium (UT-15), Chennai, India (2015)
29. P. Pattanayak and P. Kumar, SINR Based Limited Feedback Scheduling For MIMO-OFDM Heterogeneous Broadcast Networks, NCC 2016, IIT Guwahati (2016)
30. N. Kumar and Y. K. Singh, Switchable Compact Widestopband Bandstop Filter to Wideband Bandpass Filter, Asia Pacific Microwave Conference, Nanjing China (2015)
31. M. A. Hasan and S. K. Parida, Temperature Dependency of Partial Shading Effect and Corresponding Electrical Characterization of PV Panel, IEEE Power and Energy Society General Meeting, Denver, Colorado, USA (2015)
32. S. A. R. Konakalla and A. Ali, Tuning Rules for fractional order controllers for integrating and unstable process models, Michael Faraday IET International Summit, Kolkata (2015)

7.4 Other Activities

Member - Professional Bodies

1. Aneek Adhya (2007) IEEE
2. Kailash Chandra Ray (2009) IEEE
3. Pramod Kumar Tiwari (2013) IEEE, IEEE EDS
4. Preetam Kumar (2015) IEEE
5. Rajib Jha (2015) IUPRAI
6. Rajib Jha (2008) IEEE
7. Ranjan Kumar Behera (2014) IEEE
8. S. Sivasubramani (2013) IEEE
9. Sanjoy Kumar Parida (2016) IEEE Power and Energy Society
10. Sanjoy Kumar Parida (2015) IEEE Power Electronics Society
11. Sanjoy Kumar Parida (2016) IEEE
12. Sumanta Gupta (2010) IEEE
13. Sumanta Gupta (2012) IEEE Photonics Society

Member - Editorial Board

1. Saurabh Kumar Pandey Reviewer - Scientific publications

Awards & Honours

1. Sanjoy Kumar Parida (2015) Bhaskar Advanced Solar Energy Research Fellowship Award, IUSSTF, DST

2. Saurabh Kumar Pandey (2016) Biography published in Marquis Who's who in the World
3. Rajib Jha (2015) National Award for supervising Best M. Tech. Thesis (First Prize) in Electrical and Electronics engineering, by Indian Society for Technical Education, Govt. of India.
4. Rajib Jha (2015) Premium Award-2015 for Best Research Paper Published during the last Two years in IET Image Processing.
5. Ranjan Kumar Behera (2015) Whos Who in the World 2013

Fellowships

1. Sanjoy Kumar Parida (2015) Bhaskar Advanced Solar Energy Research Fellowship Award, IUSSTF,DST

Visits Abroad by Faculty Members

1. S. Sivasubramani - To Present a Paper in a conference (Denver, CO, USA) 5 days
2. Sanjoy Kumar Parida - Bhaskar Advanced Solar Energy Research Fellowship Program (Tennessee Technological University, Cookville, TN, USA) 7th May to 7th August 2015
3. Sanjoy Kumar Parida - IEEE Power and Energy Society General Meeting (Denver, CO, USA) 25-30 July 2015
4. Sanjoy Kumar Parida - IEEE Power Electronics Systems and Application (Hong Kong Polytechnic University) 15-17 December 2015
5. Ranjan Kumar Behera - Conference (Hong Kong) 15-17 Dec 2015
6. Shovan Bhaumik - Academic Interaction (Brunel University) 7-8 Sept 2015
7. Shovan Bhaumik - Attending Conference (Edinburgh) 9-10 Sept 2015
8. Kailash Chandra Ray - to present a paper in 13th IFAC Conference on Programmable Devices and Embedded Systems (Krakow, Poland) May 13-15, 2015
9. Preetam Kumar - Present a paper: ICC 2015 (London, UK) 2015
10. Preetam Kumar - Present a paper: IEEE ICICS 2015 (Singapore) 2015

Invited Lectures by Faculty Members

1. Data Converters by Yatendra Kumar Singh (NIT Patna)
2. Congestion Management Techniques by Sanjoy Kumar Parida (IIT Kanpur)
3. Ancillary Service Provisions In UK and Nord Pool Markets by Sanjoy Kumar Parida (IIT Kanpur)
4. Smart Grid Technology and Solar/Wind Power Converters by Ranjan Kumar Behera (Pauri-Garhwal, Uttara Khand, India)
5. Modeling of Wavelength Division Multiplexed High Speed Fiber Optic Transmission by Sumanta Gupta (LNM Institute of Information Technology (Deemed University), Jaipur)
6. Introduction to VLSI & Embedded System by Kailash Chandra Ray (NIT Patna)
7. Basics of image processing & Recent research areas by Rajib Jha (NIT Raipur)

Short-Term Courses, Training Programmes and Workshops organised

8. FPGA Based System Design (25th-30th May 2015)
9. Recent Advances in Power Electronics Application to Smart Grid and Electric Drives (3-5 March 2016)

8. Mechanical Engineering

8.1 Faculty List

Associate Professors

Name	Highest Degree	Research Area
Dr. Karali Patra	Ph.D	Smart materials and smart systems; Micromachining; Condition Monitoring; Robotics and Mechatronics
Dr. Manabendra Pathak	Ph.D	Computational Fluid Dynamics, Turbulent flows, Two-phase flow
Dr. Mayank Tiwari	Ph.D	Tribology, Gear, bearing wear and dynamics, Vacuum Tribology, Machine Dynamics, Rotor dynamics, Vibrations, Acoustics
Dr. Mohd. Kaleem Khan	Ph.D	Nuclear Reactor Safety; Two Phase Flow in Microchannels; Solar Thermal Technology; Non Newtonian Fluids;

Assistant Professors

Name	Highest Degree	Research Area
Dr. Anirban Mahato	Ph.D	Manufacturing processes; Materials Processing; Tribology
Dr. Akhilendra Singh	Ph.D	FEM, Meshless Methods, Computational Mechanics, Thermal Engg, Fracture Mechanics, Composites
Dr. Atul Thakur	Ph.D	bio-inspired robotics, physics-aware planning of robotic systems, and application of robotics techniques for micro-manipulation of biological cells
Dr. Probir Saha	Ph.D	Conventional and non-conventional machining, Welding, Soft computing in manufacturing process
Dr. Rishi Raj	Ph.D	Phase Change Heat Transfer, Micro-/Nano-Scale Transport, Energy, Surface Science, Microgravity Science
Dr. Somnath Roy	Ph.D	Computational Fluid Dynamics, Turbulence, Mixing and Heat Transfer, High Performance Computation
Dr. Somnath Sarangi	Ph.D	Continuum Mechanics
Dr. Subrata Kumar	Ph.D	Heat transfer, Laser Material Processing, Flow of Granular Materials, CFD
Dr. Sudhanshu Sekhar Panda	Ph.D	Tool condition monitoring, Soft Computing, Metal Cutting and Machining, Industrial application of Soft computing technique in Machining, Designing of experiments, Statistical modelling,Bio Machining, Sensors Calliberation
Dr. Anirban Bhattacharya	Ph.D	Incremental sheet metal forming, Rapid prototyping,Conventional machining, Grinding, Non-conventional machining, Welding, Modeling and simulation of Manufacturing processes and systems
Dr. Chiranjit Sarkar	Ph.D	Magnetorheological (MR) Fluids and Devices, Tribology

DST Inspire Faculty

Name	Highest Degree	Research Area
Dr. Sudheer Siddapureddy	Ph.D	Heat Transfer in Fire, Thermal Radiation, Computational Fluid Dynamics

8.2 Academic Programs

- B.Tech. in Mechanical Engineering
- M.Tech. in Mechanical Engineering

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

8.3 Research & Development Activities

Sponsored Research Projects

1. A self-adaptive electronic cooling system by enhanced pool boiling (SERB-DST, ₹35.00 Lakhs) (PI : Dr. Manabendra Pathak)
2. Cluster diagnostic study (Dept. of Industries, Bihar, ₹12.00 Lakhs) (PI : Dr. S S Panda)
3. Development of Robust Monitoring System for Drilling of Human Bone (DST, ₹13.00 Lakhs) (PI : Dr. S S Panda)
4. Effect of hydrogen contents on the burst characterisitics of zircaloy-4 cladding (BRNS, ₹26.65 Lakhs) (PI : Dr. Mohd. Kaleem Khan)
5. Enhancement of Boiling Heat Transfer via the Suppression of Coalescence in Microgravity (ISRO, ₹27.00 Lakhs) (PI : Dr. Rishi Raj)
6. Flow Boiling Heat Transfer in Scalable Nanostructured Microchannels for High Heat Flux Applications (DST SERB, ₹49.00 Lakhs) (PI : Dr. Rishi Raj)
7. Fluid-structure interaction in micro-turbine blades (CEE IIT Patna, ₹24.10 Lakhs) (PI : Dr. Somnath Roy)
8. Gap Analysis (TIFAC, ₹25.00 Lakhs) (PI : Dr. S S Panda)
9. Immersed Boundary Simulation of Low Reynolds Number Flow over Osicllating Airfoils (AR&DB, ₹20.40 Lakhs) (PI : Dr. Somnath Roy)
10. Incubation Centre in the Area of ESDM (DEITy and Bihar State Government, ₹4710.00 Lakhs) (PI : Dr. Mayank Tiwari, Dr KC Ray, Dr P Kumar)
11. Influence of Secondary Heat in Friction Stir Welding: Mechanical Properties and Metallurgical Observations (SERB-DST (Young Scientist Project) - {Project Approved, money yet to receive}, ₹25.85 Lakhs) (PI : Dr. Anirban Bhattacharya)
12. Investigations on Multiple Pool Fires: Experimental and Numerical Study (Department of Science & Technology, ₹35.00 Lakhs) (PI : Dr. Sudheer Siddapureddy)
13. Modeling and analysis of high speed hybrid micromachining (DST, ₹23.34 Lakhs) (PI : Dr. Karali Patra)
14. Monitoring heat flow phenomenon for low freeing material in CCS (DAE, BRNS, ₹19.24 Lakhs) (PI : Dr. S. S. Panda)
15. Monitoring of heat flow phenomenon of a low freezing material during continuous casting (BRNS, ₹14.79 Lakhs) (PI : Dr. S. S. Panda)
16. Real time tool wear monitoring and compensation method for micro-EDM drilling and Rmicro-EDM (DST, ₹20.75 Lakhs) (PI : Dr. Probir Saha)
17. Robust Motion Planning of Bio-Inspired Amphibious Robots (Department of Science and Technology, GoI, ₹17.89 Lakhs) (PI : Dr. Atul Thakur)
18. Soft active dielectric elastomers for human motion based energy harvesting (DST, ₹41.14 Lakhs) (PI : Dr. Karali Patra)

Consultancy Projects

1. Comprehensive survey of MSME clusters in Bihar. (Udyog Mitra, Bihar Govt, ₹5.40 Lakhs) Consultant Name: Somnath Roy Somnath Sarangi and S S Panda
2. Preparation of Detailed Project Report for Center for Instrumentation Cum Robotics (Department of Science and Technology, GoB, ₹3.25 Lakhs) Consultant Name: Atul Thakur
3. Technology gap analysis for rice mill cluster at Lakhisarai (TIFAC DST, ₹7.50 Lakhs) Consultant Name: Somnath Sarangi
4. Technology gap analysis for rice mill machinery manufacturing cluster at Raxaul (TIFAC DST, ₹7.50 Lakhs) Consultant Name: Somnath Roy

Patents (filed / granted)

1. Patent Name:Graphene Condenser Coatings; Patent Owner: Rishi Raj
2. Patent Name:Handle operated garbage & soil collector; Patent Owner: Mayank Tiwari
3. Patent Name:Surfactant Based Boiling System for Zero Gravity; Patent Owner: Rishi Raj

Book(s) Published

1. Mohd. Kaleem Khan: Fluid Mechanics and Machinery published by Oxford University Press (2015)

Papers Published in Journals

1. S. Suman, M. K. Khan and M. Pathak, Performance enhancement of solar collectors-a review, Renewable and Sustainable Energy Reviews, 49192-210 (2015).
2. K. Patra and R. K. Sahu, A visco-hyperelastic approach to modelling rate-dependent large deformation of VHB 4910 elastomer, International journal of mechanics and materials in Design, Vol. 11, pp. 79-90 (2015).
3. M. Kumar, S. Roy and Md. S. Ali, An efficient immersed boundary algorithm for simulation of flows in curved and moving geometries, Computers and Fluids, 129, 159-178 (2016).
4. S. Mandal, S. Kumar, P. Bhargava, C. H. Premsingh, C. P. Paul and L. M. Kukreja, An Experimental Investigation and Analysis of PTAW Process, Materials and Manufacturing Processes, 30, 1131-1137 (2015).
5. S. Mandal, S. Kumar, P. Bhargava and C. P. Paul, Analysis of discontinuous bead formation by PTAW process, Materials and Manufacturing Processes, Accepted (2016).
6. C. K. Nirala, P. Saha, A New Approach of Tool Wear Monitoring and Compensation in RμEDM Process, Materials and manufacturing processes, Vol: 31 pp 483–494 (2015).
7. C K Nirala and P. Saha, Evaluation of μEDM-Drilling and μEDM-dressing Performances Based on Online Monitoring of Discharge Gap Conditions, International Journal of Advanced Manufacturing Technology, DOI: 10.1007/s00170- (2015).
8. C. K. Nirala and P. Saha, Towards development of a new online tool wear compensation strategy in micro-electro-discharge machining drilling, Proc IMechE Part B: Journal of Engineering Manufacture, DOI:10.1177/09544054 (2015).
9. Y. K. Prajapati, M. Pathak and M. K. Khan, Clogging behaviour of elongated bubble in uniform and diverging microchannel, Proceedings of the MMechE, Part C: Journal of Mechanical Engineering Science, DOI: 10.1177/0954406 (2015).
10. A. Bhattacharya and S. Singla, Dissimilar GTAW between AISI 304 and AISI 4340 Steel: Multi-response Optimization by Analytic Hierarchy Process, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engine, Available online (2016).
11. Antao, D. S., Adera, S., Zhu, Y., Farias, E., Raj, R., and Wang, E. N., Dynamic Evolution of the Evaporating Liquid-Vapor Interface in Micropillar Arrays, Langmuir, 519-526 32(2) (2015).
12. R. Bhattacharyya, S. Sarangi and A. K. Samantaray, Effect of stress-softening on the ballooning motion of hyperelastic strings, International Journal of Engineering Science, Volume 96, 19–33 (2015).
13. R. K. Sahu, A. Saini, D. Ahmad, K. Patra and J. A. Szpunar, Estimation and validation of Maxwell stress of planar dielectric elastomer actuators, Journal of Mechanical Science and Technology, Vol. 30, pp. 429-436 (2016).
14. S. S. Panda and R. K. Pandey, Evaluation of Delamination in Drilling of Bone, Medical Engineering and Physics, 37(7), 657-664 (2015).
15. K. Patra, R. S. Anand, M. Steiner and D. Biermann, Experimental analysis of cutting force in micro-drilling of austenitic stainless steel (X5CrNi18-10), Materials and Manufacturing processes, Vol. 30, pp. 248-255 (2015).
16. R. K. Sahu, K. Patra and J. Szpunar, Experimental study and numerical modeling of creep and stress relaxation of dielectric elastomers, Strain, Vol. 51, pp. 43-54 (2015).
17. S. Prakash and S. Kumar, Fabrication of microchannels on transparent PMMA using CO2 Laser (10.6 μm) for microfluidic applications: An experimental investigation, International Journal of Precision Engineering and Manufacturing, 16, 361-366 (2015).
18. H. Pathak, A. Singh, I. V. Singh and S. K. Yadav, Fatigue crack growth simulations of 3-D linear elastic cracks under thermal load by XFEM, Frontiers of Structural and Civil Engineering, 9,359-382 (2015).

19. A. Raj and A. Thakur, Fish-inspired robots: design, sensing, actuation, and autonomy—a review of research., Bioinspiration & Biomimetics,, 11(3) (2016).

20. A. Bhattacharya and S. Singla, Mechanical Properties and Metallurgical Characterization of Dissimilar Welded Joints between AISI 316 and AISI 4340, Transactions of the Indian Institute of Metals, Available online (2016).

21. A. K. Verma, S. Sarangi and M. Kolekar, Misalignment Faults Detection in Induction Motor Based on Multiscale Entropy and Artificial Neural Network, Journal of Electric power Components and Systems, DOI: 10.1080/1532500 (2016).

22. S. S. Panda and R. K. Pandey, Multi-Performance Optimization of Bone Drilling Using Taguchi Method Based on Membership Function, Journal of Measurement, 59, 9-13, (2015).

23. H. Pathak, A. Singh and I. V. Singh, Numerical Simulation of 3-D Thermo-Elastic Fatigue Crack Growth Problems using Coupled FE-EFG Approach, Institution of Engineers: Mechanical Series C,.

24. M. Kumar, S. Roy and S. S. Panda, Numerical simulation of continuous casting of steel alloy for different cooling ambiences and casting speeds using immersed boundary method, Journal of Engineering Manufacture, DOI: 10.1177/0954405 (2015).

25. S. S. Panda and R. K. Pandey, Optimization of multiple quality characteristics in bone drilling using grey relational analysis, Journal of orthopedic, 12 (1), 39-45 (2015).

26. S. Prakash and S. Kumar, Profile and depth prediction in single-pass and two-pass CO 2 laser microchanneling processes, Journal of Micromechanics and Microengineering, 25, 035010 (2015).

27. R. K. Sahu and K. Patra, Rate dependent mechanical behavior of VHB4910 elastomer, Mechanics of Advanced Materials and Structure, Vol. 23, pp. 170-179 (2016).

28. M.A. Hassan, M. Pathak and M. K. Khan, Rayleigh-Benard Convection in Herschel-Bulkley fluid, Journal of Non-Newtonian Fluid Mechanics, 226, 32-45 (2015).

29. M. Q. Raza, N. Kumar, and R. Raj, Surfactants for Bubble Removal against Buoyancy, Scientific Reports, 19113-6 (2016).

30. H. Pathak, A. Singh, I. V. Singh and M. Brahmankar, Three-Dimensional Stochastic Quasi-Static Fatigue Crack Growth Simulations Using Coupled FE-EFG Approach, Computers and Structures, 160,1-19 (2016).

31. Y. K. Prajapati, M. Pathak and M. K. Khan, Transient analysis of microchannel heat sink during single phase and flow boiling conditions, Applied Mechanics Material, 819101-106 (2016).

32. D. S. Antao, S. Adera, E. Farias, R. Raj, and E. N. Wang, Visualization of Evaporating Liquid-Vapor Interface in Micropillar Arrays, Journal of Heat Transfer - Transactions of ASME, 020910-138 (2016).

Papers Presented in Conferences

1. S. Ahmed and P. Saha, Downscaling the Process of Friction Stir Welding: An Analysis of Temperature Distributions, 23rd National Heat and Mass Transfer Conference & 1st International ISHMT-ASTFE Heat and Mass Transfer Conference, LPSC(ISRO), Trivandrum, Kerala, India, (2015)

2. Md. S. Ali, M. K. Jaisawal and S. Roy, A Computational study of flow over an airfoil at low Reynolds number using immersed boundary method, 42nd Fluid Mechanics and Fluid Power Conference, NITK Surathkal (2015)

3. S. Mandal, N. Kumar, S. Kumar, P. Bhargava, C. H. Premsingh, C. P. Paul and L. M. Kukreja, A study on porosity in material deposition by PTAW process, International Conference on Laser and Plasma Application in Materials Science, Kolkata (2015)

4. Sathish G. P. and A. Thakur, Automated Municipal Solid Waste Sorting for Recycling using a Mobile Manipulator, 40th Mechanisms and Robotics Conference (MR) at 2016 ASME-IDETC, Charlotte, NC, USA (2016)

5. P. Kulkarni, A. Kumar, A. D. Thakur and A. Thakur, Automated non-prehensile magnetic micromanipulation in presence of spatially varying flow field, Proceedings of 10th International Conference on Micro- and

Nanosystems (MNS) at 2016 ASME-IDETC, Charlotte, NC, USA (2016)

6. N. Kumar, Md. Q. Raza and R. Raj, Comparison of Bubble Behavior and Heat Transfer during Pool Boiling with Aqueous Surfactant Solution on Upward and Downward Facing Heater,CHEMCON 2015, 68th Annual Session of Indian Institute of Chemical Engineers, IIT Guwahati (2015)
7. H. Pathak, A. Singh and I. V. Singh, Composite Patch Repair of Structural Members by Coupled EF-EFG Approach, ICMAE 2015, Singapore (2015)
8. S. S. Panda and P. Kumar, Deformation validation and property analysis of pure aluminium during two turn equal channel angular pressing, COPEN, IIT Bombay (2015)
9. A. V. Sopeltzev, Aleksandr A. Dyakonov and K. Patra, Dynamic Model of material deforming under microgrinding, Procedia Engineering, International Conference on Industrial Engineering, Cheliabinks, Russia (2015)
10. S. Prakash and S. Kumar, Effects of compound parameters in CO2 laser microchanneling of PMMA, International conference on Application of Lasers in Manufacturing, New Delhi (2015)
11. A. Saini, D. Ahmad and K. Patra, Electro-mechanical performance analysis of inflated dielectric elastomer membrane for micro pump applications, Proc. SPIE 9798, Electroactive Polymer Actuators and Devices (EAPAD), Las Vegas, Nevada,USA (2016)
12. N. K. Singh, K. Patra and A. Kumar, Energy harvesting using dielectric elastomer, First International Conference on Advanced Materials for Power Engineering (ICAMPE-2015), Kottayam, Kerala, India (2015)
13. P. Kumar and A. Singh, Experimental and Simulation Study of AA 5754 Tearing Energy, 5th International Conference of Materials Processing and Characterization, Hyderabad (2016)
14. T. Pratap and K. Patra, Experimental Investigation on the effects of process variables in micro-end milling of Ti-6Al-4V titanium alloy, International Conference on Precision, Meso, Micro and Nano Engineering (COPEN), Mumbai, India (2015)
15. R. S. Anand and K. Patra, Extracting specific cutting force coefficients in micro drilling with tool edge radius effects, ICMMR 2015, Kualalumpur, Malaysia (2015)
16. D. P. Ghosh, D. Mohanty, S. K. Saha and R. Raj, Fabrication of Nanostructured Microchannels for Enhancement of Single and Multiphase Heat Transfer, 23rd National Heat and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference, Thiruvananthapuram, India (2015)
17. S. S. Panda and P. Kumar, Finite element analysis of die offset in two-turn incremental ECAP, ICMPC-2016, (2016)
18. A. Das, A. D. Thakur and A. Thakur, Image guided automated non-prehensile magnetic micromanipulation of cells, 9th International Conference on Micro- and Nanosystems (MNS) at 2015 ASME-IDETC, Boston, MA, USA (2015)
19. M. Kumar and S. Roy, Immersed Boundary Method Simulation of Natural Convection over Moving and Freely Falling Isothermal Cylinder, 23rd National and First International ISHMT Conference, LPSC, ISRO, Trivandrum (2015)
20. D. Sarkar, N. Upadhyay, S. Roy and S. C. Rana, Immersed Boundary Simulation of Cardiovascular Flow, 42nd Fluid Mechanics and Fluid Power Conference, NITK Surathkal (2015)
21. Y. K. Prajapati, M. Pathak and M. K. Khan, Investigation of Flow Boiling Heat Transfer in Segmented finned Microchannels, 23rd National and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC2015), Thiruvananthapuram, Kerala (2015)
22. I. Ahmad, M. Pathak and M. K. Khan, Investigation of Natural Convection in a Differentially Heated Room with Ventilation and Transpiration Port, Global Conference on Renewable Energy (GCRE-2016), NIT Patna, Bihar (2016)
23. N. Kumar and S. Kumar, Laser Surface Structuring of Ti-6Al-4V for Biological Application, International Conference on Applications of Lasers in Manufacturing, New Delhi (2015)

24. T. Pratap, K. Patra and A. A. Dyakonov, Modeling cutting force in micro-milling of Ti-6Al-4V titanium alloy, International Conference on Industrial Engineering, Cheliabinks, Russia (2015)
25. R. Kumar, M. Tiwari and A. Singh, Numerical analysis of an oscillator with nonlinear clearance using smoothening function, National Symposium of Rotor Dynamics, NIT Rourkela (2016)
26. N. R. Bansal, M. Kumar and S. Roy, Numerical Simulation for Optimization of Cooling Load in Data Centres, 23rd National and First International ISHMT Conference, LPSC, ISRO, Trivandrum (2015)
27. S. Prakash and S. Kumar, Parametric effects and dimensional predictions in CO2 laser microchanneling on PMMA, International Conference on Advanced and Agile Manufacturing Systems, Sultanpur (2015)
28. D. S. Thakur, M. K. Khan and M. Pathak, Parametric Investigation of Artificially Roughened Solar Air Heater with Parabolic Rib Geometry, Global Conference on Renewable Energy (GCRE-2016), NIT Patna, Bihar (2016)
29. B. C. Shah, Petr Švec, A. Thakur and S. K. Gupta, Path Planning for Unmanned Vehicles Operating in Time-Varying Flow Fields, ICAPS Workshop on Planning and Robotics (PlanRob 2016), London, UK (2016)
30. Md. Q. Raza and R. Raj, Pool Boiling Critical Heat Flux Enhancement for Reduced Gravity Application, 23rd National Heat and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference, Thiruvananthapuram, India (2015)
31. S. Raj, M. Pathak and M. K. Khan, Prediction of Bubble Departure Diameter in Subcooled Flow Boiling, 2nd International Conference on Thermal Energy and Environment (INCOTEE 2016), Kalasalingam University, Tamil Nadu (2016)
32. H. Pathak, S. Bhatacharya, A. Singh, I. V. Singh, Simulation of three dimensional cracks in FGM using XFEM, 17th ISME Conference, IIT Delhi (2015)
33. R. S. Anand, K. Patra, M. Steiner and D. Biermann, Size effect of micro-drilling of austenitic stainless steel (X5CrNi18-10), International Conference on Precision, Meso, Micro and Nano Engineering (COPEN), Mumbai, India (2015)
34. A. Chattopadhyay, A. Thakur and R. Raj, Spline Based Modeling of Static and Sliding Droplets with Contact Angle Hysteresis, 42nd National Conference on Fluid Mechanics and Fluid Power, National Institute of Technology, Surath (2015)
35. S. Prakash and S. Kumar, Statistical and Analytical approaches for Depth and Profile Prediction in CO2 Laser Microchanneling on Poly-methyl- methacrylate (PMMA), International Conference on Laser and Plasma Application in Materials Science, Kolkata (2015)
36. Md. Q. Raza and R. Raj, Surfactant-Enhanced Pool Boiling Heat Transfer During Surface Tension Dominated Boiling Regime, 9th International Conference on Boiling and Condensation Heat Transfer, Boulder, Colarado, USA (2015)
37. M. A. Hassan, M. Pathak and M. K. Khan, Thermal instabilities in convection of viscoplastic fluids, 23rd National and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC2015), Thiruvananthapuram, Kerala (2015)
38. D. Kumar, S. Sarangi and M. Tiwari, Vibrations in Rolling Element Bearings Caused by Surface Defects, National Symposium on rotordynamics 2016, NIT Rourkela (2016)

