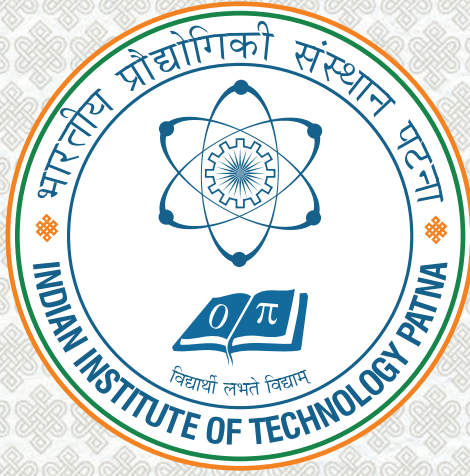


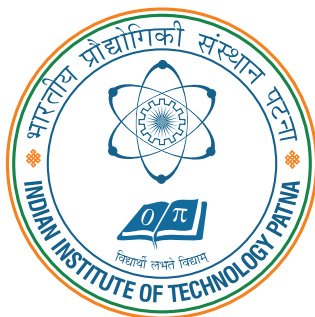


# द्वितीय दीक्षान्त समारोह Second Convocation

26<sup>TH</sup> OCTOBER 2013

भारतीय प्रौद्योगिकी संस्थान पटना  
INDIAN INSTITUTE OF TECHNOLOGY PATNA





# INDIAN INSTITUTE OF TECHNOLOGY PATNA

**2<sup>nd</sup> Convocation**  
**October 26, 2013**

***Chief Guest***  
**Shri Pranab Mukherjee**  
**Honorable President of India**

**Padma Bhushan Shri Ajai Chowdhry**  
**Chairman, Board of Governors**

**Prof. Anil K. Bhowmick**  
**Director**

## 2<sup>nd</sup> CONVOCATION

### PROGRAM

OCTOBER 26, 2013

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- ❖ Chief Guest, Governor, Chief Minister, Chairman, Director, Members of BoG & Senate assemble for wearing convocation attire.
- ❖ Academic procession proceeds to the Convocation Hall.
- ❖ Invocation with the National Anthem.
- ❖ Chairman, Board of Governors declares the 2nd Convocation open.
- ❖ Director presents his report.
- ❖ Chairman, Board of Governors presents Memento to the Chief Guest & Guests of Honor & Director presents Memento to the Chairman, BoG.
- ❖ Director awards Degree to the students.
- ❖ Registrar announces the name of the Institute Medal Winners. The Chief Guest presents the President of India Gold Medal, Director's Gold Medal and Silver Medals.
- ❖ Pledge by the Degree Recipients.
- ❖ Address by the Chairman, Board of Governors.
- ❖ Chairman, Board of Governors requests the Chief Minister of Bihar to deliver his address.
- ❖ Chairman, Board of Governors requests the Governor of Bihar to deliver his address.
- ❖ Chairman, Board of Governors requests the Chief Guest to deliver his address.
- ❖ Announcement of the names of Distinguished Academician Award & presentation of the awards by the Chief Guest.
- ❖ Director proposes a vote of thanks.
- ❖ Chairman, BoG declares the 2nd Convocation closed.
- ❖ National Anthem.
- ❖ Academic procession returns.



## **Shri Pranab Mukherjee**

Honorable President of India  
and Visitor, IIT Patna



**Dr. M. M. Pallam Raju**  
Honorable Minister  
Human Resource Development  
Government of India  
and  
Chairman, IIT Council



**Shri Jitin Prasada**  
Honorable Minister of State  
Human Resource Development  
Government of India



**Dr. Shashi Tharoor**  
Honorable Minister of State  
Human Resource Development  
Government of India



**Shri Ajai Chowdhry**  
Chairman, Board of Governors  
IIT Patna



**Prof. Anil K. Bhowmick**  
Director, IIT Patna

## WELCOME ADDRESS

### PADMA BHUSHAN SHRI AJAI CHOWDHRY

Founder - HCL

Chairman Board of Governors, IIT Patna



Honourable President, Shri Pranab Mukherjee, Esteemed Governor of Bihar, Dr. D. Y. Patil, Respected Chief Minister of Bihar, Shri Nitish Kumar, Distinguished Members of the Board of Governors of IIT Patna, Members of the Academic Senate of IIT Patna, Members of the Faculty and Staff of IIT Patna, Parents, our beloved Students, Ladies and Gentlemen!

Warm greetings to all of you!