8.4 Other Activities

Member - Professional Bodies

1. Akhilendra Singh : Indian Society of Theoratical and Applied Mechanics
2. Akhilendra Singh Socity of Automotive Engineers
3. Atul Thakur (2008) ASME
4. Atul Thakur (2011) IEEE
5. Manabendra Pathak (2010) American Society of Mechanical Engineers (ASME)
6. Manabendra Pathak (2013) Indian Society for Heat and Mass Transfer (ISHMT)

7. Manabendra Pathak (2012) Society of Automotive Engineers India (SAE India)
8. Manabendra Pathak (2015) American Society of Thermal and Fluids Engineers (ASTEF)
9. Mayank Tiwari (2006) Tribology Soceity of India
10. Mohd. Kaleem Khan (2011) ASME
11. Mohd. Kaleem Khan (2010) ASHRAE
12. Rishi Raj (2015) Indian Society of Heat and Mass Trabnsfer
13. Rishi Raj American Society of Thermal and Fluid Engineers
14. SOMNATH ROY (2014) Indian Society of Heat and Mass Transfer

Member - Editorial Board

1. Mayank Tiwari (2015) Associate Technical Editor - Experimental Techniques

Visits Abroad by Faculty Members

1. Rishi Raj - Present a paper and Session Chair (Boulder, Colarado, USA) April 26-30, 2015
2. Akhilendra Singh - To present paper (Singapore) 12-14 December 2015
3. Karali Patra - Guest lecture and research work (NUS Singapore) June 2015
4. Karali Patra - Paper presentation in conference (Kualalumpur, Malaysia) 11-12 June, 2015
5. Karali Patra - Paper presentation in SPIE conference (Las Vegas, Nevada, USA) 20-24 March, 2016

Invited Lectures by Faculty Members

1. Planning a Career in Research by Rishi Raj (IIT Guwahati)
2. Surfactnats for Bubble Removal Against Buoyancy by Rishi Raj (ISRO Satellite Centre)
3. Nanotechnology for Energy Efficient Thermal Management by Rishi Raj (College of Engineering, Adoor, Kerela)
4. Nanotechnology for Two Phase Flow and Heat Transfer Enhancement by Rishi Raj (NIT Agartala)
5. Influence of Hydrogen Content on Burst Characteristics of Zircaloy-4 Clad Tube by Mohd. Kaleem Khan (BRNS, Anushakti Nagar, Mumbai)
6. High Performance Computing in CFD by Somnath Roy (College of Engineering, Adoor)
7. Micro-fabrication by Probir Saha (NIT Patna)
8. Sensitization workshop for Technological GAP Analysis at Raxaul rice milling machinery manufacturing by Probir Saha (Raxaul)
9. Usage of MATLAB and ANSYS in FEA Problems by Akhilendra Singh (Pauri Garhwal, G B Pant University)
10. Computational fluid dynamics and heat transfer for engineering applications by Manabendra Pathak (Velammal College of Engineering and Technology, Madurai)
11. CFD Techniques for Solving Fluid Flow and Heat Transfer Problems by Manabendra Pathak (College of Engineering Adoor, Kerela)
12. Soft electro-active materials for actuators and energy harvesting applications by Karali Patra (NUS, Singapore)
13. Magnetic Microrobot Assisted Selective Non-Prehensile Cell Micromanipulation by Atul Thakur (IISER Bhopal)

9. Materials Science and Engineering

9.1 Faculty List

Assistant Professors

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

9.2 Academic Programs

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

9.3 Research & Development Activities

Sponsored Research Projects

1. Fabrication of Robust Plasma Sprayed Rare Earth Oxide Hydrophobic Coating for the High Temperature and Wear Resistance Applications (SERB-DST, ₹26.74 Lakhs) (PI : Dr. Anup Kumar Keshri)
2. Improvement of low temperature performance and room temperature physical properties of elastomer (Denka Kagaku Kokyo K.K, Japan) (PI : Dr. Dinesh Kumar Kotnees)
3. Surface Modified Metallic Orthopedic Implant for Sustained Drug Release (DST, ₹17.50 Lakhs) (PI : Dr. Debrupa Lahiri (IIT Roorkee), Co-PI : Dr. Anup Kuma Keshri)
4. Synthesis & characterisation of faceted nanocrystalline powders of Ceria-Zirconia and related systems (SERB - DST, ₹26.75 Lakhs) (PI : Dr. Anirban Chowdhury)

Papers Published in Journals

1. R. Kumar, K. Singh, D. Chakravarty and A. Chowdhury, Attaining near-theoretical densification in nanograined pyrochlore $La_2Zr_2O_7$ (LZ) ceramic at 1150 °C by spark plasma sintering, Scripta Materialia, 117, 37-40 (2016).
2. M. Sribalaji, P. Arunkumar, K. Suresh Babu and A. K. Keshri, Crystallization mechanism and corrosion property of electroless nickel phosphorus coating during intermediate temperature oxidation, Applied Surface Science, 355 (112-120) (2015).
3. S. S. Banerjee, K. D. 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, 300 (2015).
4. S. Singh, M. Sribalaji, N. P. Wasekar, S. Joshi, G. Sundararajan, R. Singh and A. K. Keshri, Microstructural,Phase evolution and corrosion properties of silicon carbide reinforced pulse electrodeposited nickel–tungsten composite coatings, Applied Surface Science, 364 (264–272) (2015).
5. S. S. Banerjee, K. D. Kumar, A. K. Sikder and A.K. Bhowmick, Nanomechanics and origin of rubber elasticity of novel nanostructured thermoplastic elastomeric blends using atomic force microscopy, Macromolecular Chemistry and Physics, 216 (2015).
6. D. Lahiri, J. Karp, A. K. Keshri, C. Zhang, G. S.Dulikravich, L. J. Kecskes and A. Agarwal, Scratch induced deformation behavior of hafnium based bulk metallic glass at multiple load scales, Journal of Non-Crystalline Solids, 410 (118–126) (2015).

7. K. Singh, R. Kumar and A. Chowdhury, Synthesis of La-doped ceria nanoparticles: impact of lanthanum depletion, Journal of Materials Science, 51, 4134–4141 (2016).
8. D. Prusty, A. Pathak, M. Mukherjee, B. Mukherjee and A. Chowdhury, TEM and XPS Studies on the Faceted Nanocrystals of Ce0.8Zr0.2O2, Materials Characterization, 100, 31-35 (2015).

Papers Presented in Conferences

1. R. Kumar, Md. Sharib and D. K. Kotnees, Dissolution of PLA Fabric in Furfuryl alcohol and subsequent curing to Polyfurfuryl Alcohol, Polymer-Solvent Complexes and Intercalates, IACS Kolkata, Kolkata (2016)
2. A. K. Keshri and A. Agarwal, Fracture Strength of Carbon Nanotube Reinforced Plasma Sprayed Aluminum Oxide Coating, International Conference on Composite Materials, Dubai, UAE (2015)
3. Sribalaji. M, O. S. A. Rahman, T. Laha and A. K. Keshri, Nanoindentation and Nanoscratch Behavior of Electroless Deposited Nickel-Phosphorus Coating, Research Scholar Day,, IIT Patna (2016)
4. K. Singh, R. Kumar and A. Chowdhury, Structural and Catalytic Properties of Ce0.8La0.2O2-x, ICMFA 2015, IIT - BHU (2015)
5. Md Sharib, R. Kumar, D. K. Kotnees, Tensile and flexural properties of Thermoplastics Biolymer incorporated in Polyfurfuryl Alcohol A Thermost Biopolymer, APM 2016, CIPET Ahmedabad (2016)
6. Rishu Kumar, Kushal Singh, Anirban Chowdhury, Densification of Phase Pure La2Zr2O7 Nano-Powders by Spark Plasma Sintering, ICMFA 2015 , Indian Institute of Technology (Banaras Hindu University), Varanasi, (UP) India, Oct. 27-29, 2015.

9.4 Other Activities

Member - Professional Bodies

1. Anup Kumar Keshri Indian Institute of Metals (IIM)

Visits Abroad by Faculty Members

1. Dinesh Kumar Kotnees - Technical Presentation on the Denka Project (Tokyo, Japan) December 12-17

Invited Lectures by Faculty Members

1. Interplay between bulk viscoelasticity and surface energy in tack of rubber-tackifier blends by Dinesh Kumar Kotnees (RUBBERCON 2015- Chennai)
2. Technical Presentation on the Denka Project by Dinesh Kumar Kotnees (TOKYO, JAPAN)

10. Chemistry




10.1 Faculty List

Associate Professors

Name	Highest Degree	Research Area
Dr. Debabrata Seth	Ph.D	Photophysics, Chemical Dynamics, Ionic liquids
Dr. Md. Lokman Hakim Choudhury	Ph.D	Diversity Oriented Synthesis (DOS) using multicomponent reactions (MCRs), the discovery and development of new synthetic methods with particular interest in heterocyclic chemistry and total synthesis of various biologically active natural products and structural analogues
Dr. Neeladri Das	Ph.D	Self-assembly and Supramolecular Chemistry, Organic Synthesis, Inorganic-organic hybrid material synthesis, Coordination polymers / Metal organic framework (MOF), Polymer Chemistry - syntheses/ characterization/applications
Dr. 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
Dr. Sahid Hussain	Ph.D	Nano-scale Materials, Green Chemistry and Synthetic Organic Methodologies

Assistant Professors

Name	Highest Degree	Research Area
Dr. Amit Kumar	Ph.D	Synthesis of modified sugar, glycosyltransferase inhibitors, Oligosaccharides and Chiral catalyst. Application of Metal catalysis in the synthesis of natural products and Medicinal useful Pharmacophores
Dr. Ranganathan Subramanian	Ph.D	Spectroscopy, Computational, Instrumentation development, Physical Chemistry

Name	Highest Degree	Research Area
Dr. T. Rajagopala Rao	Ph.D	Quantum reactive scattering of gas phase bi-molecular reactions, non-adiabatic coupling effects, geometric phase effects, nuclear spin symmetry effects, isotopic effects, spectral attributes of quasi-bound states, construction of potential energy surfaces

10.2 Academic Programs

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

10.3 Research & Development Activities

Sponsored Research Projects

1. Design And Synthesis of Triptycene Based Microporous Polymers (CSIR New Delhi, ₹14.00 Lakhs) (PI : Dr. Neeladri Das)
2. DNA guided assembly of Quantum dot-Photosensitizer conjugate for photodynamic therapy (BRNS, ₹25.00 Lakhs) (PI : Dr. Prolay Das)
3. DNA supramolecular self assembly for construction of functional nanostructures (DBT, ₹25.00 Lakhs) (PI : Dr. Prolay Das)
4. Functionalization of the Carbohydrates: Designing New Strategies for the Synthesis of Natural and Modified Sugars via Metal Catalysis (SERB-DST, ₹24.80 Lakhs) (PI : Dr. Amit Kumar)
5. Imidates: A New Class of N-H Directing Group for C(sp2)-H Activation and Tools for Synthesis (CSIR-DELHI, ₹21.00 Lakhs) (PI : Dr. Amit Kumar)
6. Quantum dynamical studies on bimolecular reactions of practical and fundamental interest. (DST (INSPIRE), ₹35.00 Lakhs) (PI : Dr. T. Rajagopala Rao)
7. Study of Clustered DNA-Damage Repair Mechanism in Nucleosome Core Particles (DST, ₹25.00 Lakhs) (PI : Dr. Prolay Das)

Papers Published in Journals

1. D. Patra, N. Biswas, B. Kumari, P. Das, N. Sepay, S. Chatterjee, M. G. B. Drewe and T. Ghosh, A family of mixed-ligand oxidovanadium(V) complexes with aroylhydrazone ligands: a combined experimental and computational study on the electronic effects of para substituents of hydrazone ligands on the electronic properties, DNA binding and nucleas, RSC Advances, 5, 92456-92472 (2015).
2. A. B. Velappan, B. Maity, B. Kasper, R. E. McKnight, D. Seth and J. Debnath, Alteration in DNA Binding Pattern of Conformationally Locked NC(O)N System: A Spectroscopic Investigation, International Journal of Biological Macromolecules, 85,497 (2015).
3. S. Begum and R. Subramanian, A theoretical investigation of the energetic and spectroscopic properties of the gas-phase linear proton-bound cation–molecule complexes, XCH+–N2 (X = O, S), Journal of Molecular Modeling, 22 (2016).
4. S. Begum, A. Vardhan, A. Chaudhary and R. Subramanian, Disruption of the self-molecular association of pentanol in binary mixtures with alkylbenzoates: a dielectric relaxation spectroscopy study, RSC Advances, 6, 1260-1267 (2016).
5. S. Bhowmick, S. Chakraborty, A. Das, S. Nallapeta and N. Das, Pyrazine Motif Containing Hexagonal Macrocycles: Synthesis, Characterization, and Host–Guest Chemistry with Nitro Aromatics, Inorg. Chem., 54 (18), 8994–900 (2015).
6. R. Mishra and L. H. Choudhury, Catalyst-free microwave-assisted arylglyoxal-based multicomponent reactions for the synthesis of fused pyrans, RSC Advances, 6, 24464-24469 (2016).
7. S. Singh, A. Chakraborty, V. Singh, A. Molla, S. Hussain, M. K. Singh and P Das, DNA mediated assembly of Quantum Dot-

Protoporphyrin IX FRET Probe and Effect of FRET Efficiency on ROS Generation, Physical Chemistry Chemical Physics, 17, 5973-5981 (2015).

8. R. Kumari, S. S. Banerjee, A. K. Bhowmick and P. Das, DNA–melamine hybrid molecules: from self-assembly to nanostructures, Beilstein J. Nanotechnol., 6, 1432-1438 (2015).
9. A. Ahmed, P. Sarkar, I. Ahmad, N. Das and A. K. Bhowmick, Influence of the Nature of Acrylates on the Reactivity, Structure, and Properties of Polyurethane Acrylates, Ind. Eng. Chem. Res., 54 (1), 47–54 (2015).
10. S. Singh, R. Kumari, A. Chakraborty, S. Hussain, M. K. Singh and P. Das, Melamine-DNA Encoded Periodicity of Quantum dot Arrays, Journal of Colloid and Interface Science, 461, 45–49 (2016).
11. A. Chatterjee, B. Maity, S. A. Ahmed, D. Seth, Photophysics and Rotational Dynamics of a Hydrophilic Molecule in a Room Temperature Ionic Liquid, Photochemistry and Photobiology, 91, 1056 (2015).
12. B. Maity, A. Chatterjee, S. A. Ahmed, D. Seth, Photophysics of Crystal Violet Lactone in Reverse Micelles and its Dual Behaviour, RSC Advances, 5, 55015 (2015).
13. S. Bhowmick, S. Chakraborty, A. Das, P. R. Rajamohanan and N. Das, Pyrazine Based Organometallic Complex: Synthesis, Characterization and Supramolecular Chemistry, Inorg. Chem., 54 (6), 2543–2550 (2015).
14. S. Bhowmick, S. Chakraborty, S. R. Marri, J. N. Behera and N. Das, Pyrazine-Based Donor Tectons: Synthesis, Self-Assembly and Characterization, RSC Adv., 6, 8992-9001 (2016).
15. A. Chatterjee, B. Maity, S. A. Ahmed and D. Seth, Red Emitting Dye in Room Temperature Ionic Liquids: A Spectroscopic Study, Journal of Photochemistry and Photobiology A: Chemistry, 321, 202 (2015).
16. V. Singh, B. Kumari and P. Das, Repair efficiency of clustered abasic sites by APE1 in nucleosome core particles is sequence and position dependent, RSC Advances, 5, 23691-23698. (2015).
17. A. Molla, S. Hussain, S. Singh, R. Kumari, A. Chakraborty, S. Hussain, M. K. Singh and P. Das, RSC Advances, 6, 5491–5502. (2016).
18. V. Singh, M. Mohan, A. Roy and P. Das, Self assembled nanocages from DNA–protoporphyrin hybrid molecules,, RSC Advances, 5, 89025-89029. (2015).
19. S. Chakraborty, S. Bhowmick, J. Ma, H. Tan, N. Das, Size Dependent Effect of New Organometallic Triptycene Tectons on the Dimension of Self-Assembled Macrocycles, Inorg. Chem. Front., 2, 290-297 (2015).
20. S. A. Ahmed, A. Chatterjee, B. Maity and D. Seth, Supramolecular Interaction of a Cancer Cell Photosensitizer in the Nanocavity of Cucurbit[7]uril: A Spectroscopic and Calorimetric Study, International Journal of Pharmaceutics, 1-2, 103 (2015).
21. A. Molla, M. Sahu and S. Hussain, Synthesis of Bi-In-Zn-S using soft template and its efficient visible-light-driven decomposition of methylene blue, RSC Advances, 5, 41941-41948 (2015).
22. S. Mondal and N. Das, Synthesis of Triptycene Based Non-Conjugated Polytriazole: Temperature Dependent Regioselectivity and Host-Guest Interaction with Nitroaromatics, Polymer, Volume 75, 109-118 (2015).
23. S. A. Ahmed, A. Chatterjee, B. Maity, D. Seth, Thermodynamic Behavior of Binary Mixtures of 1-Butyl-1-methylpyrrolidinium Iodide and Alcohols, Journal of Chemical & Engineering Data, 60, 2301 (2015).
24. S. Mondal and N. Das, Triptycene based 1,2,3-Triazole linked Network Polymers (TNPs) : Small Gas Storage and Selective CO2 Capture, J. Mater. Chem. A, 3, 23577-23586 (2015).
25. A. Molla, M. Sahu and S. Hussain, Under dark and visible light: fast degradation of methylene blue in presence of Ag-In-Ni-S nanocomposites, Journal of Materials Chemistry A, 3, 15616–15625 (2015).
26. J. Sanmartín-Matalobos, M. Fondo, A. M. García-Deibe, M. Amoza, P. Bermejo, M. R. Domínguez, A. J. Mota, J. L. Pérez-Lustres, S. Bhowmick and N. Das, Zinc-mediated diastereoselective assembly of a trinuclear circular helicate, RSC Adv., 6, 21228-21234 (2016).

Papers Presented in Conferences

1. S. Begum and R. Subramanian, Gas-Phase Linear Ion-Molecule Complexes of OCH+-CO, OCH+-OC, and XCH+-N2 (X=O, S): A Theoretical Analysis, 51st Symposium on Theoretical Chemistry, University of Potsdam, Germany (2015)
2. R. Mishra and L. H. Choudhury, Microwave Assisted Multicomponent Reactions (MCRs): A Catalyst-free Method for the Synthesis of Fused Pyrans, CRSI National Symposium in Chemistry, Panjab University,Chandigarh (2016)
3. N. Das, S. Bhowmick and S. Chakraborty, Pyrazine Based Tectons in the Self-Assembly of Finite Two- Dimensional Supramolecular Ensembles, 6th EuCheMS Conference on Nitrogen Ligands, Beaune France (2015)
4. S. Begum and R. Subramanian, Supermolecular and Sapt Analysis OF SO2-O2 and SO2-N2 van der Waals Complexes and Atmospheric Significances, 51st Symposium on Theoretical Chemistry, University of Potsdam, Germany (2015)

10.4 Other Activities

Member - Professional Bodies

1. Amit Kumar (2014) Chemical Research Society of India
2. Amit Kumar (2015) Association of carbohydrate Chemist and Technologist-India
3. Amit Kumar (2016) Indian Science Congress
4. Md. Lokman Hakim Choudhury (2015) Chemical Research Society of India
5. Neeladri Das (2014) American Chemical Society (ACS)
6. Ranganathan Subramanian (2014) Chemical Research Society of India
7. Ranganathan Subramanian (2015) American Chemical Society

Member - Editorial Board

1. Amit Kumar (2013) Editorial Board Member - Journal of Pharma -Bio-management
2. Md. Lokman Hakim Choudhury (2016) Editorial Board Member - American Journal of Organic Chemistry
3. Prolay Das Member, Editorial board - Oriental Journal of Chemistry
4. Ranganathan Subramanian (2016) Editorial Member - International Journal of Thermodynamics and Chemical Kinetics
5. Ranganathan Subramanian (2016) Editorial Member - International Journal of Environmental Chemistry
6. Ranganathan Subramanian (2015) Editorial Member - Applied Physics Research

Awards & Honours

1. Neeladri Das (2015) awarded the Chemical Science Poster Prize at 6th EuCheMS (The European Association for Chemical & Molecular Sciences) conference on Nitrogen Ligands held in Beaune France (13-17th Sept, 2015). This prize was given by the Royal Society of Chemistry
2. Md. Lokman Hakim Choudhury (2016) One of the top 10% highly cited authors in General Chemistry portfolio of Royal Society of Chemistry journals

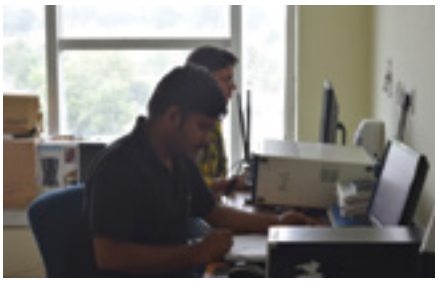
Visits Abroad by Faculty Members

1. Prolay Das - Invited lecture in conference (Kathmandu, Nepal)
2. Neeladri Das - to participate in 6th EuCheMS (The European Association for Chemical & Molecular Science) conference (Beaune France) Sept 13-17, 2015

Invited Lectures by Faculty Members

1. Biochemical Engineering by Prolay Das (Central University of South Bihar)
2. Constrained Bicyclic Molecules as Glycosidase Inhibitors by Amit Kumar (30th Carbohydrate Conference- University of Pondycherry)
3. Nanoscience and Technology: A Green Prospective by Sahid Hussain (NIT Patna)
4. Multicomponent Reactions (MCRS): Versatile Tool for Sustainable Organic Synthesis by Md. Lokman Hakim Choudhury (Short term course on Recent Trends in Green Chemistry and Technology organized by Chemistry Dept. NIT Patna)
5. Chemistry in Daily life by Neeladri Das (JNV Bikram Patna)

11. Mathematics


11.1 Faculty List

Associate Professors

Name	Highest Degree	Research Area
Dr. Ashish Kumar Upadhyay	Ph.D	Combinatorial Topology, Geometric Topology, Algebraic Topology, Algorithmic and Combinatorial aspects of Low - dimensional Manifolds, Synthetic Geometry, Combinatorial Geometry, Graphs on Surfaces, Automorphism Groups
Dr. Om Prakash	Ph.D	Rings & Modules, Associated Prime Rings
Dr. Yogesh Mani Tripathi	Ph.D	Statistical Decision Theory, Statistical Inference

Assistant Professors

Name	Highest Degree	Research Area
Dr. Debashree Guha Adhya	Ph.D	Fuzzy logic and its application
Dr. Nutan Kumar Tomar	Ph.D	Mathematical Control Theory, Nonlinear Functional Analysis, Optimal Control
Dr. 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
Dr. Sudhan Majhi	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
Dr. Amit Kumar Verma	Ph.D	Analysis of Nonlinear Differential Equations, Numerical Solutions of ODEs and PDEs
Dr. Vivek Laha	Ph.D	Multiobjective Optimization Problems; Vector Variational Inequalities; Generalized Convexity; Nonsmooth Analysis; Mathematical Programs with Vanishing Constraints
Dr. Pratibhamoy Das	Ph.D	Numerical Analysis, Moving Mesh Methods, Singular Perturbation, A posteriori Error Estimates, r-refinement Strategy

11.2 Academic Programs

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

11.3 Research & Development Activities

Sponsored Research Projects

1. Blind Symbol Timing Offset (STO) and Carrier Frequency Offset (CFO) Estimation and Implementation over OFDM, and MIMO-SC-FDMA testbed (Start Up Research Grant (Young Scientist)) (PI : Dr. Sudhan Majhi)
2. D-covered triangulations and Semi-equivelar maps on surfaces (SERB, ₹4.90 Lakhs) (PI : Dr. Ashish K Upadhyay)
3. Estimation under censored data (DST, ₹15.00 Lakhs) (PI : Dr. Yogesh Mani Tripathi)
4. Nonlinear singular differential equations arising in real life (DST SERB, ₹16.51 Lakhs) (PI : Dr. Amit Kumar Verma)
5. Secrecy Capacity of MIMO-OFDM system for Cognitive Radio Networks (Deity, Visvesvaraya PhD Scheme) (PI : Dr. Sudhan Majhi)

Patents (filed / granted)

1. Patent Name:A Blind Modulation Classification (BMC) Method for Linearly Modulated Signal over Single Carrier Systems; Patent Owner: Sudhan Majhi

Papers Published in Journals

1. B. Dutta, D. Guha, Preference programming approach for solving intuitionistic fuzzy AHP, International Journal of Computational Intelligence Systems, 8, 977-991 (2015).
2. S. Das and D. Guha, A centroid based ranking method of trapezoidal intuitionistic fuzzy numbers and its application to MCDM problems, Fuzzy Information and Engineering, 8, 41–74 (2016).
3. B. Dutta, D. Guha and R. Mesiar, A Model Based on Linguistic 2-tuples for Dealing with Heterogeneous Relationship among Attributes in Multi-expert Decision Making, IEEE Transaction on Fuzzy System, 23, 1817-1831 (2015).
4. R. K. Saini, A. Sangal and O. Prakash, A Modified Method For Unbalanced Transportation Problems in Fuzzy Environment by Zero Suffix Method Via Robust Ranking Technique, Global Journal of Pure and Applied Mathematics (Scopus), 11(2), 997-1011. (2015).
5. O. Prakash, D. Sharma and P. Maheshwari, Certain generalized q-operators, Demonstr. Math., 48(3) 404-412 (2015).
6. P. Das, Comparison of a priori and a posteriori meshes for singularly perturbed nonlinear parameterized problems, Journal of Computational and Applied Mathematics,, 290, 16-25 (2015).
7. Y. M. Tripathi, S. Kumar and C. Petropoulos, Estimating the shape parameter of a Pareto distribution under restrictions, Metrika, Vol. 79, 91-111 (2016).
8. M. K. Gupta, N. K. Tomar and S. Bhaumik, Full- and reduced-order observer design for rectangular descriptor systems with unknown inputs, Journal of The Franklin Institute, 352(3), 1250-1264 (2015).
9. A. Yadav, P. K. Srivastava and A. Kumar, Mathematical model for smoking: Effect of determination and education, International Journal of Biomathematics, 8, 1550001 (14 page) (2015).
10. R. Radhakrishnan, A. K. Singh, S. Bhaumik and N.K. Tomar, Multiple Sparse- grid Gauss-Hermite Filtering, Applied Mathematical Modelling, 40(7-8), 4441-4450 (2016).
11. P. Das and V. Mehrmann, Numerical solution of singularly perturbed convection diffusion reaction problems with two small parameters, BIT Numerical Mathematics, 56, 51-76 (2016).
12. J. Choi, N. Shekhawat, A. K. Rathie and O. Prakash, On a new class of series identities, Honam Math. J., 37(3), 339-352 (2015).
13. V. K. Mishra and N. K. Tomar, On Complete and Strong Controllability for Rectangular Descriptor Systems, Circuits, Systems, and Signal Processing, 35(4), 1395-1406 (2016).
14. V. K. Mishra, N. K. Tomar and Mahendra Kumar Gupta, On Controllability and Normalizability for Linear Descriptor Systems, Journal of Control, Automation and Electrical Systems, 27(1),19-28 (2016).
15. S. Singh, Y. M. 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).

16. B. Dutta, D. Guha, Partitioned Bonferroni mean based on linguistic 2-tuple for dealing with multi-attribute group decision making, Applied Soft Computing, 37, 166-179 (2015).
17. M. K. Gupta and N. K. Tomar, PD Observer Design for Rectangular Linear Descriptor Systems, Bharatiya Vaigyanik evam Audyogik Anusandhan Patrika, 23(1), 48-53 (2015).
18. S. Das and D. Guha, Power harmonic aggregation operator with trapezoidal intuitionistic fuzzy numbers for solving MAGDM problems, Iranian Journal of Fuzzy Systems, 12, 41-74. (2015).
19. A. Samad, A. R. Adhikary, S. Majhi, Receiver Design for Quasi-Asynchronous MC-CDMA by using QCSS Code .
20. S. Singh and Y. M. Tripathi, Reliability sampling plans for a lognormal distribution under progressive first-failure censoring with cost constraint, Statistical Papers, Vol. 56, 773-817 (2015).
21. S. Singh, Y. M. Tripathi and Chi-Hyuck Jun, Sampling plans based on truncated life test for a generalized inverted exponential distribution, Industrial Engineering and Management Systems, Vol. 14, 183-195 (2015).
22. A. K. Tiwari and A. K. Upadhyay, Semi equivelar maps on the torus and the Klein bottle, Math Slovaca, In press.
23. S. Das and D. Guha, Similarity measure of intuitionistic fuzzy numbers and its application to clustering, Journal of Mathematics in Operational Research, In press (2015).
24. P. Das and V. Mehrmann, Upwind based parameter uniform convergence analysis for two parametric parabolic convection diffusion problems by moving mesh methods, Proceedings of Applied Mathematics and Mechanics, (2015).
25. S. Das, B. Dutta and D. Guha, Weight computation of criteria in a decision making problem by knowledge measure with intuitionistic fuzzy set and interval-valued intuitionistic fuzzy set, Soft Computing, DOI 10.1007/s00500-0 (2015).

Papers Presented in Conferences

1. B. Dutta and D. Guha, An intelligent aggregation technique for capturing heterogeneous relationship among inputs, 8th International summer school on aggregation operators, University of Silesia, Katowice, Poland (2015)
2. S. Majhi, A. Gupta, P. Kumar and Y. Nasser, A Closed-Form Outage Probability of Opportunistic AF OFDMA Relaying over Rician Fading Channel, International Conference on Communication and Signal Processing (ICCSP), Chennai, India (2016)
3. S. Singh and O. Prakash, A note on reversibility over prime radicals, International Conference on Recent Trends in Mathematics, Univ. of Allahabad, India (2015)
4. M. Kumar and S. Majhi, Blind Synchronization of OFDM System and CRLB Derivation of CFO over Fading Channels, International Conference on Information, Communications and Signal Processing, Singapore (2015)
5. V. K. Mishra and N.K. Tomar, Controllability Analysis of Linear Time Invariant Descriptor Systems, Conference on Advances in Control and Optimization of Dynamical Systems, IFAC, NIT Tiruchirappalli, India (2016)
6. D. Guha and B. Dutta, Health-system evaluation: a multi-attribute decision making approach, Information System Design and Intelligent Applications (INDIA2015), University of Kalyani (2015)
7. V. K. Mishra, N. K. Tomar and M. K. Gupta, Impulse Controllability and Impulse Elimination in Rectangular Descriptor Systems, 15th International Conference on Control, Automation and Systems (ICCAS 2015), IEEE, Busan, Korea (2015)
8. A. K. Mahto and Y. M. Tripathi, Inference for a simple step-stress lognormal Model under Type-II censoring, International Conference on Recent Advances in Mathematics, Statistics and Computer Science, Central University of South Bihar, Patna (2015)
9. S. Singh and O. Prakash, -3-Armendariz rings, 24th International conference on Nearrings, Nearfields and Related topics, MIT, Manipal (2015)
10. S. Suthar and O. Prakash, Matching of Zero divisor Graph over Commutative Ring Zn, National Conference on Advances in Mathematical Sciences and Applications in Engineering & Technology (AMS-AET 2015),

11. Y. M. Tripathi, S. Kumar and C. Petropoulos, Minimax estimation for the lower bounded scale parameter of an exponential distribution, International Indian Statistical Association Conference on 'Celebrating Statistical Innovation and Impact in a World of Big & Small Data, Savitribai Phule Pune University, Pune (2015)
12. B. Dutta and D. Guha, Multi-attribute decision making under Type-2 Fuzzy sets, FSTA 2016, Slovak Republic (2016)
13. N. Shekhawat, A. K. Rathie and O Prakash, On a quadratic transformation due to Kummer and its generalizations, International Conference on Condensed Matter and Applied Physics, Govt. Eng. College Bikaner, Rajasthan (2015)
14. A. Prasad and A. K. Upadhyay, On eigenvalues and Topologies of maps on surfaces, CONIAPS N. Shekhawat, O. Prakash and A. K. Rathie, On generalizations of two Ramanujan's Summations, International Conference on Condensed Matter & Applied Physics, Govt. Eng. College Bikaner, Rajasthan (2015)
15. S. Majhi, P. Kumar and Y. Nasser, Outage Probability of Opportunistic AF OFDM Relaying over Rician Fading Channel, International Conference on Telecommunications (ICT), Thessaloniki, Greece (2016)
16. D. P. Singh and Y. M. Tripathi, Parameter Estimation for an Inverse Gaussian distribution based on Type I censored data, International Conference on Recent Advances in Mathematics, Statistics and Computer Science, Central University of South Bihar, Patna (2015)
17. R. K. Maurya, Y. M. Tripathi and M. K. Rastogi, Parameter etimation for a Burr distribution under Progressive censored data, International Conference on Recent Advances in Mathematics, Statistics and Computer Science, Central University of South Bihar, Patna (2015)
18. R. Radhakrishnan, A. K. Singh, S. Bhaumik and N.K. Tomar, Quadrature Filters for Underwater Passive Bearings-Only Target Tracking, Sensor Signal Processing for Defence (SSPD 2015), IEEE, Scotland, United Kingdom (2015)
19. A. Samad, A. R. Adhikary, S. Majhi, Receiver Design for Quasi-Asynchronous MC-CDMA by using QCSS Code, International Conference on Communication and Signal Processing (ICCSP), Chennai, India (2016)
20. A. K. Upadhyay, Some Studies on Semi Equivelar Maps, International Seminar on recent advances in linear optimization and its applications, VKSU Arah, Bihar (2015)
21. T. Kayal, Y. M. Tripathi and D. P. Singh, Statistical Inference for a bathtub shaped distribution using progressive censoring, International Conference on Recent Advances in Mathematics, Statistics and Computer Science, Central University of South Bihar, Patna (2015)
22. O. Prakash, Strongly prime ideals and its extension in nearrings (Invited talk), 24th International conference on Nearrings, Nearfields and Related topics, MIT, Manipal, Karnataka. (2015)
23. S. Singh and O. Prakash, Study of Armendariz Rings under Weakly IFP, RS Day, IIT Patna, Bihta (2016)
24. S. Chandra, M. K. Gupta and N. K. Tomar, Synchronization of R ossler Chaotic System for Secure Communication via Descriptor Observer Design Approach, International Conference on Signal Processing, Computing and Control (IS-PCC 2015), IEEE, Jaypee University Solan, India (2015)
25. A. Srivastava, O. Prakash and R. K. Pandey, The Lonely Runner Conjecture with runners speed as some generalized Fibonacci numbers, RS Day-2016, IIT Patna, Bihta (2016)
26. A. Yadav, P. K. Srivastava, Impact of information on diseases prevalence when treatment is available, ICMMDESCA, IIT Kanpur (2016)
27. A. Yadav, Role of information and limited treatment rate on the control of infectious diseases, The Indian Mathematical Society at VNIT Nagpur (2015)
28. A. Yadav, P.K. Srivastava, Research Scholar Day, IIT Patna (2016)
29. A. Kumar and P.K. Srivastava, Role of Optimal Screening and Treatment on Infectious Diseases, 7th Workshop Dynamical Systems Applied to Biology and Natural Sciences, University of Évora, Portugal (2016)

30. A. Kumar, P.K. Srivastava and P. Chandra, Control of Infectious Diseases via Screening and Treatment: Modeling Perspective, 5th Research Scholars' Day-2016, IIT Patna, India (2016)
31. A. Kumar and P.K. Srivastava, Impact of International Conference on Mathematical Modelling, Differential Equations, Scientific Computing & Applications, IIT Kanpur, India (2016)

11.4 Other Activities

Member - Professional Bodies

1. Ashish Kumar Upadhyay (2006) Indian Math Society
2. Ashish Kumar Upadhyay (2015) London Math Society
3. Ashish Kumar Upadhyay (2014) Indian Science Congress Association
4. Ashish Kumar Upadhyay (2015) American Mathematical Society
5. Ashish Kumar Upadhyay (2005) Ramanujam Mathematical Society
6. Debashree Guha Adhya Indian Science Congress
7. Nutan Kumar Tomar (2011) Indian Mathematical Society
8. Om Prakash (2005) The Indian Science Congress, Kolkata
9. Om Prakash (2010) The Calcutta Mathematical Society, Kolkata
10. Om Prakash (2012) The Indian Mathematical Society, Pune
11. Prashant Kumar Srivastava (2013) Society for Mathematical Biology
12. Prashant Kumar Srivastava (2012) Indian Mathematical Society
13. Prashant Kumar Srivastava (2010) Indian Academy for Mathematical Modelling and Simulation (IAMMS)
14. Sudhan Majhi (2015) IEEE
15. Yogesh Mani Tripathi Indian Science Congress

Member - Editorial Board

1. Ashish Kumar Upadhyay (2015) Member - ISST Journal of Mathematics and Computing system
2. Pratibhamoy Das (2015) Member - Bioinfo Computational Mathematics
3. Sudhan Majhi (2016) Associate Editor - Circuits, Systems & Signal Processing

Awards & Honours

1. Ashish Kumar Upadhyay (2015) Invited to Chair a session in International Workshop on Topology and Groups held in University of Goa
2. Sudhan Majhi (2015) Start-up grant for Young Scientists

Fellowships

1. Debashree Guha Adhya (2015) SAIA-NSP scholarship given by Govt. of Slovak Republic
2. Sudhan Majhi (2016) Visiting Research Fellow, UMD, USA

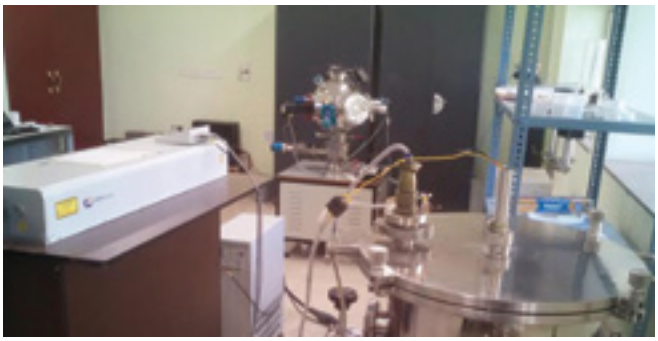
Visits Abroad by Faculty Members

1. Debashree Guha Adhya - To attend 8th International summer school on aggregation operators (University of Silesia, Katowice, Poland) 7th-10th July, 2015

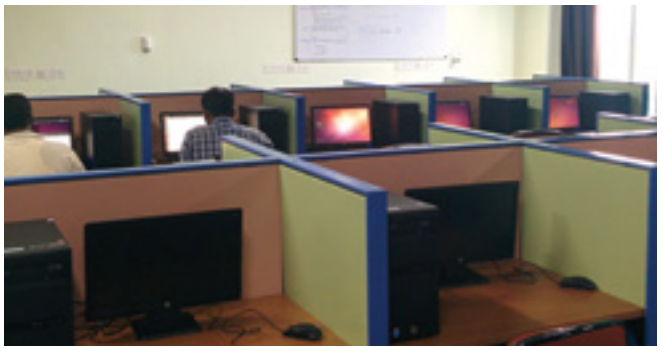
Invited Lectures by Faculty Members

1. Sequence Design for Wireless Communication by Sudhan Majhi (Vidyasagar University)
2. Convex optimization Problems by Vivek Laha (College of Engineering, Cherthala, Kerala)
3. Mathematical Models using Differential Equations by Prashant Kumar Srivastava (Undergraduate Training Programme on Differential Equations under the auspices of NPDE-TCA IIT Bombay, held at LNMIIT Jaipur)
4. Semi-equivelar maps on surfaces, by Ashish Kumar Upadhyay (VKSU Ara)
5. Golden Ratio by Om Prakash (JNV Bikram)
6. Rings & Modules by Om Prakash (NISER, Bhubaneswar (Training Programme in Mathematics- 2015 (for level-3)
7. Higher Order Extrapolation Analysis for Singularly Perturbed Parabolic Convection Diffusion Problem by Pratibhamoy Das (National Institute of Technology, Patna)
8. Linguistic information processing and its application in decision making by Debashree Guha Adhya (Patna University)

12. Physics





12.1 Faculty List

Associate Professors

Name	Highest Degree	Research Area
Dr. Manoranjan Kar	Ph.D	Condensed Matter Physics, Nanomaterials, Materials Science
Dr. Naveen Kumar Nishchal	Ph.D	Applied Optics (Optical Information Processing, Image Encryption, Watermarking, Digital Holography, Fractional Fourier Transform-based Signal Processing, Correlation-based Optical Pattern Recognition)
Dr. Utpal Roy	Ph.D	Bose-Einstein condensate, Nonlinear Optics, Quantum Optics

Assistant Professors

Name	Highest Degree	Research Area
Dr. Ajay D. Thakur	Ph.D	Earth abundant elements based advanced electronic materials for energy and sensing applications.Here the emphasis is on nanomaterials for energy harvesting and sensing applications

Name	Highest Degree	Research Area
Dr. Alpana Nayak	Ph.D	Condensed matter physics (experimental); Nanoionic devices; atomic switches; Scanning probe microscopy; Organic thin films
Dr. Awalendra K. Thakur	Ph.D	Renewable Energy Resources, Composite Nano Structures, Solid State Ionics, Dielectrics and Ferroelectrics, Super Capacitors, E.M.I. Shielding
Dr. Ayash Kanto Mukherjee	Ph.D	Transport in Conjugated Polymer, Metal-Organic Semiconductor interface, Organic electronic Devices, Molecular Electronics
Dr. Jayakumar Balakrishnan	Ph.D	Experimental Condensed Matter: Spintronics, Graphene, 2D Materials
Dr. Jobin Jose	Ph.D	Computational atomic and molecular physics: Photoionization / Scattering from atoms and molecules; Electronic structure properties of confined atomic systems; Strong field ionization
Dr. Manas Kumar Sarangi	Ph.D	Biophysics and Ultrafast spectroscopy, Structure function relation in biopolymers
Dr. Raghavan K Easwaran	Ph.D	Cold atom Physics, Non-linear optics, Quantum Optics
Dr. R. Prabhu	Ph.D	Quantum information theory and its interface with many-body physics and quantum optics
Dr. Soumya Jyoti Ray	Ph.D	Condensed Matter and Nonoscale Physics (in general) with recent interests (not limited to) towards Superconductivity, Magnetism, Two-dimensional Layered Materials, Nanoelectronics, Spintronics etc
Dr. Venkata R. Dantham	Ph.D	Bio-Photonics, Nanophotonics, Ultrasensitive optical biosensors, Photonic atoms

Ramanujan Faculty

Name	Highest Degree	Research Area
Dr. Prashant Kumar	Ph.D	Laser-based photo-chemical and photo-physical transformations,Graphene and its analogues, CNTs and Nanodiamond,Hybrid nanomaterials, Nanoplasmonics,Trace level molecular detection, Straintronics

12.2 Academic Programs

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

12.3 Research & Development Activities

Sponsored Research Projects

1. Coherent Control & Interferometry using Bose-Einstein Condensate (SERB, DST, GoI, ₹15.24 Lakhs) (PI : Dr. Utpal Roy)
2. Development of Indigenous Technology for Low Temperature Applications (DRDO) (PI : Dr. A. K. Thakur)
3. Electromagnetically Induced Transparency and Slow Light in a Two dimensional Magneto Optical Trap (2D MOT) (Science & Engineering Research Board (SERB), ₹21.2 Lakhs) (PI : Dr. Raghavan K E)
4. Identification of Biological Micro-organisms with Digital Holography (DRDO, ₹14.91 Lakhs) (PI : Dr. Naveen Kumar Nishchal)
5. Graphen and other 2D materials based spintronics and topological insulators INSPIRE Faculty Fellowship (DST, ₹35.00 Lakhs) (PI : Dr. Jayakumar Balakrishnan)
6. Quantum Information Theory (INSPIRE Faculty Award, Department of Science and

Technology, Valid till May-2017, ₹35.00 Lakhs) (PI : Dr. R. Prabhu)

7. Ramanujan Fellowship (SERB, ₹89.00 Lakhs) (PI : Dr. Prashant Kumar)
8. Real-time detection and sizing of single protein molecule using a nanoplasmonic-whispering gallery mode hybrid microresonator (Science and Engineering Research Board (SERB), DST, ₹54.40 Lakhs) (PI : Dr. Venkata Ramanaiah Dantham)
9. SERB School on Modern Optics & Its Applications (Science & Engineering Research Board, Department of Science & Technology, New Delhi, ₹19.26 Lakhs) (PI : Dr. Naveen K Nishchal)
10. Spin transport in graphene/LSMO heterostructures (Project Approved) (DST Nanomission, ₹37.50 Lakhs) (PI : Dr. Jayakumar Balakrishnan)
11. Superconducting Spintronics using hybrid Superconducting-Ferromagnetic Metamaterials (Department of Science and Technology, India (INSPIRE Grant), ₹35.00 Lakhs) (PI : Dr. Soumya J. Ray)

Patents (filed / granted)

1. Patent Name:Large scale synthesis route of Pure Phase Multiferroic BiFeO3; Patent Owner: Manoranjan Kar

Papers Published in Journals

1. S. J. Ray, M. V. Kamalakar and R. Chowdhury, Ab-initio studies of Phosphorene island single electron transistor, Journal of Physics: Condensed Matter, 28, 195302 (2016).
2. R. Kumar and M. Kar, Correlation between lattice strain and magnetic behavior in non-magnetic Ca substituted nano-crystalline Cobalt Ferrite, Ceramic International, 42 (2016).
3. S. Chakrabarti, A. K. Thakur, and K. Biswas, Density Functional Theory Studies on LiFeTiO4, J. Power Sources, 313, 81-90 (2016)
4. A. K. Yadav, A. V. Sanchela, A. D. Thakur and C. V. Tomy, Effect of nominal substitution of transition metals for excess Fe in Fe1+xSe superconductor, Sol. St. Comm., 202, 8 (2015).
5. P. Kumar, C. Panda and M. Kar, Effect of Rhombohedral to Orthorhombic Transition on Magnetic and Dielectric Properties of La and Ti co-substituted BiFeO3, Smart Material and Structures, 24 (2015).
6. A. V. Sanchela, C. V. Tomy, A. D. Thakur, Effect of Sb deficiency on the thermoelectric properties of Zn4Sb3, Sol. St. Commun., 218, 49 (2015).
7. 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 (2015).
8. S. Chatterjee, V. R. Dantham and S. Hussain, Efficient nanoplasmonic antennas for fabricating single protein molecule detector, Proc. of SPIE (USA), DOI: 10.1117/12.2182 (2015).
9. 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).
10. A. V. Sanchela, A. D. Thakur and C. V. Tomy, Enhancement in thermoelectric properties of FeSb2 by Sb site deficiency, J. of Materiomics, 1, 205 (2015).
11. G. M. Das, R. Laha and V. R. Dantham, Enhancement of Raman Scattering Signal of a Few Molecules Using Photonic Nanojet Mediated SERS Technique, Proc. of AIP (USA), Accepted (2016).
12. S. J. Ray, Gate engineered performance of Single Molecular transistor, Journal of Applied Physics, Accepted (2016).
13. S. Lee, P. Kumar, Y. Hu, G. J. Cheng and J. Irudayaraj, Graphene laminated gold bipyramids as sensitive detection platforms for antibiotic molecules, Chemical Communications, 51, 15494-15497 (2015).
14. A. K. Yadav, H. Sharma, A. D. Thakur and C. V. Tomy, Growth and angular dependent resistivity of Nb2Pd0.73S5.7 in superconducting single crystal fibers, Mater. Chem. and Phys., 164, 46 (2015).
15. N. Shukla, A. K. Thakur, A. Shukla and D. T. Marx, Ion Conduction Mechanism in Polymer Nanocomposite Films by Dielectric

Spectroscopy and AC Conductivity Studies, Physica B: Physics of Condensed Matter, 468-469, 50–56 (2015).

16. S. Ghosh, R. Sharma, U. Roy and P. K. Panigrahi, Mesoscopic Quantum Superposition of the Generalized Cat state: A Diffraction Limit, Physical Review A, 92, 053819 (2015).
17. A. Haq, K. S. Subrahmanyam, P. Kumar, Nanofiller Graphene-ZnO Hybrid Nanoarchitectures: Optical, Electrical and Optoelectronic Investigation, J. Mater. Chem. C, 3, 11959-11964 (2015).
18. M. Panda, V. Srinivas and A. K. Thakur, Non-universal Scaling Behavior of Polymer-metal Composites across the Percolation Threshold, Results in Physics,, 5,136–141, (2015).
19. I. Mehra and N. K. Nishchal, Optical asymmetric image encryption using gyrator wavelet transform, Optics Communications, 354, 344-352 (2015).
20. A. Das, A. 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).
21. P. Kumar, N. Shankhwar, A. Srinivasan and M. Kar, Oxygen Octahedra Distortion induced Structural and Magnetic Phase Transitions in Bi1-xCaxFe1-xMnxO3 Ceramics, Journal of Applied Physics, 117 (2015).
22. G. M. Das, R. Laha and V. R. Dantham, Photonic nanojet mediated SERS technique for enhancing the Raman scattering of a few molecules, Journal of Raman Spectroscopy, DOI 10.1002/j` 4928 (2016).
23. A. Fatima and N. K. Nishchal, Plasmonics: A new paradigm for information security, Asian Journal of Physics, 25, 59-64 (2016).
24. H. Gargama, A. K. Thakur and S. K. Chaturvedi, Polyvinyledene Fluoride/ Nanocrystalline Iron Composite Materials for EMI Shielding and Absorption Applications, J. Alloys & Compounds, 654, 209-215, (2016).
25. H. Gargama, A. K. Thakur and S. K. Chaturvedi, Polyvinyledene Fluoride/Nickel Composite Materials for Charge Storing, EMI Absorption and Shielding Applications, J. Applied Physics,, 117(23), 224903, (2015).
26. D. Kumar and N. K. Nishchal, Recognition of three-dimensional objects using joint fractional correlator and nonlinear joint fractional correlator with the help of digital Fresnel holography A comparative study, Optical Review, 22, 256-263 (2015).
27. A. L. Sharma and A. K. Thakur, Relaxation Behavior in Clay-reinforced Polymer Nanocomposites, Ionics, 21(6), 1561–1575, (2015).
28. V. Kumar, S. Kumari, P. Kumar and M. Kar, Structural Analysis by Rietveld Method and its Correlation with Optical Properties of Nanocrystalline Zinc Oxide, Advanced Materials Letters, 6 (2015).
29. 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 (2015).
30. P. Kour, P. Kumar, S. K. Sinha and M. Kar, Study of Dielectric and Impedance spectroscopy of La Substituted Nanocrystalline Pb(Zr0.52Ti0.48)O3 Ceramics, Journal of Materials Science: Materials in Electronics, 26 (2015).
31. 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, 29, 1550172 (2015).
32. U. Mishra, D. Rakshit and R. Prabhu, Survival of time-evolved correlations depends on whether quenching is across critical point in XY spin chain, Physical Review A, 93, 042322 (2016).
33. D. Kumar and N. K. Nishchal, Three-dimensional object recognition using joint fractional Fourier transform correlators with the help of digital Fresnel holography, Optik, 126, 2690-2695 (2015).
34. Y. Hu, P. Kumar, R. Xu, K. Zhao, G. J. Cheng, Ultrafast direct fabrication of flexible substrate-supported designer plasmonic nanoarrays, Nanoscale, 8, 172-182 (2016).