We are here to observe a significant moment in the journey of IIT Patna and a turning point in the life of the bright youngsters. The second batch of the students of IIT Patna is graduating from its temporary campus. I am extremely happy that the Honourable President, Shri Pranab Mukherjee is here with us. He is a renowned administrator, diplomat, political guide, and economist. Shri Mukherjee comes from a humble origin and believes in hard work. He has proved this through his persistent commitment and sincerity. You will all find a role model for yourself in Shri Mukherjee. I have great pleasure in welcoming you, Sir, for the second convocation of IIT Patna.

We are privileged to have honourable Governor of Bihar, Dr. D.Y. Patil amidst us. Thank you for your presence and support. The Chief Minister, Sri Nitish Kumar is also with us today. His dynamic leadership is taking the state of Bihar on the path of development. I extend a warm welcome to you, Sir. I also extend a warm welcome to all those who have accepted our invitation and especially to the parents and the young students graduating today. Let me take this opportunity to extend my heartiest congratulations to the graduates of the second batch of IITians from Patna in 2013. We are also grateful to Professor C. N. R. Rao, Dr. Krishnaswamy Kasturirangan, and Dr. R. K. Sinha for accepting the Distinguished Academician award.

IIT Patna began its journey on the 6<sup>th</sup> day of August 2008. The first few years have been challenging for us and now we are delighted to find the fruits of our hard work. The very first batch graduated last year and this year we have our second successful batch of promising students. We are really proud of them. I would like to thank today all those whose efforts have stood by us and who have helped us to make the difference. Director Professor Anil K. Bhowmick has been at the helm since 2009. His efforts are enormous. Professor Bhowmick has been running the Institute with laudable success from the temporary campus at Patliputra Colony while at the same time overseeing that the new campus at Bihta comes up soon.

It is to be remembered that we are in the land of Mahavir and Gautam Buddha; it is the land of a great teacher of all times – Chanakya; it is the land of great emperor Ashoka; this land has housed Nalanda *Vidhyapith*. With the heritage of all the above, in all honesty, I can assure you that this institute will reach

much greater heights in the days to come. IITs have their own tradition of innovation and excellence in teaching and research. I am confident that IIT Patna will bring the land of Bihar on the list of pioneering centres of engineering and technology.

Convocation or *Diikshaant Samaroh* marks the culmination of an academic program. However, this brings new challenges and responsibilities. Attending college allows a student to develop independent thinking. While enrolled in college, students are given the opportunity to think on their own and develop their personalities and innovate.

Innovation is deeply involved with entrepreneurship. And I do believe that IIT Patna should encourage both. To encourage this, there is a plan in IIT-P to start an incubation centre and also we have started a course in entrepreneurship. I do strongly believe that entrepreneurs are not just born as entrepreneurs, entrepreneurship can be taught. And I strongly believe that IITians should also look at creating businesses that then create jobs rather than looking at getting jobs.

So, you should step out into this new world of opportunities, be creative and never forget the society that helped you get this fantastic education.

Congratulations once again to all the graduates of the second convocation of IIT Patna. I wish you all a very bright future ahead!

## **DIRECTOR'S REPORT**

Honorable President of India, Shri Pranab Mukherjee, Honorable Governor of Bihar, Padma Shri Dr. D. Y. Patil, Honorable Chief Minister of Bihar, Shri Nitish Kumar, Chairman, Board of Governors (BoGs), IIT Patna, Padma Bhushan Shri Ajai Chowdhry, Distinguished Members of the BoGs, IIT Patna, Distinguished Academician Awardees, Members of the Academic Senate, Faculty members and Staff of IIT Patna, our beloved students, media persons, ladies and gentlemen!

At the outset, I would like to extend a hearty and warm welcome to all of you for attending the second convocation of Indian Institute of Technology Patna. We are going to march a step ahead, as the second batch of our B. Tech. students are awarded degrees in this convocation. This is also a historical moment for IIT Patna as the first batch of Ph. D. students will get degree today. You are very privileged in this country to receive higher education at this Institute of National Importance.

IIT Patna has become operational since August 6, 2008. Before I highlight activities of this Institute, it is my proud privilege and honor to welcome our Chief Guest, Honorable President of India, Shri Pranab Mukherjee, a man of vast experience in governance with the rare distinction of having served at different times as Foreign, Defence, Commerce and Finance Minister. He was elected to the Rajya Sabha five times from 1969 and twice to the Lok Sabha since 2004. Shri Mukherjee assumed office as the 13<sup>th</sup> President of India on July 25, 2012, crowning a political career of over five decades of exemplary service to the Nation in Government as well as in the Parliament. I would also like to welcome the Governor of Bihar, Padma Shri Dr. D. Y. Patil and Honorable Chief Minister of Bihar, Shri Nitish Kumar.