35. D. Kumar and N. K. Nishchal, Watermarking of phase-only Fresnel hologram using symmetrical 3D modified Gerchberg-Saxton algorithm, Asian Journal of Physics, 24, 1425-1429 (2015).

Papers Presented in Conferences

1. A. Nath and U. Roy, Analytical model for cigar-shaped Bose-Einstein condensate under complex external confinements, Frontiers in Light-Matter Interaction, IIT Ropar (2016)
2. J. Bera and U. Roy, Chopping of Bose-Einstein condensate and its dynamics, Frontiers in Light-Matter Interaction, IIT Ropar (2016)
3. 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 (CNS-2015), BARC Mumbai (Maharashtra) (2015)
4. U. Roy, Controlling the dynamics of Bose-Einstein condensate under external confinements: A new analytical perspective, EMN Meeting on Quantum Technology, Beijing China. (2015)
5. A. Kumar and A. D. Thakur, Cu2ZnSnS4 Films using an Eco-friendly Direct Liquid Coating Approach, International Conference on Advances in Energy Research-2015 (ICEAR-2015), IIT Bombay, Mumbai (2015)
6. S. Kumar, S. Supriya and M. Kar, Dielectric Investigations on Li and Cr Substituted Nickel Oxide, 4th ICANN, IIT Guwahati (2015)
7. S. Kumar, S. Supriya, P. Kumar and M. Kar, Dielectric Investigations on co-substituted Bismuth Ferrite (Bi1-xLaxFe1-xMnxO3), ICC 2015, Bikaner, Rajasthan (2015)
8. D. Kumar and N. K. Nishchal, Digital holography based 3D object recognition under varying light illumination using photon counting imaging, International Conference on Digital Holography & 3-D Imaging, Shanghai, CHINA (2015)
9. A. Arya and V. R. Dantham, Efficient nanostructures for studying single protein molecules in real time, DST-SERC School on Modern Optics and Its Applications, IIT Patna, Bihta (2015)
10. S. B Mirji and J. Jose, Endohedrally Confined Hydrogen Atom in Fullerene C60, International Topical Conference on Charged Particle Collisions and Electronic processes in Atoms, Molecules and Materials, Indian School of Mines, Dhanbad (2016)
11. R. Kumar, R. Pandey and M. Kar, Enhanced Magnetocrystalline anisotropy of Co0.99Ca0.01Fe2O4,, Indo-Japan Workshop on Magnetism at Nanoscale, NISER Bhubaneswar (2015)
12. G. M. Das, M. K. Parit and R. Laha, Enhancement of Raman Scattering Signal of a Few Molecules Using Photonic Nanojet Mediated SERS Technique, International Conference on Condensed Matter & Applied Physics (ICC -2015), Bikaner, Rajasthan. (2015)
13. A. Kumar, A. V. Sanchela, C. V. Tomy and A. D. Thakur, Extreme Sensitivity of Magnetic Properties on synthesis Routes in La0.7Sr0.3MnO3, International Conference on Condensed Matter Physics, Bikaner, India (2015)
14. S. Supriya, S. Kumar and M. Kar, Impedance Spectroscopy Studies in Cobalt Ferrite-Reduced Graphene Oxide Nanocomposite, ICC 2015, Bikaner, Rajasthan (2015)
15. R. Kumar, A. M. Goswami and M. Kar, Increase of Dielectric Constant in PVDF by Incorporating La1.8Sr0.2NiO4 into its Matrix, International Conference on Condense matter and Applied physics, Bikaner (2015)
16. R. Kumar and M. Kar, Magnetic studies of nanocrystalline cobalt ferrite by Employing the Arrot plot, International Conference on Condense matter and Applied physics, Bikaner (2015)
17. A. Kumar, A. V. Sanchela, C. V. Tomy and A. D. Thakur, Magnetism in La0.7Sr0.3Mn1-xCoxO3 ($0 \leq x \leq 1$), DAE Solid State Physics Symposium 2015, Amity University, India (2015)
18. A. Nath and U. Roy, Matter-wave solitons in negative temperature, International Conference on Current Developments in Atomic, Molecular, Nano and Optical Physics with applications (CDAMOP 2015), Delhi University, Delhi, India (2015)

19. T. Bera, A. V. Sanchela, C. V. Tomy and A. D. Thakur, n-type SnSe1–x for Thermoelectric Application, MicroCom 2016, NIT Durgapur (2016)
20. P. Ranjan and A. D. Thakur, Nanostructured tin dioxide based gas sensors, International conference on multifunctional materials for future application (ICMFA-2015), Varanasi (2015)
21. A. Fatima and N. K. Nishchal, Optical cryptosystem based on gyrator transform and equal modulus decomposition, Research Scholars' Day (RSD-2016), IIT Patna (2016)
22. N. K. Nishchal, Optical security for future era, IEEE 5G Summit, IIT Patna (2016)
23. S. Ghosh, U. Roy, J. Bera and P. K. Panigrahi, Phase sensitivity and weak measurement in two-soliton dynamics, Frontiers in Light-Matter Interaction, IIT Ropar (2016)
24. D. Kumar and N. K. Nishchal, Phase-only computer generated Fresnel hologram synthesis using a symmetrical three-dimensional GS algorithm, Siegman International School on Lasers: 2015, Amberg, GERMANY (2015)
25. G. M. Das and V. R. Dantham, Photonic nanojet mediated surface enhanced Raman scattering (SERS) technique, DST-SERC School on Modern Optics and Its Applications, IIT Patna (2015)
26. J. Jose and P. C. Deshmukh, Relativistic Effects in the Photoionizatin Dynamics of E118, International Topical Conference on Charged Particle Collisions and Electronic processes in Atoms, Molecules and Materials, Indian School of Mines, Dhanbad (2016)
27. P. Ranjan and A. D.Thakur, Solvent Free Tin Oxide Nanoparticle for Gas Sensing Application, International Conference on Condensed Matter & Applied Physics (ICC 2015), Bikaner (2015)
28. L. K. Pradhan, R. Pandey, R. Kumar, P. Kumar and M. Kar, Structural and electrical properties of CFO and PZT multiferroic nanocomposite, 4th ICANN, IIT Guwahati (2015)
29. R. Kumar, R. Pandey and M. Kar, Study of strain mediated magnetism on non-magnetic Sr substituted cobalt ferrite by employing the Arrott plot, ICMAGMA, Vellore University (2015)
30. J. Jose and R. R. Lucchese, The Computation of Molecular Photoionization Cross Sections Applied to the Excitation of Asymmetric Vibrations in SiF4 and HHG Generation in SF6, Photoionization & Photodetachment, Gordon Research Conference, Renaissance Tuscany Italy, Ciocco Lucca (2016)
31. A. K. Mukherjee, The Essence of Learning Physics: Effective Teacher and Effective Teaching, UGC National Conference cum Workshop on Physics Education: Issues, Challenges and Strategies, Magadh Mahila College, Patna (2016)
32. D. Kumar and N. K. Nishchal, Three-dimensional object recognition using phase-only computer-generated Fresnel hologram, Int'l. Confer. on Opto-Electronics and Applied Optics, (IEEE IEM OPTRONIX 2015), Vancouver, CANADA (2015)
33. A. Arya and V. R. Dantham, Ultrasensitive nanoplasmonic-whispering gallery mode hybrid biosensor for the detection of single protein molecules in real time, Research Scholars Day Celebration, IIT Patna, Bihta (2016)

12.4 Other Activities

Fellow - Professional Bodies

1. Naveen Kumar Nishchal (2006) Optical Society of India

Member - Professional Bodies

1. A K Thakur (2014) Asian Society of Solid State Ionics
2. A K Thakur (1998) Indian Solid State Ionics Society
3. Ajay Thakur (2012) Indian Physics Association
4. Jobin Jose (2009) Indian Society of atomic and molecular physics
5. Manas Kumar Sarangi (2014) American Heart Association

6. Manas Kumar Sarangi (2014) Biophysical society, Baltimore, USA
7. Manas Kumar Sarangi (2012) Indian Biophysical society
8. Manas Kumar Sarangi (2012) Indian society for Radiation and photophysics
9. Manoranjan Kar (2016) Materials Research Society India
10. Naveen Kumar Nishchal (2003) Lasers And Spectroscopy Society of India
11. Naveen Kumar Nishchal (2015) Optical Society of America
12. Naveen Kumar Nishchal (2015) The International Society for Optical Engineering, USA
13. Naveen Kumar Nishchal (2010) Indian Science Congress Association
14. Prashant Kumar (2012) American Nano Society
15. Prashant Kumar (2012) Royal Society of Chemistry
16. Prashant Kumar (2011) American Physical Society
17. Prashant Kumar (2011) SPIE - the international society for optics and photonics
18. Soumya Jyoti Ray (2012) Institute of Physics, UK
19. Soumya Jyoti Ray (2015) German Physics Society (DFG)
20. Soumya Jyoti Ray (2010) Science, Technology, Engineering and Mathematics Network (STEMNET), UK.
21. Utpal Roy (2005) Indian Society of Atomic & Molecular Physics
22. Utpal Roy (2013) Member of panel of Expert of AICTE
23. Utpal Roy (2016) DST-INSPIRE Project Evaluation (SLEPC), Bihar

Member - Editorial Board

1. A K Thakur (2010) Associate Editor - Journal of Applied Sciences, Engineering and Technology
2. A K Thakur (2012) Editorial Board Member - Journal of Plastics & Polymer Technology
3. A K Thakur (2012) Editorial Board Member - Journal of Research Updates in Polymer Science
4. A K Thakur (2008) Editorial Board Member - The Open Energy & Fuels
5. Naveen Kumar Nishchal (2014) Editor - The Scientific World Journal: Signal Processing
6. Prashant Kumar (2010) Member - Advances in Natural Sciences: Nanoscience and nanotechnology
7. Prashant Kumar (2011) Editor - Journal of NanoScience, NanoEngineering & Applications
8. Utpal Roy (2013) Associate Editor - World Research Journal of Applied Physics

Awards & Honours

1. Venkata Ramaniah Dantham (2015) Best Poster Award for presenting a poster by our group in DST-SERC School on Modern Optics and Its Applications held at IIT Patna
2. Venkata Ramaniah Dantham (2015) Best Poster Award for presenting a poster by our group in International Conference on Condensed Matter & Applied Physics held at Rajasthan
3. Soumya Jyoti Ray (2016) DST-INSPIRE Faculty Award (direct mode)
4. Utpal Roy (2016) One of my works presented by my student received Best Poster Award in Frontiers in Light-Matter Interaction, IIT Ropar
5. Soumya Jyoti Ray (2015) Postdoctoral Research Fellowship (TU Darmstadt, Germany)
6. Naveen Kumar Nishchal (2015) Senior Member, SPIE
7. Naveen Kumar Nischal (2015) was designated as Senior Member, OSA - The Optical Society.
8. Naveen Kumar Nischal (2015) was awarded Edmund Optics Singapore Educational Award.

Fellowship

1. Prashant Kumar (2015) The Ramanujan Fellowship
2. Soumya Jyoti Ray (2016) DST INSPIRE Faculty Award Fellowship

Visits Abroad by Faculty Members

1. Naveen Kumar Nishchal - Delivering invited talk (Shenzhen, CHINA) Sept. 26-29, 2015
2. Naveen Kumar Nishchal - Delivering invited talk (Vancouver, CANADA) Oct. 16-17, 2015
3. A K Thakur - To attend International Conference on Solid State Ionics (Colorado, USA) 15-19 June, 2015

Invited Lectures by Faculty Members

1. Techniques of optical information security by Naveen Kumar Nishchal (Muzaffarpur)
2. Optical encryption by Naveen Kumar Nishchal (Dehradun)
3. Optical asymmetric cryptosystem and wavelet based image fusion by Naveen Kumar Nishchal (Shenzhen, CHINA)
4. Optical asymmetric cryptosystem and cryptanalysis by Naveen Kumar Nishchal (Vancouver, CANADA)
5. Introduction to Numerical Techniques by Jobin Jose (St. Aloysius college, Mangalore)
6. Nanomaterials for Energy by Ajay Thakur (INUP Workshop Jointly organized by IIT Patna and CeNSE, IISc Bangalore)
7. Optics and Photonics for Future: Material Challenges by Ajay Thakur (SERB School on Optics and Photonics held at IIT Patna)
8. Quantum Optics Lectures by Raghavan K E (IIT PATNA, DST SERC School on Modern Optics and its Applications)
9. Magnetic Three Vectors and Magnetic Materials by Manoranjan Kar (DAV Public School, Hazaribag)
10. How to read Physics by Manoranjan Kar (Kendriya Vidyalaya, Vikram)
11. Quantum confinement: An approach to understand physical phenomena of materials at nanoscale by Manoranjan Kar (Patna University)
12. Cigar-shaped Bose-Einstein condensate trapped in bichromatic optical lattices by Utpal Roy (International Conference on Current Developments in Atomic, Molecular, Nano and Optical Physics with applications (CDAMOP 2015), Delhi University, Delhi)
13. Trap Engineering in a Cigar-Shaped Bose-Einstein Condensate: Exact Analytical Approach by Utpal Roy (Frontiers in Light-Matter Interaction, IIT Ropar)
14. Condensed Ultracold Atoms: A Room for New Technology by Utpal Roy (National Workshop on 'Physics Education: Issues, Challenges and Strategies, Dept of Physics, Magadh Mahila College, Patna)
15. Introduction to Quantum Optics by Utpal Roy (DST-SERB School on Modern Optics and Its Application)
16. Laser synthesis of 2D materials by Prashant Kumar (IIT BHU, Varanasi)
17. Developments on Portable Power Modules : A status Report by A K Thakur (Amity Institute for Advanced Research and Studies)
18. Achieving Low Temperature Ion Conducting Polymers : Contradictions & Reality by A K Thakur (Tezpur Central University, Tezpur, Assam, India)

13. Humanities & Social Sciences

13.1 Faculty List

Associate Professors

Name	Highest Degree	Research Area
Dr. Nalin Bharti	Ph.D	Macroeconomic Reforms, Labour Economics, WTO and India
Dr. Smriti Singh	Ph.D	Contemporary Literary Theory, Linguistics and Language Teaching, Indian Writing in English

Assistant Professors

Name	Highest Degree	Research Area
Dr. Aditya Raj	Ph.D	Sociology of Education, Migration and Diaspora Studies, Development Discourse, Qualitative Research Design, Youth
Dr. Papia Raj	Ph.D	Health care management,, Population and Public Health, Regional Development, Quantitative Methods,Waste Management, Environmental Health
Dr. Priyanka Tripathi	Ph.D	Gender Studies, Indian Writing in English, Short Fiction
Dr. Sweta Sinha	Ph.D	Linguistics, Natural Language Processing, Phonology, Communication Skills, ESL, ELT and Speech Forensics
Dr. Richa Chaudhary	Ph.D	Corporate Social Responsibility, Work Engagement, Human Resource Development Climate, Occupational Self-efficacy, Leadership, Entrepreneurship

13.2 Academic Programs

- Ph. D Program

13.3 Research & Development Activities

Sponsored Research Projects

1. Unnat Bharat Abhiyan, IITP Cell (₹ 20.00 Lakhs)

Papers Published in Journals

1. P. Raj and A. Raj, An Analysis of Waste Production in Patna, International Sociological Association, E-symposium, vol 5(2) 1-13 (2015).
2. P. Tripathi and D. Dey, Baidh/Abaidh: Relationships in Buddhadeva Bose's It Rained All Night and Dibyendu Palit's Illicit, The Commonwealth Review, Vol XXIV (2015).
3. A. Reyaz and P. Tripathi, Fight with/for the Right: An Analysis of Power-politics in Arundhati Roy's Walking with the Comrades, ASEBL, Volume 12, Issue 1 (2016).
4. R. Rajesh and N. Bharti, Monsoon Fluctuation and Consumption Expenditure in India, Journal of Central European Green Innovation, 3(4) JCEGI (2016).
5. P. Tripathi, Quest for an Alternate Paradigm: A Theoretical Expedition of Women and Indian Public Policy, Spectrum: An International Journal of Humanities and Social Sciences, Vol. 3, Issue 1 (2015).
6. Pooja & A. Raj, Representation of Indian Women in select Diasporic Narratives, Forum on Diaspora and Transnationalism, 11 (2015).
7. S. Singh, Revisiting the Mahabharata: Draupadis voice in DivakarunisThe Palace of Illusions,, Cultural Intertexts, Cluj-Napoca: Casa Cartii deStiinta,Vol. 3, 123-132 (2015).
8. A. Raj and V. Nayak, Scheduled Tribe Youth in India and their Institutions: A Study of Dhumkuria, Journal of Exclusion Studies, forthcoming (2016).
9. S. Singh, Self- assessment of Oral Proficiency among ESL learners, ELT Voices, (2015).
10. H. S. Komalesha and P. Tripathi, Textures of Diaspora: Tracing the Cursive Scripts in Michael Ondaatje's Handwriting, Muse India, Issue 62 (2015).
11. R. Chaudhary and S. Rangnekar, Work Engagement in India & Thailand: A Comparative Analysis, Global Business Review (Accepted for publication in 2018 Jan-feb issue), 19.1 (2018).

Papers Presented in Conferences

1. A. Raj, A Study of Different Public Policies for Rural Development, 2nd International Conference on Contemporary Debates in Public Policy and Management, IIM Kolkata (2016)
2. S. Saha and S. Singh, Collaborative Learning through Language Games in ESL Classroom, 3rd International ELT Conference, Amity University, Lucknow (2016)
3. S. Ghazal and S. Singh, Developing Learner Autonomy - A Positive strategy for Large ESL Classes, ELTAI, Ghaziabad (2015)
4. S. Singh, English Language Class for Employability, International Conference on Language Learning & Teaching, Malaysia (2015)
5. S. Ghazal and S. Singh, From Writing to Speaking - Creating Talktime in a Traditional Classroom, 3rd International ELT Conference, Amity University, Lucknow (2016)
6. P. Tripathi, Is Sexuality a Private Affair? Reflections on Patriarchal India challenged by India's Feminist Movement, WEI Conference, Harvard University, Boston, USA (2015)
7. S. Singh, Learner Autonomy: An Empowering Strategy, ELTAI, Ghaziabad (2015)
8. H. Biswas and S. Singh, Reconstructing Power-Relations: A Study of Legal Language and Court-Culture in Vijay Tendulkars "Silence! The Court is in Session", 3rd International ELT Conference, Amity University, Lucknow (2016)
9. P. Tripathi, Reinventing the Intimate Voices: A Close Reading of Indian Women's Autobiography in English, International Conference on Consciousness, Theatre, Literature and the Arts, St. Francis College, New York, USA (2015)
10. P. Raj, Sexual Health Policies for Adolescents in India, 2nd International Conference on Contemporary Debates in Public Policy Management, IIM Kolkata (2016)
11. S. Sinha and S. K. Sharma, Social Status of Women in Bihar: How Bhojpuri and Magahi Accout for it, ELKL 4, Agra (2016)

12. A. Singh and P. Raj, Sustainable Recycling Model for Municipal Solid Waste in Patna, 5th International Conference on Advances in Energy Research, IIT Mumbai (2015)
13. P. Raj and A. Raj, The Glocal Paradox: Waste Production in Patna, Globalisation, Environment and Social Justice: Perspectives, Issues and Concerns, BBAU, Lucknow (2016)
14. P. Tripathi, Translating Desire: Exploring Love and Life in Blue: The Tranquebar Book of Erotic Stories from Sri Lanka, ISCS 2015, Osmania University Hyderabad (2015)

13.4 Other Activities

Member - Professional Bodies

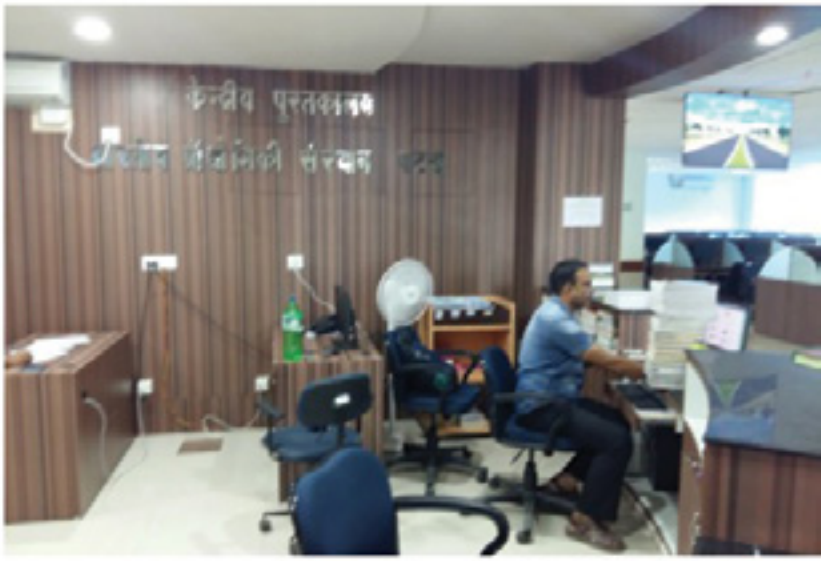
1. Aditya Raj (2004) International Sociological Society
2. Aditya Raj (2003) American Sociological Association
3. Aditya Raj (2001) Indian Sociological Society
4. Nalin Bharti (2012) Virtual Institute UNCTAD - United Nations Conference on Trade and Development Division on Globalization and Development Strategies
5. Nalin Bharti (2012) Indian Economic Association
6. Nalin Bharti (2011) Indian Society of Labour Economics
7. Nalin Bharti (2010) The Indian Science Congress Association
8. Priyanka Tripathi (2015) Indian Society for Commonwealth Studies
9. Richa Chaudhary (2010) Indian Society for Training & Development (ISTD)
10. Richa Chaudhary (2011) International Society for Asia Pacific Studies
11. Smriti Singh (2009) Forum on Contemporary Thoery
12. Smriti Singh (2016) ELT@I
13. Smriti Singh (2016) IATEFL
14. Smriti Singh (2010) Melus- Melow
15. Sweta Sinha (2013) Indian Association of Teacher Educators
16. Sweta Sinha (2013) Linguistic Society of India
17. Sweta Sinha (2013) All India Association of Educational Research

Member - Editorial Board

1. Aditya Raj (2014) Editorial Board - International Journal of Critical Pedagogy
2. Aditya Raj (2014) Editorial Board - International Journal of Youth Studies
3. Nalin Bharti (2013) Member - International Journal of Humanities and Social Sciences
4. Nalin Bharti (2013) Member - International Journal of History and Research
5. Nalin Bharti (2011) Member - Journal of Management & Public Policy
6. Papia Raj (2015) Member of Editorial Review Board - Amity Journal of Healthcare Management
7. Priyanka Tripathi (2015) Member - Langlit- An International Peer- Reviewed Open Access Journal
8. Richa Chaudhary (2015) Member - Review of HRM

Invited Lectures by Faculty Members

1. Interactions with Labour Economist of South Asia and Minister of Labour and Employment by Nalin Bharti (International Seminar on Trade and Employment Challenges Insights for South Asia, Jointly organized by Institute for Human Development New Delhi and International Labour Organization Research Department, Geneva 16-17 December 2015).
2. Economic Development of Bihar : Past and Present by Nalin Bharti (Seminar on 'Economic Development of Bihar since independence and its Future' 12th December 2015 organized by Department of Economics, R B College Dalsinghsarai, Bihar).
3. Child Labour and Rehabilitation in Bihar by Nalin Bharti (UGC sponsored National Seminar on Child Labour and Rehabilitation in Bihar, 27-28 Nov, 2015 Department of Economics, LNMU Darbhanga, Bihar).
4. Health Impacts of Solid Waste Management in Patna by Papia Raj (Human Rights Association of Bihar, Patna)
5. Teaching-research inter-dependence by Aditya Raj (G B Pant University)


केन्द्रीय पुस्तकालय


केन्द्रीय पुस्तकालय


CENTRAL

14. Centralized Services, Programmes and Units

14.1 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 13382 books till date. During 2015 - 2016, 2223 new books have been added to the Central Library. All books are RFID tagged and duly processed before circulation. During this period Central Library has also subscribed various new e-resources in the form of full-text e-journals and e-books. Central Library has procured 04 new e-books collections such as ACS Symposium, Springer (Mathematics & Statistics), McGraw Hill Express Learning (Engineering), Wiley (289 Titles) and also procured the archive collection of RSC journals to satisfy the information need of the users of IIT Patna. Being a core member of E-Sodh Sindu Consortium, Central Library is also getting access of various e-resources from the consortium. Central Library is subscribing Forty Five e-journals packages and twelve e-books packages of different publishers. Central Library is also procuring few popular magazines and eight daily newspapers of English and Hindi languages.