### **ACADEMICS**

#### ***Academic Schools***

Presently, IIT Patna is offering B. Tech., M. Tech., and Ph. D. programmes. Since inception, IIT Patna has grown up significantly both in terms of academics and infrastructural facilities and the Institute is at par with established IITs.

With a vision to foster an interdisciplinary academic environment, the Institute has created three schools, namely,

- The School of Engineering and Technology (Chemical and Biochemical Engineering, Civil and Environmental Engineering, Computer Science and Engineering, Electrical Engineering, Materials Science and Engineering, and Mechanical Engineering),
- The School of Basic Sciences (Chemistry, Mathematics, and Physics), and
- The School of Humanities and Social Sciences.

Presently, 534 B. Tech. students, 88 M. Tech. students and 125 Ph. D. students are enrolled in this Institute. The Institute is proud to have more than 78 extremely talented and qualified faculty members trained from the best national and international universities of repute. To cater to the needs of growing student population and to achieve optimum student-to-faculty ratio, IIT Patna is continuing its effort to attract the best in the lot to join IIT Patna as a faculty member.

### ***Academic Programs***

The Institute offers four year B. Tech. programs in five specializations, namely,

- Chemical Science and Technology,
- Civil and Infrastructure Engineering,
- Computer Science and Engineering,
- Electrical Engineering, and
- Mechanical Engineering

We have started the first two programmes from this year.

Keeping in mind, the research manpower needs as well as latest industry trends, IIT Patna has recently started five academic programs that award M. Tech. degrees to graduating students, namely,

- Communication Systems Engineering,
- Computer Science and Engineering
- Mathematics and Computing,
- Mechatronics, and
- Nanoscience and Technology.

The first two programmes have been initiated this year.

The Institute runs Ph. D. programs in all the departments.

The Institute has begun innovative courses on Infotainment and Entrepreneurship to enable budding technologists to apply their engineering skills in wealth generation.

## **RESEARCH AND DEVELOPMENT ACTIVITIES**

### ***Sponsored Projects***

The faculty members and students at IIT Patna have been engaged actively in research activities since its inception. This has resulted in major advancement in research output of this new IIT and our research achievements have been praised by experts in industry and academia. Till date, IIT Patna has over 45 cutting edge research projects worth more than ₹ 25 crores sponsored by organizations like DIT, DST, NIC, DRDO, CSIR, DAE, NBHM, NPCIL, SERB, etc. During the current financial year 2013-14, the Institute has received external funding for R&D projects worth ₹ 17 crores. IIT Patna encourages the need to facilitate R&D activities systematically to lay a strong foundation and register growth in research by generation of resources, research collaborations and establishing links with the industry. Recently a few companies including a foreign company (Bridgestone Corporation Ltd., Japan) have sponsored project at IIT Patna. Sponsored Research and Industrial Relations Unit (SRIRU), is a special unit set up to act as an interface between funding agencies and the Institute to handle sponsored research projects and industrial activities.

***Publications***

Generation of knowledge and its dissemination through publications in reputed national and international journals and books is an important parameter to gauge the output of high quality research. A strong focus on research in addition to academic programs is hallmark of a healthy and prospering academic institution. During last one year, our faculty members have published over 125 research articles in reputed journals of high impact factors (even up to 24). In addition, faculty members have contributed chapters to books and also presented their research in more than 40 national and international conferences and workshops. Our faculty members also serve on the Editorial Boards of a number of reputed journals in Science and Technology and have delivered a number of invited lectures around the globe.

***Outreach***

In order to appreciate research efforts of our Ph. D. scholars, IIT Patna organizes “Research Scholars’ Day”, where our Ph. D. students get an opportunity to showcase their research activities to contemporary researchers. The posters presented by scholars are judged by leading experts in their respective fields. IIT Patna has celebrated its 3<sup>rd</sup> “Research Scholars’ Day” on March, 2<sup>nd</sup> 2013. Our faculty members have also delivered seminars in various forums and have undertaken projects to reach out to respective community.

***Centers***

Recently, the Institute has established three centers of excellence namely, Center for Energy and Environment, Center for Strategic Materials, and Center for Advanced System Engineering to address problems in frontier areas of research.