14.2 Computer Center

Faculty in Charge:

Dr. Ashok Singh Sairam (Head of Department, Computer Center)

Dr. Joydeep Chandra (Asst. Head of Department, Computer Center)

Staff:

Mr. Sandip Kishore, Scientific Officer

Mr. Rajender Kumar, JTS

Mr. Ajay Kumar Sharma, JTS

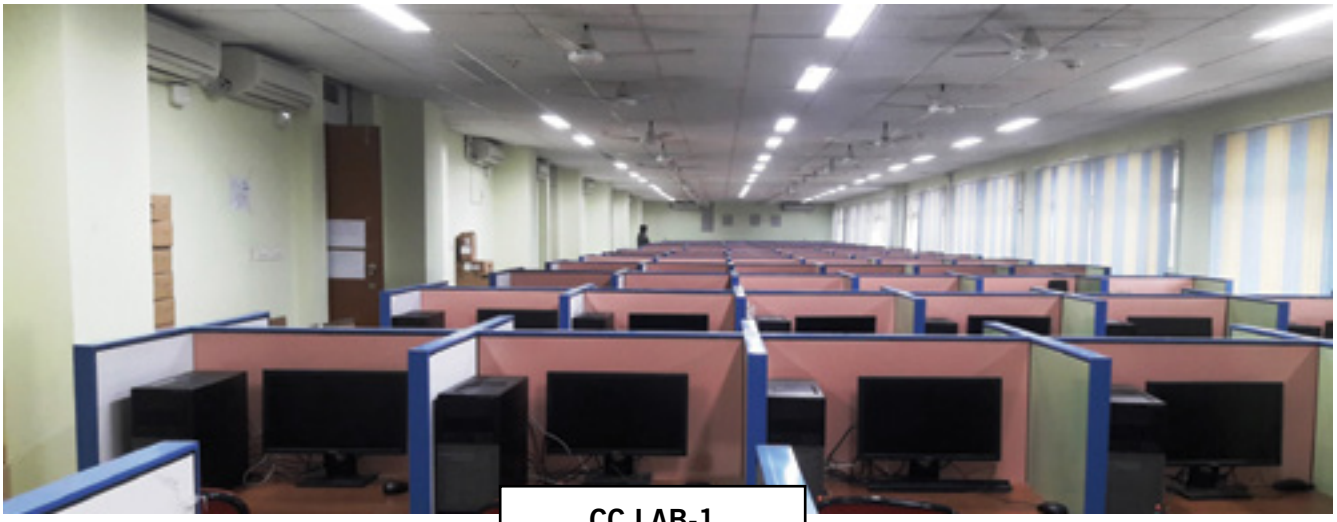
Preface

IIT Patna has a State-of-the-art computer center. There are two computer center labs, CC-1 and CC-2. CC-1 is equipped with 172 desktops and CC-2 is equipped with 42 desktops. These labs operate from 9:00 AM till 12:00 PM on all seven days. In addition there are twelve UNIX/Linux/VMware based servers that caters to the institute IT services like Mail, Institute Webserver, Intranet, Online recruitment and admissions and students' academic requirements and research purpose. Availabilty of the servers and resources is ensured with power back up provided by UPS grid.

A local area network with IP telephony is catering to the needs of students, faculty and staff in academic as well as residential areas. Dedicated NKN (National Knowledge Network) link provides for state of the art virtual classroom service as well as internet. High speed and uninterrupted internet access is provided across the campus to everyone through multiple ISP (Internet Service Provider) leased lines provided by RailTel, Reliance and NKN. The bandwidth details of these leased lines are as follows:

Sl No	ISP	Bandwidth (Mbps)
1	RAILTEL	75
2	Reliance	12
3	NKN	1000*

*Shared for virtual classroom and internet



CC LAB-1

CC LAB-2

Server Room

Hardware Resources

During the period of 2015-16, new state of the art hardware resources were added to Computer Center inventory. These resources align with the requirements of faculty, staff and students.

Following is the list of hardware resources procured:

Sl No	Item	Unit	Price (INR)
1	Desktop	230	1,05,33,901
2	Printer	40	7,98,000
3	NAS Storage	2	1,72,000
4	UPS	3	4,54,000
5	Furnitures (Desktop workspace)	172	44,85,804
TOTAL			1,63,57,705

Overall, hardware resources of value INR 1, 63, 57,705 were procured to cater for the needs of Computer Center.

Software Resources

During the period of 2015-16, new Software resources were added to Computer Center inventory. These resources align with the requirements of faculty, staff and students.

Following is the list of Software resources procured:

Sl No	Item	Unit	Price (INR)
1	Microsoft Campus License	1	7,50,000
2	AntiVirus	1	2,86,200
Total			10,36,200

Overall, Software resources of value INR 10, 36,200 were procured to cater for the needs of Computer Center.

Network

During the FY 2015-16, IIT Patna shifted to its permanent campus in Bihta. To provide LAN, internet and telephone service access across the campus, IIT Patna had floated a tender (via e-tendering) for turnkey solution including design, supply, installation, testing, commissioning, operation & maintenance for 3 years of backbone network for providing Data & Telephone services at Bihta Campus.The project was awarded to M/S IBM India Pvt Ltd and currently it is in final stage of completion.

The value of this project is around ₹6,50,99,490.

The technical solution offered by IBM (CISCO as Original Equipment Manufacurer for active components) has the following salient features:

- The complete solution has 3 layers viz. Core with redundancy, Dual homed Distribution layer with redundancy and dual homed PoE (Power on Ethernet) enabled Access layer.
- Interconnection upto access layer is on OFC (Optical Fibre Cable). The bandwidth planned from core to distribution is 10G+10G upgradable to 40G, from distribution to access is 2G+2G upgradable to 10G and from access to LAN ports is 1G.
- Laying of 16 KM outdoor 48 core 4 tubes armored OFC backbone with 3 rings having enough dark fibers for future expansion. 6/12/24 core OFC cables are planned for indoor cabling.
- Around 130 wireless access points with redundant wireless controller.
- UPS (with 1+1 redundancy for core and distribution) and earthing for all active components with total 159 KVA capacity with 120 min. backup for core, 60 min backup for distribution and 30 min backup for access layer.
- Call Manager with 2000 capacity with redundant voice gateways to support 4 PRI lines and 854 IP telephones.
- NMS, VPN, firewall, Network access control, Identity service engine etc for management and control and network security.

- 3 years warranty with smartnet for CISCO components and 24X7 operation & maintenance. Shall provide 1 site manager+ 3Engineers+1 reliever.
- There are around 3800 end points for LAN/ Internet and IP telephones implemented during this period across the campus.

Sl No	Item	Unit	Price (INR)
1	Data and telephone Network Solution	Campus	6,50,99,490
Total			6,50,99,490

Services and Support

- 365 X 24 X 7 support services for Network
- Desktop/Laptop/Server support on all working days during office hours
- Institute Website and e-mail support.
- VPN for remote access.
- Internet access.
- Wifi (Boys' Hostel).
- Intranet, Leave portal, online academic module.
- Exam related services (GATE).
- Support during Student Placement.
- Conference Site Maintainance.
- Support for training programs organization.
- Support for student Gymkhana website for events like Anwesha, Celesta, Reverberance and other extra cocurricular activities.
- Support for Desktop, Laptop, Printer, network etc related issues.
- Library libsys software support.
- License server support (MATLAB, Mathematica, ANSYS, Tecplot 360 and others).
- Support for Institute meeting resources like web conferencing, internet access etc.
- Support for procurement of departmental and institute assets (Computer and accessories, LAB, furniture and other infrastructure related items).

14.3 Rajbhasha Vibhag

IIT Patna has appointed Mr. Sanjay Kumar, Deputy Registrar, as Hindi Officer of the Institute. He has been assigned with the responsibility of implementation of the official language. Activities of Rajbhasha Vibhag 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 (English and Hindi). Every year, 14th of September, is being observed as Hindi Diwas and different Hindi competitions are organized on this day.

14.4 Incubation Centre

Overview: The Incubation Centre (IC) at IIT Patna is funded by DeitY, Government of India and Bihar Government with the objective of setting up state-of-the-art technical and business facilities to identify, nurture, and translate mature technological ideas into innovative products in the field of Electronic System Design and Manufacturing (ESDM), focusing on Medical Electronics. The Incubation Centre will be an impetus for entrepreneurship amongst students, faculty members, and external innovator. This incubation Centre was inaugurated by Shri Narendra Modi, Hon'ble

Prime Minister of India and Shri Nitish Kumar, Hon'ble Chief Minister of Bihar on 25th of July 2016.

Incubation Centre IIT Patna provides the following major physical Infrastructure and Business supports to the incubates:

Major physical infrastructure

- State-of-the-Art Technology Laboratory facilities of Incubation Centre for Product Development and Prototype in the area of ESDM focusing on medical electronics.
- Fully furnished offices
- Personal computers and printers
- Telecom facilities
- Internet connectivity
- Meeting and conference rooms equipped with projectors & audio/video conferencing facilities
- High-end photocopying, fax, scanning machines, and Wi-Fi

Major business support

- Business plan assistance
- Mentoring support
- Access to professionals with legal, financial, accounting, IP, and industry expertise
- Networking events to facilitate interaction with investors and industries
- Training programs and seminars relevant to entrepreneurs
- Seed fund support on case-to-case basis

Infrastructure:

Temporary infrastructure (Area: 1000 Sq. m.) provided by IIT Patna to Incubation Centre

- About 3000 Sq. m. build up area is allocated by IIT Patna for the construction of IC permanent building in IIT Patna campus. A meeting has been convened in this regard with Bihar State Govt. Agency i.e., BRPNN (Bihar Rajya Pul Nirman Nigam Ltd). A consent letter has been received from BRPNN. Other formalities like drafting of MoU are going on for the construction of the Incubation Centre, in IIT Patna Bihta Campus.

Proposed site of Incubation Centre at IIT Patna campus

- The total sanctioned amount for this project cost is ₹47.10 crore (DeitY's Contribution: ₹22.10 Crores and Govt. of Bihar's contribution: ₹25 Crores).
- First and second installments received from the Govt. of India and the Govt. of Bihar is ₹34.00 lacs and ₹512.40 lacs (Total: ₹546.40 Lacs)
- First installment received from the Govt. of Bihar is ₹600.00 lacs.
- Total Fund received from the Govt. of India and the Govt. of Bihar is ₹1146.40 Lacs
- Total Fund utilized (expenditure and committed) until now is ₹26,302,532.00
- Tendering for the procurement of equipment is under process.
- The IC is registered as per the Society Registration Act 21, 1860 and the registration no. is 987 Dt. 15-Feb-2016

- The call for proposals in the area of Electronic System Design and Manufacturing (ESDM), focusing on Medical Electronics is open for round the year. Prospective innovators may submit their proposals to the Incubation Centre IIT Patna (E-mail Id: manager_ic@iitp.ac.in).

- The Call for proposals was launched in the techno-cultural festival "ANEWSHA-2016" organized in IIT Patna during 21st -25th January-2016.
- The call for proposal from prospective innovators at national level was advertised in national print media.
- Incubation Centre is receiving proposals and EoIs from IIT Patna and other parts of India and the first batch of admission for Incubates is scheduled in the month of August 2016.
- Recently received Project Proposals :
  - Medical Electronic device for Induction of Controlled Angiogenesis for Reperfusion of Ischaemic Tissues
  - Robo Arm Bionic
  - Electronic System for Mobile Ambulance
- Planning to conduct student competitions on "Ideas on Medical Electronics and Devices for society" in national level
- Following State-of-the-art Laboratories are bing setup.
  - Computing Facilities
  - Electronic System Design, Development and Prototype
  - PCB Prototype and Assemble
  - Clean Room and IC/MEMS fabrication
  - Testing & Measurement
  - Mechanical packaging and Product prototype

14.5 Sponsored Research and Industrial Relations Unit [SRIRU]

Dr. Mayank Tiwari, Associate Professor, Department of Mechanical Engineering is the Associate Dean, Research & Development in IIT Patna. The following projects have been sanctioned by the various agencies in the FY 2015-16:

S.No	Name of Project Investigator (c)	Department	Title	Funding Agency	Total amount sanctioned (In lakh)(₹)
1	Dr. Somnath Roy	ME	Technology Gap Analysis Study for the Rice Milling Machinery Cluster in Raxaul, Bihar	TIFAC	7.50
2	Dr. Somnath Sarangi	ME	Technology Gap Analysis Study for the Rice Milling Cluster in Lakhisarai, Bihar	TIFAC	7.50
3	Prof. Pushpak Bhattacharyya	CSE	IIT Bombay- IIT Patna joint project on "Natural Language Processing & Machine Learning	IIT BOMBAY	36.00
4	Dr. Ashok Singh Sairam	CSE	Tunable synchronization of spatially distributed cyber-physical systems	DST	10.00
5	Dr. Rishi Raj	ME	Enhancement of Boiling Heat Transfer via the Suppression of Coalescence in Microgravity	ISRO	26.68
6	Dr Mayank Tiwari, Dr Preetam Kumar, Dr KC Ray		Incubation Center for development of ESDM Industry with focus on medical electronics	DEITY	4,710.00

S.No	Name of Project Investigator (c)	Department	Title	Funding Agency	Total amount sanctioned (In lakh)(₹)
7	Dr. Prashant Kumar	PHYSICS	Ramanujan Fellowship Award	SERB(DST)	89.00
8	Dr. S. Sivasubramani	EE	Testing of rating of motors and other loads	M/s Indian Safety Glass Industries, Patna	0.25
9	Dr. K.C Ray	EE	Special Manpower Development Programme for Chips to System Design	DEITY	60.38
10	Dr. Raju Halder	CSE	Information Leakage Analysis of Database Query Languages	SERB(DST)	19.92
11	Dr. Amit Kumar	CHEMISTRY	Functionalization of the Carbohydrates : Designing New Strategies for the Synthesis of Natural and Modified Sugars via Metal Catalysis	SERB(DST)	24.80
12	Dr. Anirban Chowdhury	MSE	Synthesis & Characterisation of faceted nanocrystalline powders of Ceria-Zirconia and related systems.	SERB(DST)	26.75
13	Dr. Subrata Hait	CIVIL	Performance Evaluation of Saidpur STP, Patna - Phase II	IITM	0.27
14	Dr. Somnath Sarangi	ME	Workshops on soft intervention and CAD CAM skill development for RICE MILL MACHINERY MANUFACTURING CLUSTER, Sheetalpur, Raxaul, East Champaran	Govt. of Bihar	1.60
15	Dr. Karali Patra	ME	Modeling and Analysis of high speed hybrid micro Machining	DST	23.34
16	Dr. Somanath Tripathy	CSE	Development of solution to defend against Collaborative attacks in Peer-to-Peer networks.	DEITY	35.40
17	Dr. Amit Kumar	CHEMISTRY	Imidated : A new class of N-H directing group for C(sp2) - H Activation and tools for synthesis of highly functionalized heterocycles	CSIR	15.72
18	Dr. Rajib Kumar Jha	EE	National conference in computer vision, pattern recognition, image processing and graphics	Others	16.00
19	Dr. Venkata Ramanaiah Dantham	PHYSICS	Real-time detection and sizing of single protein molecule using a nanoplasmonic-whispering gallery mode hybrid microresonator	SERB(DST)	63.17
20	Prof. Pushpak Bhattacharyya	CSE	National Language Processing and Text Mining	BNP	1.46
21	Prof. Pushpak Bhattacharyya	CSE	Sushrut : ezDI Research Lab on Health Informatics	MSPL	6.36
22	Prof. Pushpak Bhattacharyya	CSE	Cross Lingual Information Access Phase II	IITB	1.00
23	Dr. Ranjan Kumar Behera	EE	Recent Advances in Power Electronics for Smart Grid and Electrical Drives	NaMPET	4.10
24	Dr. Sudheer Siddapureddy	ME	Innovation in Science Pursuit for Inspired Research (INSPIRE)	DST	35.00
25	Dr. Subrata Hait, Dr. Avik Samanta	CIVIL	Quality Assurance of Construction Materials of Dr. Kalam Agricultural College, Kishanganj, Bihar	BSBCCL	6.18
26	Dr. Amit Kumar Verma	MATHS	Nonlinear Singular Differential Equations Arising in Real Life	SERB(DST)	16.52
27	Dr. Preetam Kumar	EE	International Symposium on 5G	Center for Telefrastruktur, Aalborg, Denmark & Global ICT Standardization forum for India	15.51

S.No	Name of Project Investigator (c)	Department	Title	Funding Agency	Total amount sanctioned (In lakh)(₹)
28	Dr. Arijit Mondal (Local Coordinator, GIAN)	INSTITUTE	MHRD : Global Initiative for Academic Networks (GIAN)	MHRD	63.52
29	Dr. Trishikhi Raychoudhury	CIVIL	Fate and transport of Engineered Nanoparticles in Natural Sediment and its implication on porous media	SERB(DST)	30.44
30	Dr. T. Rajagopala Rao	CHEMISTRY	Quantum dynamical studies on biomdecular reactions	DST (INSPIRE)	35

14.6 Sophisticated Analytical Instrument Facilities

Similar to other Sophisticated Analytical Instrument Facilities in India, SAIF at IIT Patna is also a DST sponsored facility for characterization of research samples/ materials by paying nominal charges. This facility is open for internal (IIT Patna users) as well as external researchers from academia, research laboratories as well as industries. After receiving the first installment of fund, among the three sanctioned instruments (i) Single crystal XRD and (ii) High resolution Mass spectrometer (HRMS) has been purchased as IIT Patna was functioning from the transit campus till June 2015, installation was delayed till the shifting of the institute to the permanent campus in Bihta. By January 2016 both instruments have been successfully installed. Another sanctioned instrument, a 500 MHz NMR will be added to SAIF after receiving the second installment of funds from DST, India. One Scientific officer (SO) has been recruited and SAIF IIT PATNA is in the process of recruiting one Junior Technical Superintendent for operating and maintenance of SAIF instruments. Scientific Officer as well as a few research scholars have been given training by installation engineers to operate the instrument. A facility management committee (FMC) has been constituted. Presently, users of IIT Patna are using this facility for data collection and it will be open for external users very soon.

Instrument details:

1. High Resolution Liquid Chromatograph–Mass Spectrometer (HR-LCMS)

The system has a liquid chromatography system attached with a mass spectrometer. The make and model of the system is given below.

(A) Ultra High Resolution Time of Flight (UHR-TOF) mass spectrometer

Make: Bruker; Model: Impact HD UHR-TOF mass spectrometer

(B)-High-performance liquid chromatography (HPLC) Make: Thermo Scientific; Model: Thermo Scientific Dionex Ultimate 3000 Rapid Separation LC (RSLC) systems

Applications: HR-LCMSis a powerful technique for separation, general detection, and potential identification of chemicals. It provides information pertaining to the molecular weight, elemental composition, and molecular structure of a compound. This technique provides accurate mass measurements to determine the elemental compositions of new synthetic molecules natural products and drugs etc.

2. Single Crystal X-Ray Diffractometer(SC-XRD)

Make: Bruker Model: AXS D8 QUEST

Applications: Single-crystal X-ray Diffraction is a non-destructive analytical technique which provides detailed information about the internal lattice of crystalline substances, including unit cell dimensions, bond-lengths, bond-angles, and details of site-ordering. Directly related is single-crystal refinement, where the data generated from the X-ray analysis is interpreted and refined to obtain the crystal structure.

Contact person: Dr. Md. Lokman H. Choudhury (Head SAIF-IIT Patna), Email:lokman@iitp.ac.in

14.7 Training and Placement Cell

Training and Placement Cell (TPC) of Indian Institute of Technology Patna, works as an interface between the institute and various industrial organizations and employers. TPC Cell comprising students representatives and faculty members facilitate the process of recruiting final year UG and PG students by providing adminstrative and logistic supports. The Cell also organizes summer internships for the pre-final year B. Tech. students. This year, the cell has been actively involved in placement of the final year UG students and final year PG students, who were admitted in year 2012 and 2014 respectively. Out of 100 B.Tech students registered having CPI≥ 6.5, 94 have got placed in 33 different organizations of repute. The average B.Tech package is Rs 9.94 lakhs per annum. Also out of 54 PG students, who registered for placement, 17 have got placed.

The highest package of more than Rs One Crore was offered by Google during PPO (Pre Placement Offer) and Rs 27 Lakhs per annum by Amazon during Campus Placement for both B.Tech and M.Tech students.

Total 94% of the B.Tech with CPI ≥ 6.5 and 31.48% of the M.Tech students have been placed through campus Placement.

The summer internship for a period of 8 weeks is compulsory component for per-final year UG students of all the branches. Students have been successful in getting summer internship offer from various private companies, public sector undertakings, Institutes, and R&D organizations in India & abroad. Few of the names are Microsoft, Arista Networks, Ezdi, Overcart, Bosch, DRDO, NTPC, IOCL, Hero MotoCorp, Tata Motors, NAL, IISc Bangalore, Maruti Suzuki, Tata Steel etc.

A good number of students are doing their internship abroad including Nanyang Technological University of Singapore, at Paris, SUTD Singapore, Stanford University, University of Tokyo, Indiana University etc.

14.8 Health Facilities

Being an important tool in the development of an institute, health care facilities at IIT Patna has been well planned and executed. IIT Patna Hospital at Bihta campus runs with the help of Ruban Memorial Hospital, Patna. It is functional with primary basic health care facilities for employees and students. Apart from that, we have associated ourselves with local hospitals like Mahavir Vatsalaya Aspatal, Sahayog Hospital, Kurji Holy Family Hospital and Paras HMRI Hospital to cater to the basic needs of our faculty, staff, students and their families on a cashless basis. Hospitalization expense of students is covered under a medical insurance policy. A pharmacist and an assistant are available on a full-time basis to provide emergency first-aid, and for routine medical services. A 24x7 ambulance service is also available to provide emergency services to everyone who is part of IITP system.

14.9 School in the IIT Patna Premises

The growth and future of any country depends on the quality of the school education as the children of today will become the adult citizens of tomorrow. School education lays the foundation stone in building the personality of a person. In order to provide academic excellence maintaining the values of the society in terms of integrity, leadership and resilience, Indian Institute of Technology Patna had put all effort and extended the support to establish the School education in the IITP Bihta Campus. Upon completing the required formalities the Vivashwan Educational and Welfare Society had started the Foundation Academy School in the premises of the IIT Patna, Bihta Campus with a fast growing plan of future endeavour. Foundation Academy School has been established with aim of providing the best possible education based an integrity, honesty, trust and tolerance to the wards of IIT Patna community as well as extending quality school education to the neighbourhood community. The school was inaugurated in this campus of IIT Patna on 15th August 2015 with initial make-shift arrangements for class rooms. Within a very short span of time, except the nursery section, the School has moved to its newly constructed School building. Construction of remaining parts of the school with all other supporting facilities are progressing at a fast pace at the same time expecting that the Foundation Academy will be able to extend the quality school education to the growing buds of the country.

14.10 Unnat Bharat Abhiyan Cell

Unnat Bharat Abhiyan (UBA) Cell of IIT Patna has a core committee lead by the honorable Director 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 administration. A small seed grant has been approved for initiating the activities of the cell. Two research assistants (Mr. Sharique Khan and Mr. Ashutosh Kumar) have been appointed for a limited term under this project. The students from Rural Technology Development Club (RTDC) and Entrepreneurship Club of IIT Patna are also associated with UBA cell. BTech.student, Mr. Anant Arya, is our student representative. We have been trying to reach out to different communities of practice in the cluster of villages around our campus in Bihta. Participant observation and surveys have been undertaken but our pivotal concern has been for trust and confidence building with the all stakeholders in the villages. Our students also have been having good learning experiences in trying to understand the technological need of our village communities. Photograph below show students interacting during their survey on ergonomics.

15. Various Activities at IIT Patna

15.1 Third Convocation

The third Convocation of Indian Institute of Technology Patna was held on 06th August, 2015 in its permanent campus at Bihta. The Chief Guest for this ceremony was the Vice President of Boeing International and President of Boeing India, Dr. Pratyush Kumar.

In B.Tech (2010-2014) batch, the President of India Gold medal was awarded to Sachin Basil John from the Department of Computer Science and Engineering while the Director's Gold medal went to Chaitanya Kansal from the Department of Computer Science and Engineering. Sachin Basil John of Computer Science and Engineering Department, Piyush Sharnma of Electrical Engineering Department and Md. Hasan Dad Ansaari of Mechanical Engineering Department were the class toppers and they received the Institute Silver Medals. Sachin Basil John of Computer Science and Engineering Department, Himal Kumar of Electrical Engineering Department and Srinivas Gunti of Mechanical Engineering Department were the winners of Institute Proficiency prizes for best B.Tech Project.

In B.Tech (2011-2015) batch, the President of India Gold medal was awarded to Prabhakaran S from the Department of Computer Science and Engineering while the Director's Gold medal went to Venkatesh Chaturvedi from the Department of Electrical Engineering. Prabhakaran S of Computer Science and Engineering Department, Saptadeep Pal of Electrical Engineering Department and Aakash Tripathi of Mechanical Engineering Department were the class toppers and received the Institute Silver Medal. Manish Garg of Computer Science and Engineering Department, Saptadeep Pal of Electrical Engineering Department and Ashesh Kumar Chattopadhyay of Mechanical Engineering Department were the winners of Institute Proficiency prizes for best B.Tech Project. Shri Kedar Nath Das Memorial Award was awarded to Manish Garg from the Department of Computer Science & Engineering for overall performance among the students of Computer Science and Engineering Department.

In M.Tech (2012-2014) batch, the Chairman's Gold Medal was awarded to Govind (Specialization: Mathematics & Computing). Govind (Specialization: Mathematics & Computing), Anand Kumar Mishra (Specialization: Mechatronics) and Anirban Chakraborty (Specialization: Nano Science & Technology) were the class toppers and received the Institute Silver Medal. Druv Gupta (Specialization: Mathematics & Computing), Anand Kumar Mishra (Specialization: Mechatronics) and Anirban Chakraborty (Specialization: Nano Science & Technology) were the winners of M.Tech Project Proficiency prizes.

In M.Tech (2013-15) batch, the Chairman's Gold Medal was given to Deepak Kumar Gupta (Specialization: Mathematics & Computing). Deepak Kumar Gupta (Specialization: Mathematics & Computing), Arun Singh (Specialization: Nano Science & Technology), Parmar Pratik Kumar Ashokbhai (Specialization: Mechatronics), Ambarish Madhukar Jadhav (Specialization: Computer Science & Engineering) and Vijay Mukati (Specialization: Communication System Engineering) were the class toppers and received the Institute Silver Medal. Uday Kumar (Specialization: Mathematics & Computing), Parmar Pratikkumar Ashokbhai (Specialization: Mechatronics), Sharmistha Chatterjee (Specialization: Nano Science & Technology), Suraj Suman (Specialization: Communication System Engineering) and Vikram Singh (Specialization: Computer Science and Engineering) were the winners of M.Tech Project Proficiency prizes.

The "Distinguished Academician Award" was given to Padma Vibhushan Dr. G. Madhavan Nair, Padma Vibhushan Prof. M.M.Sharma and Dr. Rajendra Prasad Singh, FNAE at this convocation.

15.2 Foundation Day & Nebula 2015

The freshers party continued its legacy of success. This year's event proved to be the most successful Nebula in the history of IITP - welcoming around 200 freshers this year.The event began with a lamp lighting ceremony shortly followed by formal introductory speech by the Chief Guest. First performance to be showcased was a classical dance and then a group song by first year and second year students. A group of first year students formed a fusion band and performed with tabla, an acoustic guitar and synthesizer in the background and marked the formation of a band of its kind in IITP. After this, IIT Patna witnessed the super awesome mime performance in the institute aptly acted by the freshers depicting the varied mindset of a person in different situations. The excitement augmented to a joyful high when the fashion show embarked on. Beginning the charismatic show, the fresh batch put up an attractive fashion show in which gorgeous looking girls and smartly dressed boys walked the ramp for the coveted Mr. and Miss Fresher's title. The contest, held in a number of rounds was keenly contested and judged the students on different parameters. Ms. Deepali and Mr. Ayush were adjudged as Ms. Fresher & Mr. Fresher respectively. As the mercury began to rise, the dance floor was left open for some unbridled energy and the night concluded with a DJ-Nite.

15.3 Independence Day 2015

The function started with the flag hoisting ceremony by Honorable Director of IIT Patna, Prof. Pushpak Bhattacharyya. This was shortly followed by an inspiring speech by the Director. Lined up next were the several events organized by the students of IIT Patna. The intellectual minds presented a mélange of cultural activities, which created an atmosphere of national pride at the premises of the institute's campus. House of Socio-Cultural Affairs, IIT Patna organized a street play which imparted a very inspiring social message. Other events included the patriotic songs sung by the students. The entire atmosphere was filled with songs full of nationalism highlighting India's flight to progress in spite of its diversity.

15.4 Republic Day, 2016

The show began with the flag hoisting ceremony by Honorable Director of IIT Patna, Prof. Pushpak Bhattacharyya. This was shortly followed up by an inspiring speech by the director. A multitude of cultural activities such as singing of songs, recitation of inspiring poems and mind awakening street play were performed. This recreated an atmosphere of patriotism.

15.5 Conferences, Seminars and Workshops

IEEE International Symposium on 5G, IIT Patna

Below are the highlights of the Three Day IEEE 5G Symposium held at IIT Patna during 29th to 31st March 2016:

Shri Ravi Shankar Prasad, Honorable, Union Minister for Communications & Information Technology Government of India inaugurated the symposium with emphasis on how 5G can serve different requirements in rural and urban India. He also mentioned different policies like Digital India by Government of India in this direction. He enlisted that Digital India has three core components:

- The creation of digital infrastructure
- Delivering services digitally
- Digital literacy

The Honorable minister also promised to set up 5G Innovation Center at IIT Patna for high quality research in this direction.

This symposium hosted researchers from academia, industry, government organizations, etc to participate and share their research intuition and views over the possible 5G technologies, standardization aspects, heterogeneous networks, architectural designs, wireless techniques and new hardware designs, to pave path towards the R&D in near future.

Speakers from across the globe, like Japan, Denmark, Finland, France, USA participated as distinguished speakers during the summit. More than 10 industry CEO/CTO/ Technology leaders have participated. The symposium is also well represented by respected academicians from IITs/NITs and top scientists from Government agency.

Day 2 (30th March 2016) was inaugurated by the Chief Guest, Dr Ashok Choudhary, Honorable Minister Education & IT Government of Bihar. During his inaugural speech, Hon'ble Minister promised that Government of Bihar will always help IIT Patna for research and development. Day-2 include sessions on IPR awareness in technology and science and emphasis of IPRs in 5G regime, Industry presentation on 5G, Industry Academia Networking meet.

Day-3, STANDARDIZATION SERIES MEET: encouraged research scholars and faculties to understand the importance of standardization in cutting edge technology areas like: Security and Privacy; Cloud Service Oriented Network (CSeON); Internet of Things; Green ICT and Spectrum.

Workshop on Cross Lingual Information Access (CLIA)

A 3 day Cross Lingual Information Access Workshop was held at IIT Patna on 23-25th January. This workshop was attended by eminent researchers from IIT Patna, IIT Bombay, IIT Kharagpur, Jadavpur University, Guwahati University, IIIT Bhubaneshwar, IIIT Hyderabad, Anna University, CDAC among others. The goal of the workshop was to deploy the search engine Sandhan developed by the CLIA consortium of India. "SANDHAN" (http://www.tdil-dc.in/sandhan/), was launched by Department of Electronics and Information Technology (DEITY) and was developed by a team of more than 100 researchers (affiliated to more than 10 institutions) with Prof. Pushpak Bhattacharyya as the team leader. Prof. Pushpak Bhattacharyya, FNAE, is Vijay and Sita Vashee Chair Professor of Computer Science and Engineering in the department of IIT Bombay and since June 2015, heading IIT Patna as Director.

Fifth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics [NCVPRIPG]

The Fifth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG) was held at IIT Patna, Bihta, Bihar from 16th to 19th December, 2015. NCVPRIPG was organized by Dr. Rajib Kumar Jha, Assistant Professor, Electrical Engineering Department, Indian Institute of Technology Patna, in association with the Indian Unit for Pattern Recognition & Artificial Intelligence (IUPRAI). NCVPRIPG aims to bring together researchers and practitioners from the allied areas of computer vision, graphics, image processing and pattern recognition, in order to promote communitywide discussions of ideas that will influence and foster continued research in the field.

We received 221 submissions. 101 expert reviewers wrote more than 500 reviews to select the very best papers from these submissions. There were 32 oral presentations and 63 posters from a variety of relevant research areas.

Eminent scientists and researchers who attended this highly reputed National conference include Prof. B. N. Chatterji (as a chief guest), Prof. P. K. Biswas, IIT Kharagpur, (General Chair), Prof. Bhabotosh Chanda, ISI Kolkata, (IUPRAI President), Prof. Parag Choudhuri, IIT Mumbai, (Program Chair) and other scientists from different academic institutions and industries. High quality tutorial sessions were presented by Prof. C. V. Jawahar, IIIT Hyderabad (Title: Deep Learning for Computer Vision), Prof. Subhashis Banerjee, IIT Delhi and Prof. Venu Madhav Govindu, IISC Bangalore (Title: 3D Reconstruction from Images and Videos). Everyday, the conference was started with high quality plenary speakers such as Professor Vijay Natarajan IISc Bangalore (Title: Symmetry in Scientific Data: An Approach to Feature-Directed Visualization), Professor Subhasis Chaudhuri, IIT Mumbai (Title: Salient object detection and image co-segmentation) and Professor Venu Govindaraju from University of Buffalo (Title: All Things Handwritten - OCR and Beyond). All the papers of the conference proceedings are available digitally through IEEE Xplore. Finally, the award committee of the conference decided to give away two Best Oral papers and 2 Best poster papers awards, and accordingly the authors have rewarded the CASH Prize along with certificate of merits.

NCVPRIPG Inaugural session

NCVPRIPG Inaugural session

NCVPRIPG Inaugural session, 2015

NCVPRIPG Tutorial Session, 2015

Global Initiative of Academic Network [GIAN]

Govt. of India approved a new program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs. internationally Institute is to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

In order to garner the best international experience into our systems of education, enable interaction of students and faculty with the best academic and industry experts from all over the world and also share their experiences and expertise to motivate people to work on Indian problems, there is a need for a Scheme of International Summer and Winter Term. During the 'Retreat' of IITs with Minister of Human Resource Development Smt. Smriti Zubin Irani on 29th June, 2014 at Goa, it was decided that "A system of Guest Lectures by internationally and nationally renowned experts would be evolved along with a comprehensive Faculty Development Programme not only for new IITs, IIMs, IISERs but also other institutions in the country.

GIAN Courses offered in FY 2015-2016

Course Name	Advanced Wireless Networks: Joint Design of Technology and Business Models
Foreign Faculty :	Prof. Savo Glisic, Finland
Host Faculty :	Dr. Sudhan Majhi
Duration :	02-04-2016 to 10-04-2016
Status:	Completed successfully.

Following Courses are scheduled in 2016

Course Name	Introduction to Natural Language Processing
Foreign Faculty :	Prof. Sadao Kurohashi, Kyoto University, Japan
Host Faculty :	Prof. Pushpak Bhattacharyya
Duration :	02-05-2016 to 08-05-2016

Course Name	Contemporary Youth Studies
Foreign Faculty :	Professor Shirley Steinberg, University of Calgary, University of The West of Scotland, Canada
Host Faculty :	Dr. Aditya Raj
Duration :	10-06-2016 to 20-06-2016

Course Name	Number Systems for Digital Signal Processing
Foreign Faculty :	Prof. Benjamin Premkumar
Host Faculty :	Dr. Sudhan Majhi
Duration :	01-07-2016 to 08-07-2016

Course Name	Hierarchical Computational Methods for Cross-disciplinary Multiscale Dynamics
Foreign Faculty :	Ganesh Balasubramanian, United States of America
Host Faculty :	Dr. Somnath Roy
Duration :	26-09-2016 to 08-10-2016

Course Name	Cognitive Science for Computational Linguists
Foreign Faculty :	Prof. Massimo Poesio, United Kingdom
Host Faculty :	Prof. Pushpak Bhattacharyya
Duration :	08-12-2016 to 14-12-2016

Course Name	Multiobjective Optimization
Foreign Faculty :	Prof. Carlos A. Coello Coello, Mexico
Host Faculty :	Prof. Pushpak Bhattacharyya
Duration :	15-12-2016 to 22-12-2016

Winter school organized:

The Department of Physics organized a three weeks fully residential school on Modern Optics & Its Applications during Nov. 30 to Dec. 18, 2015. The school was fully sponsored by Science & Engineering Research Board (SERB), Department of Science & Technology (DST), Government of India. The school was attended by 40 participants from various Institutions/Universities across the country.

Inaugural function

[Left to right: Dr. N. K. Nishchal, Prof. M. P. Kothiyal, Prof. P. Bhattacharyya, Prof. P. K. Panigrahi, Dr. U. Roy]

Special dinner on 9th Dec. 2015 at Science Building

[Left to right: Prof. P. Senthilkumaran, Prof. P. Bhattacharyya, Dr. N. K. Nishchal, Prof. L. N. Hazra, Sh. Subhash Pandey, Prof. Nirmal K. Viswanathan]

Winter school participants with Prof. Kehar Singh, Dr. N. K. Nishchal, and Dr. M. Kar on 18th Dec. 2015

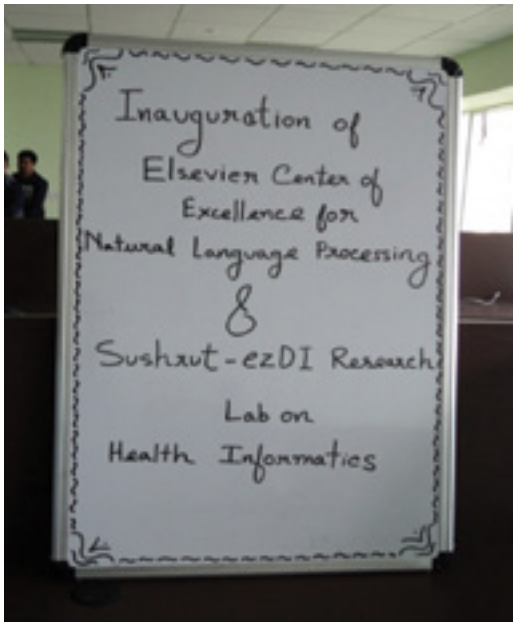
Valedictory function

[Left to right: Dr. A. K. Mukherjee, Prof. Kehar Singh, Prof. P. Bhattacharyya, Prof. R. S. Sirohi, and Dr. N. K. Nishchal]

INUP Familiarization Workshop on Nanofabrication Technologies - IIT Patna, on 8-9 October 2015

INUP@IISc Bangalore and IIT Patna organized a Workshop entitled, "INUP Familiarization Workshop on Nanofabrication Technologies" at IIT Patna, on 8-9 October 2015. This was an event where faculty members from IISc- Bangalore, IIT Mumbai, and IIT Patna worked together to spread among researchers in the Bihar, Jharkhand, Uttar Pradesh (E) and West Bengal, awareness of the expertise and competence in Nanoelectronics available at the Centre for Excellence in Nanoelectronics established at IISc, Bangalore. The workshop was attended by 73 participants from 4 different states. Dr. Sanjeev Kumar Shrivastava (Centre for Nano Science and Engineering Dept. of Electrical Engineering, IISc, Bangalore) and Dr. Sumanta Gupta (IIT Patna) coordinated this event.

15.6 Inauguration of Elsevier Centre of Excellence for Natural Language Processing and Shusrut: ezDI Research Lab on Health Informatics



Scope: Elsevier, the renowned scientific literature publishing company has set up the "Elsevier Centre of Excellence for Natural Language Processing" in the Departmant of Computer Science and Engineeing at IIT Patna to carry out research and dvelopment in some of the novel areas of Artificial Intelligence, Natural Language Processing and Machine Learning. Another company, ezDI has set up the "Sushrut-eZDI Research Lab on Health Informatics", which is dedicated towards developing products for health care and contribute to research having significant outcomes. These labs were set up under the leadership of Prof. Pushpak Bhattacharyya. Two other faculty members, Dr. Asif Ekbal and Dr. Sriparna Saha, and several students including research scholars, research engineers, unergraduate and postgraduate students are actively involved in these labs

Objective: These labs have been set up to conduct research and development in the emerging and novel areas related to the boroad areas of Artificial Intelligence, Natural Language Processing and Machine Learning. The aim is to develop new technologies, solutions as well as new products that will be beneficial to the community at large. The outcomes of the research will be publsihed and patented in reputed conferences, journals and organizations.

Activities: Since after inceptions, significant progress have been made in terms of both research and development. Project investigators along with research scholars, research engineers, B.Tech and M.Tech students frequently discuss the progress of the projects with the industry experts. Recently, ezDI research lab has started collaboartion with Wright State University, USA to work on some specific problems. As part of this collaboration, one of the PhD students, Ms. Sweata is likely to spend six months at Wright State University, USA

Budget:

Elsevier: ₹213.00 Lakhs for 3 years

ezDI: ₹145 Lakhs for three years

15.7 Inauguration of the "Physics Society" at IIT Patna

The research scholars of the Department of Physics, IIT Patna have initiated a society, namely, the Physics Society to cater to the intellectual as well as academic needs of the students upon disseminating intense academic activities of various forms.

The Physics Society, the first society at IIT Patna, was formally inaugurated on 30th of January, 2016, with the Hon'ble Director, IIT Patna, Prof. Pushpak Bhattacharyya as the Guest of Honor. Prof. Ratnamala Chatterjee, Department of Physics, IIT Delhi was the Chief Guest at the inauguration ceremony. All the faculty members and research scholars of the Physics department, M.Tech students from the Nanoscience and Nanotechnology branch as well as faculty members and students from other departments were present at the function.

The event included the introduction to the society by its president, Mr. Rajnish Kumar (Ph.D Scholar in Physics Dept IIT Patna). It was followed by address by the Head of the Department, Department of Physics, Dr. Utpal Roy. Dr. Roy congratulated the students for their novel initiative and encouraged them to use the platform to foster the appropriate scientific aptitude. The guest of honour, Prof. Bhattacharyya too shared the same views and emphasized the role of such societies in the academic development of its members.

The inauguration was followed by the first guest lecture of the Physics Society, delivered by the chief guest of the day, Prof. Ratnamala Chatterjee.

The aims and objectives of the society are as follows:

1. To help in the advancement, dissemination of the knowledge of Physics and implementation of our skills and research work and its applications.
2. To arrange seminars, lectures, debates etc. on research topic of local and national importance and fundamentals of Physics to enhance our basic understanding.
3. To unfold information in the field of Physics by publications including journals, bulletin, reports etc.
4. Society aims to cooperate with the organizations with similar function and objectives.
5. Society intends to start a wall magazine for expressing the ideas and recent important progress in Physics research.
6. Society also aims to organize extracurricular activities like sports, cultural programs, excursions etc.

15.8 5th Research Scholars' Day

National Science Day is celebrated every year on 28th February to commemorate Sir C V Raman's discovery of Raman Effect in 1930.

To celebrate National Science day, IIT Patna organized Research Scholars' Day in the campus on 28-02-2016. The day long program commenced from 9:30 a.m and continued till 6:00 p.m.

The event's attractions were popular lectures by eminent and distinguished academicians. Padma Shri D. B. Phatak (Professor Dept. of CSE, IIT B) was the chief guest. Lectures were also delivered by Prof. R. N. Mukherjee (Director, IISER Kolkata), Prof. Asha Kaul (IIM Ahmedabad) and Prof. Kalyan Chakraborty (HRI Allahabad).

Research Scholars of IIT Patna showcased their research in the poster session. Additionally, selected research scholars from each of the ten departments participated in an oral competition titled "My Research in 3 minutes", wherein research scholars' ability to effectively explain their research in a language appropriate to a non-specialist audience was tested. At this event, research scholars Md Qaisar Raza and Aditi Raj won the awards.

Hon'ble Director, IIT Patna (Prof. Pushpak Bhattacharyya, FNAE) inaugurated the programme. In his speech, he highlighted the importance of application oriented research, entrepreneurship and the new field of "Internet of Things". The event was coordinated by Dr. Om Prakash (faculty in department of Civil Engg.), Dr. Priyanka Tripathi (faculty in department of HSS), Dr. Neeladri Das (faculty in department of Chemistry) and Mr. Nilotpal (PhD student, CSE dept).

15.9 MoU with Center for TeleIn Frastruktur (CTIF), Aalborg University, Denmark

Indian Institute of Technology (IIT) Patna collaborated with Center for TeleInFrastruktur (CTIF), Aalborg University, Denmark on December 09, 2015. A Memorandum of Understanding (MoU) was signed by Prof. Pushpak Bhattacharyya, Director IIT Patna and Prof. Ramjee Prasad, Director CITF, Denmark. CTIF is one of the leading research center in the world. The collaboration of CTIF with IIT Patna will inspire young engineers and researchers of IIT Patna towards research, innovation and entrepreneurship. This co-operation will promote exchange of research programs where students and faculty would be benefited through the latest developments in various engineering disciplines. Prof. Bhattacharyya highlighted the research and academic achievements of IIT Patna. IIT Patna distinctly stands in terms of research and academic infrastructure. After signing the MoU, Prof. Prasad gave a talk on "Human Bond Communications Beyond 2050" which covered variety of topics in the field of wireless communications, specifically focusing on the development of 5G technologies and beyond. Prof Prasad talked about his plan to set up a world class company to develop 5G technologies in Patna. The talk also encouraged students and faculty towards innovation and proposing new ideas in various engineering disciplines for the benefit of society.

15.10 Cultural Activities

Gandhi Jayanti & Swachh Bharat Abhiyaan

On the auspicious occasion of Gandhi Jayanti; a campus cleanliness drive was organized in the morning where all the students of the campus along with the faculties actively took part in cleaning the campus under the flagship of NSS. A classical musical night was organised by House of Socio-Cultural Affairs A multitude of melodius performances was part of the event which made the night a memomrable one.

Reverberance

Diwali is one among those festivals which is most awaited at IIT Patna. To mark and celebrate the festive spirit of Diwali, House of Socio-Cultural Affairs and House of Literature and Fine Arts presented Reverberance, the Inter-Hall Cultural Tournament.

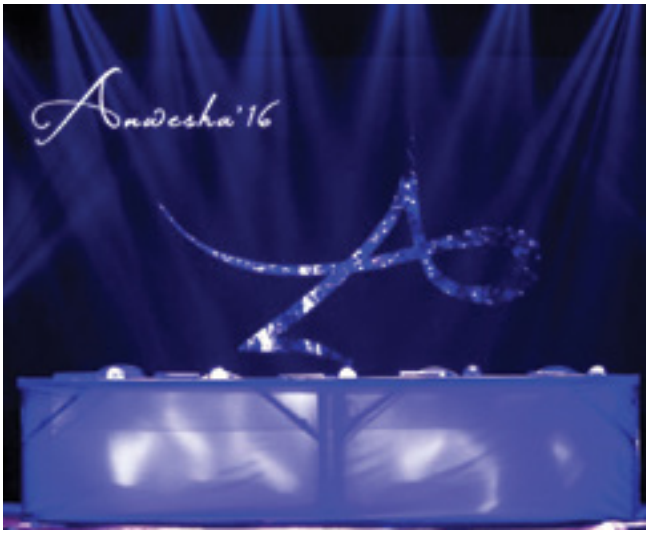
Competitions are the core of any fest and Reverberance is no different. The Inter-Hall Cultural Competitions at Reverberance have been a bastion of opportunities to showcase the talent in any genre of cultural proficiency. Covering the genres of Dance, Dramatics, Design and Gaming, Fine Arts and Music, Reverberance 2015 had something for everyone. Events were planned out for two days and evenings ended with college bands performances, DJ-Nite and special dinner.

Anwesha 2016

Anwesha is a Techno-Cultural extravaganza held every year in spring. Since its inception in 2010, this event has grown into one of the most anticipated student-organized youth festival.

From NASA Scientists to Dancing Idols, from Ethical Hackers to Heartthrob Singers, from Game Development to Gaming Wars, from Robotics to Dramatics, from Model United Nations to Foreign Exchange Conferences, from Sufi to Death Metal, Anwesha, with the tag "Think Dream Live", promised every youth to full-fill his/her dreams to the maximum.

The 2016 edition of Anwesha received participation of around 8000 involving many computer geeks, gaming freaks, technoholics, music & dance maniacs and rock bands hailing from well-known institutes across the country.




Anwesha'16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Matribhasha Diwas (Mother Tongue Day)

As per directives of Ministry of Human Resource Development (MHRD), Govt. of India, IIT Patna celebrated Matribhasha Diwas (Mother Tongue Day) on 21st February, 2016 to promote the use of mother tongues in all educational institutions.

On this occasion, various programmes were arranged. Hon'ble Director expressed his views regarding using of Matribhasha so that the linguistic diversity of our country is preserved. He also emphasized motivating learning languages that are not one's own Matribhasha. Faculty members, students & staff participated in the event with lots of enthusiasm. Employees and Students of IIT Patna recited poems and sang songs in their respective Matribhasha such as Assamese, Bangla, Bhojpuri, Hindi, Manipuri, Punjabi, and Telugu.

Assistant Registrar (Admin.), IIT Patna coordinated the program while Registrar, IIT Patna proposed a vote of thanks.

15.11 Students' Gymkhana

This year we moved to our permanent campus in Bihta. Despite various challenges, we have been able to develop various sports facilities in our main Bihta campus for outdoor games like cricket, football, basketball, volleyball, lawn tennis and indoor games include table tennis, badminton, chess, carom, and a proper multi-gymnasium facility. We also have regular sports training programme under the guidance of expert and experienced coaches.

Some highlights of the year are organization of inter hostel and departmental tournaments in which large number of students participated. We also organized Marathan race, bicycle race, and skating in the campus. Our students have also excelled in sporting activities outside the campus. For instance, IIT Patna boys volleyball team achieved silver medals in M.W.S. Volleyball Tournament-2016 from 8.3.2016 to 20.3.2016 and Sachin (4th year) received player of the tournament and best smasher of the tournament award. Anurag (2nd year) got rising player of the tournament award.

15.12 NSS activities

There are currently two units of National Services Scheme (NSS) functioning at IIT Patna with Dr. Sweta Sinha and Dr. Koushik Roy as the program officers and Dr. Ajay D. Thakur as the program coordinator. Following activities were conducted during the current financial year by the NSS units.

Blood Donation Camp

NSS units at IIT Patna organized two blood donation camps during the current financial year at its campus in Bihta. While the blood bank at the Mahavir Cancer Sansthan came for blood collection for the October 12, 2015 event, the Model blood bank, Jaya Prabha Hospital came for the Blood collection on February 28, 2016. Donors among students, faculty members and staff volunteered with great zeal and enthusiasm in the event. Regional Director, NSS, Shri Deepak Kumar was present during the event on February 28, 2016 to encourage the participants.

Figure 1: Blood donation campt at IIT Patna.

International Women's Day 2016

A weeklong celebration on the occasion of International Women's Day 2016 was celebrated by NSS units at IIT Patna. On March 5, 2016 with a view to recognize the contribution of women in society at large and the efforts taken by working women in maintaining a harmony between family and work. Events like panel discussion, painting exhibition, quiz and cultural programmes were organized to send the message across to the audience. Women of varied age group and educational background gathered under one roof to share their bitter sweet experiences in their journey of life so far. The weeklong celebrations included sensitization of NSS volunteers on topics related to women's empowerment and equality within the Country.

Figure 2: Glimpses on various activities during the celebration of international women's day 2016.

Campus marathon

With Women empowerment and Women equality being the theme, NSS units at IIT Patna organized a campus marathon on March 5, 2016. Students and members of faculty and staff and their families participated with lot of enthusiasm. Prof. Pushpak Bhattacharyya, Director, IIT Patna flagged off the marathon.

Figure 3: Campus marathon organized by the NSS units at IIT Patna on March 5, 2016

Annual Camp and Adhyayan Utsav

National Service Scheme (NSS), the Rural Technnology Development Club (RTDC) and Unnat Bharat Abhiyaan (UBA) Cell of IIT Patna conducted "Adhyayan Utsav", a 6 days Camp in three government funded schools in the town of Bihta: (i)¬ the Middle School, Dilawarpur, (ii) the Middle School, Amhara, and (iii) the High School, Amhara. The student camp was conducted from March 14-19, 2016. NSS volunteers from the two units took part in this camp with lot of interest and dedication. A plethora of activities and competitions were organized for the not so privileged but immensely talented kids of these schools. The activities were so engrossing that they involved each and every soul be it the organizers or the participants. Adhyayan Utsav was very nice experience for the NSS student volunteers who got this opportunity to interact with these children and the event commemorated the ethos behind the National services scheme and also provided a niche for making a connection with the local society for our newly inaugurated campus.

Figure 4: Glimpses from the six day annual camp.