The Department of Science and Technology, Government of India has considered IIT Patna’s proposal to establish a Sophisticated Analytical Instrumentation Facility (SAIF) within its campus. Setting up such a facility in this region (Bihar-Jharkhand) will benefit research community of IIT Patna as well as several other institutes of National Importance, including but not limited to ISM Dhanbad, NIT Patna, NIT Jamshedpur, IGIMS, RMRIMS Patna, NIPER Hajipur, Patna University, BIT Mesra, NML Jamshedpur and newly conceptualized Central Universities in Bihar and Jharkhand. In addition, the facilities of the SAIF can be used by industries and other organizations to carry out analysis of samples. The creation of a SAIF in IIT Patna for this region will definitely promote growth of research activities in Bihar, Jharkhand and adjoining states. We have also established an Indo-US Virtual Joint Center to work on fundamentals and applications of nanoparticle assemblies.

***Collaboration with International Universities and Industry***

IIT Patna is carving its niche in the world of educational excellence. Many international institutes have shown their interest in collaborating with IIT Patna in various areas of research and teaching. The Institute has MoUs with the University of Houston, University of North Texas and Louisiana State University of USA, University of Saskatchewan in Canada, University of New South Wales in Australia and National University of Singapore. Students regularly visit these Universities for summer internships.

Apart from these Universities, students of IIT Patna have been offered internships in University of Southern California, Georgia State University, Washington State University and Texas A&M University of USA, University of Auckland in New Zealand and University of South Australia.

Recently, IIT Patna has become a member of the Indo-Canadian Shastri Institute with an aim to strengthen collaborative research programs with Canadian Universities. The Institute is also collaborating with Columbia University, National Chemical Laboratory, Pune, IIT Bombay, and University of Houston under the aegis of Indo-US Joint Center on Fundamentals to Applications of Nanoparticle Assemblies. We have also started joint Ph. D. programme with the University of Houston. Mr. Titash Mondal from the Department of Chemistry is currently at the University of Houston, Department of Chemical and Biochemical Engineering to do part of his Ph. D. work. IIT Patna is also participating in a prestigious EU program.

This year three of our Ph. D. scholars visited prominent Universities in Europe, Canada and United States to work on a part of their doctoral dissertation: Mr. B. B. Bhowmick spent nine months at Scuola Superiore Sant'Anna, Pisa, Italy; Mr. T. Mondal is visiting the University of Houston, USA for a year; Mr R. K. Sahu visited University of Saskatchewan, Canada for six months. Several undergraduate students participated in international conferences in US and Europe as well.

The Institute shares symbiotic relationship with several leading companies in India and abroad by having funded research programs and collaborations. Companies like Tata Consultancy Services, NetApp and Bridgestone Corporation, Japan are worth mentioning in this connection. Many others are engaged in consultation with us for potential modes and areas of collaboration.

### **CONFERENCES AND WORKSHOPS AT IIT PATNA**

The Institute has organized several conferences and workshops in order to increase its visibility as well as to connect with national and international universities and researchers.

- Sponsored Research and Industrial Relations Unit conducted workshops on “Patent & IPR” and “HPC & Smart Building”.
- Department of Mathematics organized “Advanced Workshop on Mathematical Epidemiology & Differential Equations (AWMEDE - 2013)”.
- Department of Computer Science and Engineering conducted Indo-Australia Workshop on “Optimization Techniques for Human Language Technology”.
- Department of Computer Science and Engineering conducted a Workshop on “Cryptography”.
- Society of Automotive Engineers (SAE) organized Inter-College Auto Quiz competition.
- Department of Physics conducted a one week “Orientation Course for Physics Teachers” for college teachers.

### **CONTRIBUTION TO THE LOCAL COMMUNITY**

Recently, IIT Patna conducted a 14-day short term training program for the engineers of Building Construction Department, Govt. of Bihar. This marks a new beginning in its relation with the State government. The Department of Physics, IIT Patna conducted an orientation course for college teachers from Universities of Bihar.

## **LIBRARY**

In terms of its collection and services, the Central Library of IIT Patna is one of the advanced libraries in the Nation with an annual expenditure of approximately ₹ 4 crores. With about 1000 books and one online resource, the Central Library of IIT Patna became operational since 2008. Currently, the total collection of books is about 9300, which includes large numbers of textbooks as well as reference books. Presently, the Central Library has subscription to more than 30 different e-resources of different renowned publishers. This includes more than 4200 full text e-journals, 3 online bibliographic databases, and also 07 full text e-book packages of different publishers namely Springer, CRC, World Scientific, Ebrary, LNCS, CUP, McGraw-Hill, and others. There are more than 50,000 full text e-books accessible from these online e-books packages.

## **INFRASTRUCTURE DEVELOPMENT**

### ***New Campus Information***

The construction work of Bihta campus of IIT Patna is in full swing. Having the boundary wall constructed in 2012, foundation work of several buildings in the academic zone is also over. Three workshop buildings have already come up and roof work is under progress. The construction work for faculty residences has already begun. With this pace of construction activities, IIT Patna hopes to move to new campus in Bihta by June 2014.

### ***Laboratory Development***

The creation of a congenial research ambience goes a long way in attracting outstanding and talented faculty as well as a pool of bright students. We have invested a lot of time, effort and money in setting up state-of-the-art infrastructural facilities at our Institute including X-ray diffraction machine, Field Emission Scanning Electron Microscope, Atomic Force Microscope, Raman Spectrometer, computer integrated manufacturing machine, to name a few equipment. These cutting edge research facilities equip IIT Patna well enough to compete with any other national as well as global universities.

## **STUDENT ACTIVITIES**

The Student Gymkhana is the students' governing council at IIT Patna that works for the overall well being and holistic development of the students in the Institute. It is constituted by the elected student representatives who strive to foster growth and leadership among the student community by organizing various events that help each student realize his/her true potential. 'Anweshha', IIT Patna's annual techno-cultural fest, is the flagship event of the Student Gymkhana and is one of the biggest fests of its kind in the region today. Anweshha '13, organized solely by the students and financed through sponsorships from leading private and public sector organizations, was a three-day extravaganza that witnessed pro-active participation from various colleges of the nation and experienced an unprecedented footfall on all the three days.

The students organized 'Celesta', an intra-college technical fest, which included seminars, competitions and workshops spanning across academic departments. The students also organized 'Science Expo', a competition that gave school students an opportunity to showcase their technology projects.

IIT Patna has clubs that actively organize social, cultural and recreational activities for the student

community. The ‘House of Socio Cultural Affairs (HoSCA)’ and ‘House of Literature and Fine Arts (HoLFA)’ organize events round the year to hone the soft skills of the students.

Some of the major events organized by these clubs include: Reverberance, the Diwali fest; Nebula, the freshers’ welcome event; Verve, the fashion show; Syngphony, the singing competition; and Heavy Pen, the essay writing competition. The students also organize cultural events in collaboration with local and foreign artists.

It is said, a healthy mind resides in a healthy body. IIT Patna has always encouraged its students to actively participate in sports. The students participate in inter-hall badminton, basketball, cricket, table tennis, football and volleyball leagues that are held on campus every year.

IIT Patna students also participated in the 48<sup>th</sup> Inter IIT Sports Meet-2012 held at IIT Roorkee. The students did not fail to impress their counterparts and made a mark in every game that they played. Not far behind were IIT Patna’s staff members who participated for the second time in the 20<sup>th</sup> Inter IIT Staff Sports Meet-2013 held at IIT Roorkee.

IIT Patna’s Basketball team won the Gold Medal at Jeevatva Sports Fest 2013 held at CNLU Patna.

## **TRAINING AND PLACEMENT**

Training and Placement Cell (TPC) of IIT Patna is actively engaged in developing relationships between various industrial organizations and the Institute. TPC has been assisting B. Tech. students with summer internships in their pre-final year. Additionally, placement activities of the graduating B. Tech. students are monitored by TPC. The TPC office is well equipped to smoothly handle and support the training and placement activities.

The Institute strives to achieve cent-percent placement for its graduating students. TPC equally emphasizes on the development of soft skills as a complement to technical skills of students for better performance in the campus placements. The TPC has organized several lectures, workshop on pre-placement training, and demonstrations by the experts. A Training and Placement Brochure is published annually by the TPC for circulation to the prospective employers including several private companies, public sector undertakings and government agencies.