16. Statistical Information

16.1 Admission to Undergraduate Students

Admission to B.Tech.at IIT Patna is through Joint Entrance Examination. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2015-16 is given below:

Students admitted through JEE 2015 in IIT Patna:

Course	Gen	OBC	PD	SC	ST	Grand Total
Computer Science & Engineering	24	14	3	9	3	50
Electrical Engineering	21	12	0	8	4	45
Mechanical Engineering	24	13	0	8	4	49
Chemical Science and Technology	12	6	0	3	1	22
Civil and Infrastructure Engineering	12	6	0	3	2	23
						189

Branch-wise list of students who enrolled for B.Tech at IIT Patna for the academic session 2015-16 is given below:

(I) Computer Science & Engineering:

SN	Roll No	Name	Gender	Category
1	1501CS01	ABHISHEK	Male	SC
2	1501CS02	ABHISHEK AGRAWAL	Male	General
3	1501CS03	ABHISHEK KUMAR	Male	OBC-NCL
4	1501CS04	ABHISHEK KUMAR	Male	SC
5	1501CS05	AJAY DESHMUKH	Male	OBC-NCL
6	1501CS07	ANAND RAJ	Male	SC
7	1501CS08	ANANDA MAZUMDER	Male	SC
8	1501CS09	ANUPAM SINGHAL	Male	General
9	1501CS10	ARINJAYA KHARE	Male	General
10	1501CS11	ASHISH RAJ	Male	General
11	1501CS12	ASHUTOSH DROLIA	Male	General
12	1501CS13	ASHUTOSH DUBEY	Male	General
13	1501CS14	ASHUTOSH KUMAR	Male	General
14	1501CS15	AVINASH KUMAR	Male	OBC-NCL
15	1501CS16	AYUSH MISHRA	Male	General
16	1501CS17	AYUSH SHARMA	Male	General
17	1501CS18	B.SANDEEP SRIVASTAV	Male	OBC-NCL
18	1501CS19	CHIRAG WADHERA	Male	General
19	1501CS20	DASARADHI CHANDRA VADHAN	Male	SC
20	1501CS21	DEEPAK VERMA	Male	OBC-NCL
21	1501CS22	HIMANSHU BARUA	Male	SC
22	1501CS23	JAI TATIA	Male	General
23	1501CS24	KARANAM MAHIDHAR	Male	OBC-NCL

SN	Roll No	Name	Gender	Category
24	1501CS25	KORRA RAVINDER	Male	ST
25	1501CS26	KSHITIJ SUSHEEL JAUHRI	Male	General
26	1501CS27	KULKARNI MALHAR SANJAY	Male	General
27	1501CS28	LAVUDYA SANTHOSH KUMAR	Male	ST
28	1501CS29	MOOLCHANDRA MRIDUL	Male	OBC-NCL
29	1501CS30	NABEEL QAISER	Male	OBC-NCL
30	1501CS31	NERELLA JONA SOLOMON	Male	SC
31	1501CS32	PEDGAONKAR RUSHIKESH SHAMSUNDAR	Male	General
32	1501CS33	PRADEEP KUMAR	Male	OBC-NCL
33	1501CS34	PRANAV MUTHARIA	Male	General
34	1501CS35	PRAVEEN SINGH DHAKED	Male	OBC-NCL
35	1501CS36	RAGHAV JINDAL	Male	General
36	1501CS37	RIJUL DHIR	Male	General
37	1501CS38	SAHARSH SINGH	Male	General
38	1501CS39	SAHIL MANSOORI	Male	OBC-NCL
39	1501CS40	SAHIL SHARMA	Male	General
40	1501CS41	SAIKAT SARKAR	Male	General
41	1501CS42	SHINKU	Male	OBC-NCL
42	1501CS43	SKAND GUPTA	Male	OBC-NCL
43	1501CS44	SUVOM DAS	Male	SC
44	1501CS45	SYED ARBAAZ QURESHI	Male	General
45	1501CS46	THATIPARTHI CHAITHANYA REDDY	Male	General
46	1501CS47	UNNIKRISHNAN.A.S	Male	OBC-NCL
47	1501CS48	VAIBHAV SISODIYA	Male	SC
48	1501CS49	VARUN GARG	Male	General
49	1501CS50	VIJAY KUMAR	Male	General
50	1501CS51	YOGENDRA SINGH IDAPACHI	Male	ST

(II) Electrical Engineering:

SN	Roll No	Name	Gender	Category
1	1501EE01	ABHIJIT ROY	Male	General
2	1501EE02	ABHISHEK KUMAR	Male	General
3	1501EE03	ABHISHEK KUMAR SINGH	Male	General
4	1501EE04	ABHISHEK YADAV	Male	OBC-NCL
5	1501EE05	AJAY KUMAR MEENA	Male	ST
6	1501EE06	AMIT KUMAR	Male	ST
7	1501EE07	ARJUN SANKHALA	Male	OBC-NCL
8	1501EE08	ARVIND DHAKAR	Male	OBC-NCL
9	1501EE09	ASHUTOSH SINGH	Male	OBC-NCL
10	1501EE10	ASMATH ESHWARA VENKATA RAMA KRISHNA	Male	SC
11	1501EE12	B KEDHAR GUHAN	Male	OBC-NCL
12	1501EE13	BATHULA SHIVA KARTHIK REDDY	Male	General

SN	Roll No	Name	Gender	Category
13	1501EE15	BHAVIT SHARMA	Male	General
14	1501EE16	DEBDEEP PAUL	Male	SC
15	1501EE17	DEEPALI KUSHWAHA	Female	OBC-NCL
16	1501EE20	GONEGANDLA PRANESH	Male	General
17	1501EE21	ISHU JAIN	Male	General
18	1501EE22	KOTTAMASU SAI BHARAT HANISH	Male	General
19	1501EE23	MAYANK MANOHAR	Male	General
20	1501EE24	MOHIT KUMAR	Male	SC
21	1501EE25	MRIDULA SINGH	Female	General
22	1501EE26	NITESH KUMAR DWIVEDI	Male	General
23	1501EE27	PAWAN KUMAR MEENA	Male	ST
24	1501EE28	PIYUSH KUMAR AGRAWAL	Male	General
25	1501EE29	PIYUSH MEENA	Male	ST
26	1501EE30	PRATEEK KARNAL	Male	General
27	1501EE31	RAHUL AGGARWAL	Male	General
28	1501EE32	RAJDEEP SINGH	Male	SC
29	1501EE33	RAJEEV VERMA	Male	OBC-NCL
30	1501EE34	RAJNEESH SINGH	Male	General
31	1501EE35	RAJURAM BHATESAR	Male	OBC-NCL
32	1501EE36	RUNGTA NAMAN BADRIVISHAL	Male	General
33	1501EE37	SALVERU ADITYA	Male	OBC-NCL
34	1501EE38	SHANKARDYAL KUMAR	Male	OBC-NCL
35	1501EE39	SHANU MADHUKAR	Female	SC
36	1501EE40	SHASHWAT GUPTA	Male	General
37	1501EE41	SHASHWAT TIWARI	Male	General
38	1501EE42	SHIVAM KUMAR	Male	SC
39	1501EE43	SHIVAM TIWARI	Male	General
40	1501EE44	SOUMIK SIKDER	Male	SC
41	1501EE45	SUDHA CHAUHAN	Female	OBC-NCL
42	1501EE46	SUNNY PATEL	Male	OBC-NCL
43	1501EE47	TARUN GARG	Male	General
44	1501EE48	TARUN KUMAR	Male	SC
45	1501EE49	UMESH KUMAR	Male	General

(III) Mechanical Engineering:

SN	Roll No	Name	Gender	Category
1	1501ME01	ABHILASH KUMAR BEHERA	Male	OBC-NCL
2	1501ME02	ABHISHEK MAURYA	Male	OBC-NCL
3	1501ME03	ABHISHEK SINGH	Male	General
4	1501ME04	ABHISHEK SINGH	Male	SC
5	1501ME05	ALAPAN KAR	Male	General
6	1501ME06	ALOK BARANWAL	Male	General

SN	Roll No	Name	Gender	Category
7	1501ME07	AMRIT RAJ	Male	OBC-NCL
8	1501ME08	ANIL KUMAR BADGOTYA	Male	ST
9	1501ME09	ARYASOMAYAJULA MRUNAL KRISHNA SARMA	Male	General
10	1501ME10	ASHISH KUMAR	Male	OBC-NCL
11	1501ME11	ASHISH KUMAR	Male	OBC-NCL
12	1501ME12	AUGUST DUBEY	Male	General
13	1501ME13	AVINASH KUMAR	Male	General
14	1501ME14	BHANDARE ARJUN BHALCHANDRA	Male	OBC-NCL
15	1501ME15	BHAVESH MENDHEKAR	Male	General
16	1501ME16	BODEMPUDI YASWANTH SANDEEP	Male	General
17	1501ME17	BUSIREDDY VENKATA DHEERAJ REDDY	Male	General
18	1501ME18	CHANDAN GUPTA	Male	General
19	1501ME19	CHINTHA TEJESWAR REDDY	Male	General
20	1501ME20	DEO BHUSHAN DHANANJAY	Male	General
21	1501ME21	DHAWAL GUPTA	Male	General
22	1501ME22	GAURAV SRIVASTAVA	Male	General
23	1501ME23	GIRIJESH TIRPATHI	Male	General
24	1501ME24	HARIRAJ MEENA	Male	ST
25	1501ME25	HITARTH SHAH	Male	General
26	1501ME26	JANJARLA RAJA SHEKAR	Male	SC
27	1501ME27	JAY BHUSHAN	Male	SC
28	1501ME28	JAYANT SAINI	Male	OBC-NCL
29	1501ME29	KANDADI VENU MADHAVA	Male	General
30	1501ME30	KARAN KUMAR GUPTA	Male	General
31	1501ME31	KULKARNI ANIKET LAXMIKANT	Male	General
32	1501ME32	MANIK MANOHAR	Male	SC
33	1501ME33	MANTAVYA AGARWAL	Male	General
34	1501ME34	MENDE AKSHAY	Male	OBC-NCL
35	1501ME35	NAGUDALA MANOJ KUMAR	Male	OBC-NCL
36	1501ME36	NIRANJAN MEENA	Male	ST
37	1501ME37	PARVEEN	Male	SC
38	1501ME38	RAHUL DILARE	Male	SC
39	1501ME40	RAJENDRA VERMA	Male	SC
40	1501ME41	RANGALA TEJESWAR REDDY	Male	OBC-NCL
41	1501ME42	RISHABH SHUKLA	Male	General
42	1501ME43	ROHIT	Male	OBC-NCL
43	1501ME44	SAKET	Male	SC
44	1501ME45	SANJIB SAIKIA	Male	ST
45	1501ME46	SARIM KAMAL	Male	General
46	1501ME47	SHIKHAR CHOUDHARY	Male	General
47	1501ME48	SHOBHIT SAINI	Male	General
48	1501ME49	SHUBHENDU YADAV	Male	OBC-NCL
49	1501ME50	TALELE ABHISHEK SUNIL	Male	OBC-NCL

(IV) Civil Engineering:

SN	Roll No	Name	Gender	Category
1	1501CE01	AJAY	Male	General
2	1501CE02	AMAN KUMAR	Male	OBC-NCL
3	1501CE03	ATUL KUMAR	Male	OBC-NCL
4	1501CE04	G VENKATA SAI SWAROOP	Male	OBC-NCL
5	1501CE05	GUNSAGAR RAJPOOT	Male	OBC-NCL
6	1501CE06	INJAMALA SHARON KUMAR	Male	SC
7	1501CE07	MALAYANUR NARSIMHA SASHANK	Male	General
8	1501CE09	MOHIT SINGH	Male	General
9	1501CE10	NIPOON GUPTA	Male	General
10	1501CE11	PALAVALASA MANOHAR	Male	OBC-NCL
11	1501CE12	PAWAN MEGHWAL	Male	SC
12	1501CE13	RAHUL JAIN	Male	General
13	1501CE14	SATYAM MISHRA	Male	General
14	1501CE15	SAURABH DUBEY	Male	General
15	1501CE16	SHIVANSHU SINGH	Male	ST
16	1501CE17	SHIVPREET SHARMA	Male	General
17	1501CE18	SHUBHAM UPADHYAY	Male	General
18	1501CE19	SUMIT KUMAR AGRAWAL	Male	General
19	1501CE20	SUMIT KUMAR NANDAN	Male	OBC-NCL
20	1501CE21	SUSHIL KUMAR MEENA	Male	ST
21	1501CE22	VISHAL RAWAT	Male	General
22	1501CE23	VISHAL VERMA	Male	SC
23	1501CE24	VUNDELA HARSHAVARDHAN REDDY	Male	General

(V) Chemical Science and Technology:

SN	Roll No	Name	Gender	Category
1	1501CH01	ABHIMANYU SINGH RATHORE	Male	General
2	1501CH03	AKHIL JAIN	Male	General
3	1501CH04	AMAN KUMAR	Male	OBC-NCL
4	1501CH05	AMIT MEENA	Male	ST
5	1501CH06	ARPIT KUMAR	Male	OBC-NCL
6	1501CH07	ASHISH KUMAR SINGH	Male	General
7	1501CH08	AVIRAL KUMAR	Male	SC
8	1501CH09	AYUSH SAXENA	Male	General
9	1501CH10	BHARAT KUMAR CHOUHAN	Male	SC
10	1501CH11	BOTCHA VIDYA SAGAR	Male	SC
11	1501CH12	DIVYANSHU KHANDELWAL	Male	General
12	1501CH14	NITIN SHARMA	Male	General
13	1501CH15	PRATEEK SAXENA	Male	General
14	1501CH16	RISHABH YADAV	Male	OBC-NCL
15	1501CH17	SANKET PAI	Male	General

SN	Roll No	Name	Gender	Category
16	1501CH18	SAURABH GULATI	Male	General
17	1501CH19	SAURABH SINGH	Male	General
18	1501CH20	SHUBHAM UPADHYAY	Male	General
19	1501CH21	SYKAM VENKATESH VARMA	Male	OBC-NCL
20	1501CH23	VIJAY YADAV	Male	OBC-NCL
21	1501CH24	VIVEK ARSHIBHAI NAKUM	Male	General
22	1501CH25	VIVEK KUSHWAHA	Male	OBC-NCL

16.2 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, 2015. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2015-16 is given below:

Students admitted in M.Tech in 2015-16 in IIT Patna:

Course/Specialization	Category					Grand Total
	GEN	OBC	PD	SC	ST	
CIVIL & INFRASTURUCTURE ENGINEERING	8	4	0	1	0	13
COMMUNICATION SYSTEM & ENGINEERING	7	3	1	1	1	12
COMPUTER SCIENCE & ENGINEERING	6	4	0	1	0	11
MATERIAL SCIENCE & ENGINEERING	4	1	0	0	0	5
MATHEMATICS & COMPUTING	6	5	0	3	0	14
MECHANICAL ENGINEERING	4	3	0	2	0	9
MECHATRONICS	6	3	0	0	0	9
NANOSCIENCE AND TECHNOLOGY	6	4	0	1	0	11
Grand Total	47	27	1	9	1	84

Branch-wise list of students who enrolled for M.Tech at IIT Patna for the academic session 2015-16 is given below:

(I) Civil & Infrastructure Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511CE01	ABHISHEK ANAND	Male	General
2	1511CE02	ARABINDA SWAIN	Male	General
3	1511CE03	ARANYAK DHAR	Male	General
4	1511CE04	ASHISH RANJAN	Male	OBC (NCL)
5	1511CE05	DATTATREYA TRIPATHY	Male	General
6	1511CE06	DEEPAK KUMAR SINHA	Male	OBC (NCL)
7	1511CE08	KRISHNA NAND THAKUR	Male	OBC (NCL)
8	1511CE09	MOHD ZIA HUSSAIN	Male	General
9	1511CE10	RANDHIR RAJ	Male	OBC (NCL)
10	1511CE11	RATNADEEP ROY	Male	SC
11	1511CE12	ROHAN KUMAR CHOUDHARY	Male	General
12	1511CE13	SHOAIB ASIF	Male	General
13	1511CE14	VIKRAM CHOUDHARY	Male	General

(II) Communication System & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511EE01	ANKIT MAKKAR	Male	General
2	1511EE02	DEEPAK AGARWAL	Male	General
3	1511EE03	KUMAR GUNJAN	Male	OBC (NCL)
4	1511EE04	KUNDAN KUMAR SINHA	Male	OBC_PD (NCL)
5	1511EE05	MANISH KUMAR MAHTO	Male	SC
6	1511EE06	NAMITA SINGH	Female	General
7	1511EE07	PREETAM KUMAR	Male	OBC (NCL)
8	1511EE08	RAHUL KUMAR	Male	General
9	1511EE09	RAJRSHI DUBEY	Male	General
10	1511EE10	RASHMI SWETA HEMBROM	Female	ST
11	1511EE11	ROHIT RAI	Male	General
12	1511EE12	SARASWATI KUMARI	Female	General

(III) Computer Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511CS01	AVIRAL BHARDWAZ	Male	General
2	1511CS02	BHAVSAR MAITRY HIRENBHAI	Female	General
3	1511CS03	MANDEEP KAUR	Female	General
4	1511CS04	PRAVEEN KUMAR	Male	SC
5	1511CS05	SAURABH CHAUDHARY	Male	OBC (NCL)
6	1511CS06	SAURABH SRIVASTAVA	Male	General
7	1511CS07	SHIVI PATEL	Male	OBC (NCL)
8	1511CS08	SHOBHIT SENGAR	Male	General
9	1511CS09	SIDDHANT JAISWAL	Male	General
10	1511CS10	SUDEEP SHARMA	Male	OBC (NCL)
11	1511CS12	VIKRAM SINGH	Male	OBC (NCL)

(IV) Materials Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511MS01	AMRITA ROY	Female	General
2	1511MS03	MAYANK VARSHNEY	Male	General
3	1511MS04	NISHTHA SINGH	Female	General
4	1511MS05	RAVIKARAN SINGH	Male	OBC (NCL)
5	1511MS06	SEPHALI PANDEY	Female	General

(V) Mathematics & Computing:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511MC01	ABHISHEK BANSAL	Male	General
2	1511MC02	APARNA CHIGURUPALLI	Female	OBC (NCL)
3	1511MC03	ARABINDA BEHERA	Male	General

Sl No.	Roll No	Name of Candidate	Gender	Category
4	1511MC04	BITOPAN DAS	Male	SC
5	1511MC05	GOPAL JEE JHA	Male	General
6	1511MC06	GYAN RANJAN	Male	OBC (NCL)
7	1511MC07	KAMAL SINGH	Male	OBC (NCL)
8	1511MC09	NILAMADHABA MOHAPATRA	Male	General
9	1511MC10	RAJKARAN KORI	Male	SC
10	1511MC11	RAMEN GHOSH	Male	General
11	1511MC12	SONAM SINGH	Female	SC
12	1511MC13	SONU SHRESHTHA	Male	OBC (NCL)
13	1511MC15	UJJWAL PRATAP	Male	General
14	1511MC16	VARSHA SHARMA	Female	OBC (NCL)

(VI) Mechanical Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511ME01	AMIT KUMAR	Male	OBC (NCL)
2	1511ME02	AMIT NARAYAN MISHRA	Male	General
3	1511ME06	DEEPAK SHARMA	Male	General
4	1511ME07	DHARMENDRA KUMAR ANURAG	Male	SC
5	1511ME09	HIMANSHU DWIVEDI	Male	General
6	1511ME10	KUNDAN KISHORE	Male	OBC (NCL)
7	1511ME11	NITESH KUMAR	Male	OBC (NCL)
8	1511ME13	TAPAN SOOD	Male	General
9	1511ME14	VINAY KUMAR	Male	SC

(VII) Mechatronics:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511MT03	ANIT KUMAR	Male	OBC (NCL)
2	1511MT04	ANOOP KUMAR SINHA	Male	General
3	1511MT05	BISWA RANJAN DAS	Male	General
4	1511MT06	HIMANSU SHAW	Male	OBC (NCL)
5	1511MT07	JUAN CHOWDHURY	Male	General
6	1511MT08	KISHAN GOPAL KARWA	Male	General
7	1511MT10	SANJEET KUMAR	Male	OBC (NCL)
8	1511MT12	SUJIT KUMAR SAHU	Male	General
9	1511MT13	SUMIT BANERJEE	Male	General

(VIII) Nanoscience & Technology:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	1511NT01	AKSHAY SAXENA	Male	General
2	1511NT02	ANAND KUMAR UPADHYAY	Male	General
3	1511NT03	ANURAG CHAUDHURY	Male	General

Sl No.	Roll No	Name of Candidate	Gender	Category
4	1511NT05	CHANDAN KUMAR	Male	OBC (NCL)
5	1511NT06	KIRAN SINGH	Female	SC
6	1511NT07	MANOJ KUMAR JOSHI	Male	General
7	1511NT08	NIKITA KUMARI	Female	OBC (NCL)
8	1511NT09	PRABHAKAR KOSARAJU	Male	General
9	1511NT11	PRAVEEN KUMAR KUSHWAHA	Male	General
10	1511NT12	REBTI BHUSHAN	Female	OBC (NCL)
11	1511NT13	VAISHALI CHAUHAN	Female	OBC (NCL)

16.3 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:** ₹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 ₹250/- per month.

Provided below are the details of the MCM scholarships awarded during FY 2015-16:

Batch	GEN+OBC	SC+ST	Total
2012	23	3	26
2013	34	6	40
2014	35	12	47
2015	36	7	43
Total	128	28	156

The following 156 undergraduate students (B.Tech. Programme) were selected for the award of the Merit-Cum-Means (MCM) scholarship in the academic year 2015-16 by the Institute:

Sl. No.	Name of the Student	Roll No.
1	ANUBHAV JOSHI	1201CS03
2	OM PRAKASH CHAURASIA	1201CS42
3	SAYAN CHAKRABORTY	1201EE32
4	VISHAL CHAURASIA	1201ME37
5	RAJU GUPTA	1201ME22
6	VITTHAL PANDEY	1201ME38
7	SARNADUTI BRAHMA	1201EE31
8	SATYANSHU SHUKLA	1201CS31
9	MAYANK AGGARWAL	1201EE22
10	DEVANSHU GANATRA	1201ME08
11	VIKESH	1201EE39
12	YOGESH PATEL	1201CS39
13	CHERVPALLY SAIRAM	1201CS09
14	PRIT RANJAN KUMAR	1201ME21
15	AVISHEK KUMAR GUPTA	1201ME07
16	HUMA FARHEEN	1201CS16

Sl. No.	Name of the Student	Roll No.
17	ABHILASH KUMAR	1201EE01
18	RAGHAV RASTOGI	1201EE28
19	K SREE HARSHA	1201ME14
20	PRANEETH CHEEKOTI	1201EE08
21	VIKAS JINDAL	1201CS37
22	DEEP SURESH THAKKAR	1201ME33
23	K RISHITA	1201CS17
24	SHASHANK SINGH	1201ME26
25	CHOUTI ROSELEEN	1101CS12
26	HUKAMI MEENA	1201CS15
27	MAYANK ARYA	1301CS28
28	ANKIT KUMAR	1301CS10
29	NITISH KUMAR	1301ME30
30	RAVI SONAM	1301CS37
31	K TEJRAM	1301CS22
32	J AJAY REDDY	1301CE11
33	KUMAR GAURAV	1301CE12
34	VINAY KUMAR YADAV	1301CS45
35	MULAY GANESH ANIL	1301EE19
36	ANKIT CHOUDHARY	1301CS53
37	SUNNY NARAYAN	1301CS43
38	KSHITIJ KUMAR CHOUDHARY	1301ME23
39	AYUSH GARG	1301CS55
40	AMAN PRAKASH SINGH	1301EE02
41	RAJKISHOR RANJAN KUMAR	1301CS35
42	SAGAR KUMAR VERMA	1301CS39
43	RUSTAM KUMAR	1301EE31
44	ABHINAV KUMAR DAS	1301ME02
45	VAIBHAV KABDAL	1301ME47
46	TULASI CHANDAN BEHRA	1301EE42
47	DEEPAK KUMAR	1301EE09
48	DIVYA GARG	1301CH09
49	BATHINA V M S R KRISHNA BABU	1301EE07
50	ALOK PATWAL	1301CS07
51	RAMAYAN KUMAR	1301CS36
52	MOHAMMED SHIYAS PC	1301EE18
53	HIMANSHU GARG	1301CS20
54	LOKESH AGARWAL	1301EE13
55	OM PRAKASH SAHU	1301ME31
56	ABHISHEK BHAWSAR	1301CH02
57	SHIVAM YADAV	1301CE21
58	AJAY SHARMA	1301CH04

Sl. No.	Name of the Student	Roll No.
59	ARPIT BANSAL	1301ME10
60	ABHIJEET SINGH	1301CH01
61	ANKITA SINGH	1301EE03
62	PURSOUTTAM PRASAD RAM	1301ME34
63	MADAN MOHAN BAIRWA	1301EE14
64	ASHUTOSH SINGH	1301CE03
65	GUGULOTH MAHENDER	1301CH10
66	M G NAVEEN KUMAR	1301CS29
67	ALAN AIPE	1401CS50
68	T REDDY MANOJ REDDY	1401CS54
69	SATISH GUPTA	1401CS55
70	SAURABH KUMAR	1401CH20
71	VOORE MANOJ KUMAR	1401EE49
72	SARTHAK RASTOGI	1401ME37
73	SHAILESH KUMAR KASHYAP	1401EE39
74	JATIN KALRA	1401ME19
75	RAJDEEP GUPTA	1401CS38
76	AMAN OMKAR	1401EE06
77	ABHISHEK JAISWAL	1401CS02
78	SHUBHASH INDRABHAN PATEL	1401CE17
79	HAROON RASHID	1401ME15
80	HARSHIT AGRAWAL	1401ME16
81	PRANJALI SHARMA	1401CH16
82	AKSHAY PATNI	1401CE05
83	SACHIN KUMAR	1401EE36
84	APOORVA SHRIVASTAVA	1401CH04
85	MOHD ASAD	1401EE23
86	RAKESH KUMAR BIJARNIYA	1401EE30
87	CHIRAG SONI	1401CS13
88	VIPIN MAVI	1401CS48
89	CH PRANAY TEJA REDDY	1401EE12
90	PARAS MANI	1401EE26
91	SOURABH JAIN	1401ME45
92	MOHIT SHARMA	1401ME28
93	LAXMAN KUMAR PRABHAKAR	1401CS22
94	B SAI KRISHNA KANTH	1401EE11
95	ANKIT CHAHAL	1401CH03
96	S VIJAY ANAND	1401ME35
97	LAKHAN AGGRAWAL	1401CH10
98	MAYANK TIWARI	1401CH12
99	VISHVESH NARAIN RAI	1401CH25
100	MIRIYALA SAI SREE REDDY	1401CS26
101	SAI MANISH B	1401ME36

Sl. No.	Name of the Student	Roll No.
102	LOKESH KUMAR RAIGER	1401EE19
103	AKASH GOYAL	1401EE04
104	P VENKATESH	1401CS32
105	HETRAM MEENA	1401EE18
106	DESHRAJ MEENA	1401EE14
107	SHIVAM KUMAR SUTRAKAR	1401CH22
108	DHONGADE RITESH JANARDHAN	1401CE11
109	ANURAG MEENA	1401ME05
110	ASHISH KUMAR	1401ME06
111	ABHISHEK MEENA	1401EE03
112	ALPESH RAJESH MORE	1401EE05
113	MADDU AAKASH SASTRI	1401CH11
114	THATIPARTHI CHAITHANYA REDDY	1501CS46
115	G VENKATA SAISWAROOP	1501CE04
116	RANGALA TEJESWAR REDDY	1501ME41
117	SAHIL MANSOORI	1501CS39
118	ALAPAN KAR	1501ME05
119	NAGUDALA MANOJ KUMAR	1501ME35
120	VIJAY KUMAR	1501CS50
121	SAIKAT SARKAR	1501CS41
122	ARPIT KUMAR	1501CH06
123	PRAVEEN SINGH DHAKED	1501CS35
124	MOOLCHANDRA MRIDUL	1501CS29
125	P MANOHAR	1501CE11
126	SAURABH DUBEY	1501CE15
127	ASHISH KUMAR	1501ME11
128	ABHISHEK MAURYA	1501ME02
129	ABHISHEK KUMAR	1501CS03
130	SHIVAM TIWARI	1501EE43
131	KULKARNI ANIKET LAXMIKANT	1501ME31
132	AUGUST DUBEY	1501ME12
133	VIJAY YADAV	1501CH23
134	PRADEEP KUMAR	1501CE33
135	AVINASH KUMAR	1501CS15
136	SALVERU ADITYA	1501EE37
137	NIPOON GUPTA	1501CE10
138	ASHUTOSH DUBEY	1501CS13
139	SUNNY PATEL	1501EE46
140	MOHIT SINGH	1501CE09
141	DEO BHUSHAN DHANANAJY	1501ME20
142	RAJURAM BHATESAR	1501EE35
143	SHIVPREET SHARMA	1501CE17
144	NITIN SHARMA	1501CH14

Sl. No.	Name of the Student	Roll No.
145	AKHIL JAIN	1501CH03
146	ASHISH RAJ	1501CS11
147	BATHULA SHIVA KARTHIK REDDY	1501EE13
148	GIRIJESH TRIPATHI	1501ME23
149	SUMIT KUMAR NANDAN	1501CE20
150	SUSHIL KUMAR MEENA	1501CE21
151	ANAND RAJ	1501CS07
152	PAWAN KUMAR MEENA	1501EE27
153	SOUMIK SIKDAR	1501EE44
154	BHARAT KUMAR CHOUHAN	1501CH10
155	ABHISHEK KUMAR	1501CS04
156	RAHUL DILARE	1501ME38

16.4 Students Enrolled in Undergraduate Courses

The Table below gives the total number of students in B.Tech. course (Upto April 2016):

Batch	Gen	ST	SC	OBC	PD	Total
2010	0	0	1	0	0	1
2011	0	1	1	0	0	2
2012	57	9	17	33	2(Gen.)	118
2013	84	16	27	49	3(2 Gen. & 1OBC)	179
2014	88	15	26	50	3(2Gen. & 1 OBC)	182
2015	92	13	30	50	3(1Gen., 1 OBC, 1 SC)	188

16.5 Statement of Results [Undergraduate]

Following table shows the summary of the results of the undergraduate students at IIT Patna in the year April 2015 to March 2016 (upto end semester examination Dec, 2015):

Years		CSE	EE	ME	CE	CH	All Dept.
4th Year	Total	45	38	35	0	0	118
	Pass	44	38	34	0	0	116
	Fail	1	0	1	0	0	2
3rd Year	Total	54	42	45	20	17	178
	Pass	54	40	42	19	17	172
	Fail	0	2	3	1	0	6
2nd Year	Total	55	44	46	18	20	183
	Pass	53	40	45	15	19	172
	Fail	2	4	1	3	1	11
1st Year	Total	51	45	48	23	22	189
	Pass	49	43	46	22	21	181
	Fail	2	2	2	1	1	8

Years		CSE	EE	ME	CE	CH	All Dept.
All Years							
(Registered)	Total	205	169	174	61	59	668
	Pass	200	161	167	56	57	641
	Fail	5	8	7	5	2	27
On Leave/							
Not Registered		0	0	2	0	0	2
Grand Total							

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

16.6 Statement of Results [Postgraduate]

Following table shows the summary of the results of the Postgraduate students at IITPatna in the FY2015-16:

Years		Civil & Infrastructure Engineering	Computer Science & Engineering	Communication System Engineering	Mathematics & Computing	Mechanical Engineering	Materials Science & Engineering	Mecha-tronics	Nanos-cience & Technology	All Dept.
1st Year	Total	13	11	12	14	09	05	09	11	84
	Pass	12								
(01 not appeared)	11	12	13							
(01 not appeared)	08									
(01 not appeared)	05	07								
(02 not appeared)	10									
(01 not appeared)	78									
(06 not appeared)										
	Fail/ Inco-mplete	01	0	0	01	01	0	02	01	06
2nd Year	Total	14	12	14	09	08	10	11	10	88
	Pass	13	12	14	09	08	10	11	10	87
	Fail/ Inco-mplete	01	0	0	0	0	0	0	0	01
All Years										
(Registered)										
	Total	27	23	26	23	17	15	20	21	172
	Pass	25	23	26	22	16	15	18	20	165
	Fail/ Incom-plete	02	0	0	01	01	0	02	01	07
On Leave/ Not Registered		03	0	01	01	01	0	02	01	09
Grand Total		24	23	27	22	16	14	18	20	164

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

16.7 List of Research Scholars Enrolled for the PhD Degree

The table below represents the number of research scholars in various departments as of FY 2015-16:

Year Of Admission	Schools										Total
	School of Engineering						School of Basic Sciences			School of Humanities and Social Sciences	
	CBE	CEE	CSE	EE	ME	MSE	CHE	MA	PHY	HSS	
2009-10	00	00	00	03	02	00	00	00	02	01	08
2010-11	00	00	03	02	00	00	00	04	00	01	10
2011-12	00	00	06	02	04	01	05	02	03	00	23
2012-13	00	00	01	04	02	00	00	06	03	03	19
2013-14	00	04	11	11	08	03	07	03	06	03	56
2014-15	01	01	06	18	11	01	04	06	05	01	54
2015-16	03	03	19	13	15	04	09	11	05	08	90
TOTAL	**04**	**08**	**46**	**53**	**42**	**09**	**25**	**32**	**24**	**17**	**260**

RESEARCH SCHOLARS ENROLLED IN ACADEMIC YEAR 2015-16

Sl. No.	Name of Research Scholar	Batch	Roll No.	Department
1.	SANCHARI BHATTACHARJEE	PHD JAN 16	1621CB01	Chemical & Biochemical Engg.
2.	SUSHMA KUMARI	PHD JAN 16	1621CB02	Chemical & Biochemical Engg.
3.	SANDHYA MISHRA	PHD JAN 16	1621CB03	Chemical & Biochemical Engg.
4.	KHUSHWANT SINGH	PHD JUL 15	1521CH06	Chemistry
5.	MANISH KUMAR	PHD JUL 15	1521CH07	Chemistry
6.	ANOOP KUMAR PANDAY	PHD JUL 15	1521CH08	Chemistry
7.	RAJESH KUMAR GAUTAM	PHD JUL 15	1521CH09	Chemistry
8.	YOGESH JAISWAL	PHD JUL 15	1521CH10	Chemistry
9.	ASIM JANA	PHD JUL 15	1521CH11	Chemistry
10.	JAGANNATH PAL	PHD JAN 16	1621CH01	Chemistry
11.	SONAM KUMARI	PHD JAN 16	1621CH02	Chemistry
12.	AFAQ AHMAD KHAN	PHD JAN 16	1621CH03	Chemistry
13.	ANIRBAN CHAKRABORTY	PHD JUL 15	1521CE01	Civil & Environmental Engg
14.	SRI SUBHAJIT DEY	PHD JUL 15	1521CE02	Civil & Environmental Engg
15.	ANGSHUMAN DAS	PHD JUL 15	1521CE03	Civil & Environmental Engg
16.	DILEEP KUMAR KOSHLEY	PHD JUL 15	1521CS05	Computer Science & Engg.
17.	BHANU PRATAP SINGH	PHD JUL 15	1521CS06	Computer Science & Engg.
18.	VIKASH KUMAR RAI	PHD JUL 15	1521CS07	Computer Science & Engg.
19.	SUKANTA SEN	PHD JUL 15	1521CS08	Computer Science & Engg.
20.	SAYANTAN MITRA	PHD JUL 15	1521CS09	Computer Science & Engg.
21.	SURYAKANTA PANDA	PHD JUL 15	1521CS10	Computer Science & Engg.
22.	NIRAJ KUMAR	PHD JUL 15	1521CS11	Computer Science & Engg.
23.	MD IMRAN ALAM	PHD JAN 16	1621CS01	Computer Science & Engg.
24.	SRIKANTA PRADHAN	PHD JAN 16	1621CS02	Computer Science & Engg.

Sl. No.	Name of Research Scholar	Batch	Roll No.	Department
25.	RAKESH KUMAR SANODIYA	PHD JAN 16	1621CS04	Computer Science & Engg.
26.	SABYSACHI KAMILA	PHD JAN 16	1621CS10	Computer Science & Engg.
27.	ABHAKUMARI	PHD JAN 16	1621CS11	Computer Science & Engg.
28.	NAVEEN SAINI	PHD JAN 16	1621CS12	Computer Science & Engg.
29.	DEEPAK KUMAR GUPTA	PHD JAN 16	1621CS08	Computer Science & Engg.
30.	RAHUL GUPTA	PHD JUL 15	1521EE14	Electrical Engg.
31.	SUSHANT KUMAR	PHD JUL 15	1521EE15	Electrical Engg.
32.	PREETY	PHD JUL 15	1521EE17	Electrical Engg.
33.	VISHALA	PHD JUL 15	1521EE18	Electrical Engg.
34.	SAILESH SOURABH	PHD JAN 16	1621EE03	Electrical Engg.
35.	SUBHAMOY CHATTERJEE	PHD JAN 16	1621EE04	Electrical Engg.
36.	ARUN KUMAR	PHD JAN 16	1621EE01	Electrical Engg.
37.	SHRIMAN NARAYANA	PHD JAN 16	1621EE06	Electrical Engg.
38.	AIMAN REYAZ	PHD JUL 15	1521HS01	Humanities and Social Sciences
39.	SMITA PARASAR	PHD JUL 15	1521HS02	Humanities and Social Sciences
40.	SRISHTI	PHD JUL 15	1521HS03	Humanities and Social Sciences
41.	THAKUR PREM KUMAR	PHD JUL 15	1521HS04	Humanities and Social Sciences
42.	HASANUZZAMAN BISWAS	PHD JUL 15	1521HS05	Humanities and Social Sciences
43.	SUJOY KUMAR SAHA	PHD JUL 15	1521HS06	Humanities and Social Sciences
44.	MAMTA KUMARI	PHD JAN 16	1621HS01	Humanities and Social Sciences
45.	SANDEEP KUMAR SHARMA	PHD JAN 16	1621HS02	Humanities and Social Sciences
46.	FARHA SULTANA	PHD JUL 15	1521MA03	Mathematics
47.	MAYANK KUMAR JHA	PHD JUL 15	1521MA04	Mathematics
48.	RAJ KAMAL MOURYA	PHD JUL 15	1521MA05	Mathematics
49.	RAVINDRA KUMAR	PHD JUL 15	1521MA06	Mathematics
50.	PALASH SARKAR	PHD JUL 15	1521MA07	Mathematics
51.	SHIBSANKAR DAS	PHD JUL 15	1521MA08	Mathematics
52.	AMULYA KUMAR MAHTO	PHD JUL 15	1521MA09	Mathematics
53.	RAM KRISHNA VERMA	PHD JUL 15	1521MA10	Mathematics
54.	MUKESH KUMAR RAWANI	PHD JAN 16	1621MA01	Mathematics
55.	DEBASMITA BANERJEE	PHD JAN 16	1621MA02	Mathematics
56.	SACHIN PATHAK	PHD JAN 16	1621MA03	Mathematics
57.	KARTIKEYA PARMAR	PHD JUL 15	1521ME04	Mechanical Engg.
58.	AJEET KUMAR	PHD JUL 15	1521ME05	Mechanical Engg.
59.	RINKU KUMAR GOUDA	PHD JUL 15	1521ME07	Mechanical Engg.
60.	MD SHAMIM SHAH	PHD JUL 15	1521ME08	Mechanical Engg.
61.	BATHINA CHAITANYA	PHD JUL 15	1521ME09	Mechanical Engg.
62.	KALI KANCHAN	PHD JUL 15	1521ME10	Mechanical Engg.
63.	DURGA PRASAD GHOSH	PHD JUL 15	1521ME11	Mechanical Engg.
64.	SURAJ KUMAR	PHD JUL 15	1521ME12	Mechanical Engg.
65.	ASHWANI PRATAP	PHD JUL 15	1521ME13	Mechanical Engg.
66.	RAM BHUSHAN SINGH	PHD JUL 15	1521ME14	Mechanical Engg.
67.	ALOK KUMAR	PHD JUL 15	1521ME15	Mechanical Engg.

Sl. No.	Name of Research Scholar	Batch	Roll No.	Department
68.	ASHU GARG	PHD JAN 16	1621ME01	Mechanical Engg.
69.	ATUL RANJAN	PHD JAN 16	1621ME02	Mechanical Engg.
70.	MADHU RANJAN GUNJAN	PHD JAN 16	1621ME03	Mechanical Engg.
71.	RANAJIT KUMAR CHAKRABARTI	PHD JAN 16	1621ME04	Mechanical Engg.
72.	SREENATH P.R.	PHD JUL 15	1521MS03	Materials Science & Engg.
73.	BISWAJYOTI MUKHERJEE	PHD JUL 15	1521MS04	Materials Science & Engg.
74.	KUNDAN KUMAR	PHD JUL 15	1521MS05	Materials Science & Engg.
75.	ASIQ RAHMAN O.S.	PHD JUL 15	1521MS06	Materials Science & Engg.
76.	GOUR MOHAN DAS	PHD JUL 15	1521PH02	Physics
77.	LAGEN KUMAR PRADHAN	PHD JUL 15	1521PH03	Physics
78.	BARUN HALDER	PHD JUL 15	1521PH04	Physics
79.	NILANJAN KUNDU	PHD JUL 15	1521PH05	Physics
80.	MANORANJAN SAHOO	PHD JUL 15	1521PH07	Physics

RESEARCH SCHOLARS ENROLLED IN VISVESVARAYA PhD SCHEME IN THE ACADEMIC YEAR 2015-16

Sl. No.	Name of Research Scholar	Batch	Roll No.	Department
1.	SNEHA KUMARI	PHD JUL 15	1521EE19	Electrical Engg (Visvesvaraya PhD Scheme)
2.	DEBI PADA JANA	PHD JUL 15	1521EE20	Electrical Engg (Visvesvaraya PhD Scheme)
3.	GAURAV SUNDRAM	PHD JUL 15	1521EE21	Electrical Engg (Visvesvaraya PhD Scheme)
4.	MD SHAHBAZ AKHTAR	PHD JAN 16	1621EE05	Electrical Engg (Visvesvaraya PhD Scheme)
5.	INDRA KUMAR GAUTAM	PHD JAN 16	1621EE02	Electrical Engg (Visvesvaraya PhD Scheme)
6.	KM POOJA	PHD JAN 16	1621CS03	Computer Science & Engg. (Visvesvarya PhD Scheme)
7.	PRATIK DUTTA	PHD JAN 16	1621CS05	Computer Science & Engg. (Visvesvarya PhD Scheme)
8.	PRASUN CHANDRA TRIPATHI	PHD JAN 16	1621CS06	Computer Science & Engg. (Visvesvarya PhD Scheme)
9.	TIRTHANKAR GHOSAL	PHD JAN 16	1621CS07	Computer Science & Engg. (Visvesvarya PhD Scheme)
10.	ABHIJIT KUMAR	PHD JAN 16	1621CS09	Computer Science & Engg. (Visvesvarya PhD Scheme)

17. Infrastructure Development at IIT Patna

IIT Patna is fully functional at its newly constructed permanent campus at Bihta after inauguration by Prime Minister of India on 25.07.2015. The newly constructed campus is of 500 Acre and is located at New Patna (Bihta) at 25°32'56.96" N and 84°51'21.64"E on globe and its elevation is 58.965 M above MSL. It is at a distance of 40 Km from Patna Junction and 35 KM from Patna International airport. The nearest railway station, Bihta (on Patna - Delhi main route) is at a distance of 2.7 KM from the campus.

Brief description and status of the campus:

1) The campus is divided in to three zones namely Academic Zone, Hostel Zone and residential zone.
2) The entire campus is surrounded by RCC boundary wall with two numbers separate provision of entry gates for Academic and for residential zone.
3) Academic Zone is separated by internal boundary wall.
4) The following buildings are functional:

Block-4 (Physics, Chemistry and Mathematics): It is a four storied building with built up area of 6668 SQM. There is provision of labs, faculty rooms, HOD rooms / office, departmental library, conference/ meeting rooms, server room, store, ups room etc on different floors of the buildings.

Block-6 (Dept. of Civil & Environment engineering, Materials Science & Engineering, Chemical and Bio Chemical, HSS): It is a six storied building with built up area of 9886 SQM. There is provision of labs, faculty rooms, HOD rooms / office, departmental library, conference/meeting rooms, server room, store, ups room etc on different floors of the buildings.

Block-3 (Dept. of Mechanical, Electrical and Computer Science): It is a six storied building with built up area of 9886 SQM. There is provision of labs, faculty rooms, HOD rooms / office, departmental library, conference/meeting rooms, server room, store, ups room etc on different floors of the buildings.

Block-9 (Tutorial Block): It is a six storied building with Built up area of 11319 SQM. There is provision of class room on First, 3rd and fourth floors. Ground floor is having common 1st year lab. Second floor is having Basic Electronics lab and computer science lab and Computer Center. The 5th floor rooms are for Training and Placement cell.

Block-12 (Administrative Block): It is a four storied building with Built up area of 10655 SQM. Ground Floor is having Senate hall, Meeting room, Library and Incubation Center. Offices of Dean and Accounts section are on the First Floor. Board room, Directors office and Registrar office are on the second floor. Computer section, Examination centre, Academic section, Construction office, security office are on the third floor.

Workshop A (Civil Engineering): It is a single storied building with Built up area of 1017 SQM. There is pre-coated metal roof sheeting over steel structure.

Workshop B (Mechanical Engineering): It is a single storied building with built up area of 826 SQM. There is pre-coated metal roof sheeting over steel structure.

Workshop C (Electrical Engineering): It is a single storied building with built up area of 634 SQM. There is pre-coated metal roof sheeting over steel structure.

5) In the hostel zone, presently a eight storied **boys' hostel** of four wings having built up areas of 28849 Sq.m has been constructed. There are 912 single bed rooms with carpet area of 10.35 Sq.m with hall. Each contains two sets of dinning and Kitchen at Ground floor. There is warden office/room, library, Magazine, Guest room, sick room, laundry, security room at Ground floor and TV room, Music room, Common room is located on First Floor. Floor Pantry and electrical room are on each floor. There is provision of three of lifts in hostel Block.
6) Presently following buildings are functional in **Residential zones** as per the Master Plan:

B Type Quarters: There are four blocks of nine storied buildings having total built up area of 23076 sq.m. There are 144 units of 3 BHK flats. One of the Blocks of 36 units is being utilized as temporary Girls' Hostel and Guest House.

D Type Quarters: There are four blocks of four storied buildings having total built up area of 4608 sq.m. There are 64 units of 2 BHK flats. Each floor contains four flats and each flat is having one attached toilet and one common toilet.

Director's Bungalow: It is a two storied building having built up area of 625 sq.m.

Hospital: It is a two storied building having total built up are of 2459 Sqm. Presently central part of 1612 Sqm is functional.

Other Civil Structures: Main receiving substation-1 No, Substation-3 Nos, WTP- 3 nos, STP- 3 Nos.

7) A dedicated 33000 V HT electric line has been connected from power station to Main receiving Substation through underground cable.

Balance part of Primary School and Shops are under construction. Work of Half part of Boys' Hostel, Half part of Girls' Hostel, Gymkhana, Two Blocks of C type Quarters has been taken up and its design Engineering is in progress.

8) Underground 2x400 sq mm Almunium armoured cabling work for 33 KV line from 132/33 kV SBPDCL Grid located at Patsa village to 33 KV MRSS at IIT Patna, Bihta Campus has been successfully completed and charged.

9) Construction of market complex (electrical part) completed to the tune of 80% till now.

Accounts

INDIAN INSTITUTE OF TECHNOLOGY PATNA

FINANCIAL INFORMATION : FY 2015 -16

RECEIPTS AND PAYMENTS A/C FOR THE YEAR ENDED 31ST MARCH 2016

Amount in Rs

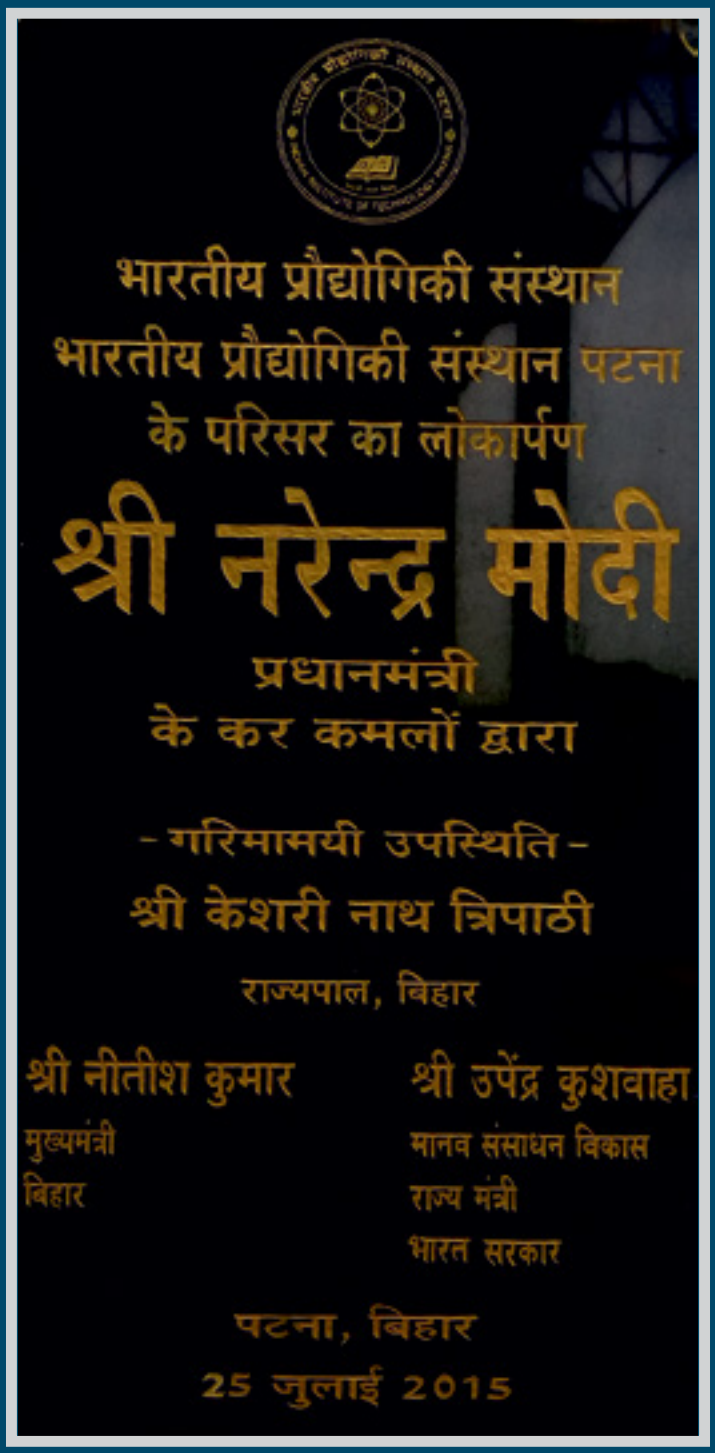
Sl. No.	RECEIPTS	Current Year (2015-16)	Sl. No.	PAYMENTS	Current Year (2015-16)
1	Opening Balance (Bank Balances)	97,72,34,759.14	1	Establishment Expenditure	17,56,67,349
2	Grants received from Govt. of India (Plan Grant)	1,00,31,48,000	2	Administrative Expenditute	10,69,39,971.00
3	Academic Receipts (including Mess Fee)	6,85,46,943	3	Expenditure on Fixed Assets	1,18,87,62,664
4	Other Income	97,15,156	4	Fellowships/ Scholarships	7,36,55,200
5	Deposits & Advances	25,28,95,406	5	Deposits & Advances	11,85,33,818
6	Interest Received	5,47,77,271.43		Other Payment (Including Statutory Payments)	5,14,47,186
7	Misc. receipts (Including Statutory Receipt)	-	6	Closing Bank Balance (including current liabilities)	65,13,11,347.85
	TOTAL	2,36,63,17,535.48		TOTAL	2,36,63,17,535.48

	Rs. in Lakh
Grants-in-aid under Plan from MHRD	10031.48
Internal Income	1,040.63
Expenditure	12,929.61

AO

AR(F&A)

Registrar



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