As a part of B. Tech. curriculum, a summer internship for a period of 8 weeks is compulsory for pre-final year students of all the branches. This year, the cell has arranged summer training/internship for all 114 pre-final year students in more than 50 organizations including private companies, public sector undertakings and R&D centers. Notable organizations include Microsoft-IDC, CISCO Systems, Amazon, IBM, TIFR, Belzabar Software, Tata Motors, Tata Hitachi, Mahindra & Mahindra, Rockwell Collins, Hero Motocorp, Techtronics, Megatherm, CMERI, DRDO, IOCL, ONGC, BHEL, HAL, BPCL, Power Grid Corporation of India, DRDL Mecon Ranchi, Atomic Energy Regulatory Board, etc. Sixteen pre-final year students were offered paid summer research internship from Universities in Australia, USA, Canada, Germany, and New Zealand.

The cell was actively involved in the placement of 87 B.Tech students of second batch who graduated in May 2013. A total of 26 companies visited the campus and made 83 offers. The highest package was offered by Microsoft IDC of ₹ 16.33 lakhs per annum.

Our Ph. D. students are getting faculty position offers from reputed national institutes like NITs, ISM Dhanbad and other state/central universities.

## **ENTREPRENEURSHIP AND INNOVATION**

IIT Patna established an Entrepreneurship Club last year with the vision of creating a melting pot of creative ideas generated by aspiring entrepreneurs at the Institute. To further nurture the blooming entrepreneurial spirit amongst young students, this year IIT Patna introduced an elective course titled 'Entrepreneurship' that third year students may opt for in their fifth semester. The course is designed to acquaint the students with the foundations of business, sales, marketing, finance and accounting and is being taught by Shri Ajai Chowdhry, Chairman, BoG, IIT Patna and eminent visiting faculty members from the School of Business, Kansas University (Prof. S. Mishra), Vinod Gupta School of Management - IIT Kharagpur (Prof. P. Rajib) and IIM Calcutta (Prof. A. Raichaudhuri). With this step, IIT Patna has become one of the few engineering institutes in the country to offer entrepreneurship education to its students.

An Innovation Center has also been set up at the Institute to promote and incubate the creative ideas of the students.

IIT Patna celebrated its Foundation Day on August 6<sup>th</sup>, 2013. The topic for this year's Foundation Day Debate, an annual event at IIT Patna, was chosen to be 'Entrepreneurship & Innovation: Should We Start from the First Year?'. The objective was to initiate the dialogue for a more comprehensive entrepreneurship program at the Institute.

## **LECTURES BY PROMINENT RESEARCHERS AND ACADEMICIANS**

In this calendar year, IIT Patna welcomed many researchers from all over the world including United States, Australia, Japan, Europe, and Singapore to deliver Institute lectures. IIT Patna has taken steps to invite Nobel laureates for delivering lectures as well. Institute lectures are open to all academicians/researchers from other institutions in the city not only to attend but also to interact with the speaker.

## **OTHER ACTIVITIES**

IIT Patna has taken an innovative initiative to establish a Self Development and Wellness Center in order to take care of well rounded development of students.

## **LAURELS AND DISTINCTIONS OF IIT PATNA FACULTY MEMBERS AND STUDENTS**

- Dr. Ranjan Kumar Behera, Assistant Professor in Electrical Engineering Department received 'Young Scientists award in engineering sciences' from Department of Science & Technology (DST), Govt. of India.
- Dr. Atul Thakur, Assistant Professor in Mechanical Engineering Department received '2013 ASME Computers in Engineering Best Dissertation' award during Design Engineering Technical Conference held at Portland, Oregon in August 2013.
- Ms. Priyanka Kumar, Ph. D. student in Computer Science and Engineering Department received the 'Most Promising Researcher' award at ICDCN 2013 Ph. D. forum; she was also awarded TCS research fellowship in 2013.
- Mr. Govind Dochhak, second year M. Tech. (Maths and Computing) student was selected in 'IIT DAAD Masters sandwich' program.

- Mr. Dhruv Gupta, second year M. Tech. (Maths and Computing) student received ‘Max Planck fellowship’.
- Mr. Piyush Sharma, fourth year B. Tech. (Electrical Engineering) was selected as DAAD Young Ambassador for the year 2013. He also received a DAAD fellowship.
- Ms. T. Yamini, fourth year B. Tech., (Computer Science and Engineering), Mr. Sujoy Saha, fourth year B. Tech. (Electrical Engineering), and Mr. Hasan Dad Ansari, fourth year B. Tech. (Mechanical Engineering) received fellowship from S. N. Bose Scholars Program.
- Mr. Sachin Basil John and Mr. A. Siddharth, fourth year B. Tech. (Computer Science and Engineering) received a DAAD fellowship.

## ENDOWMENT

Shri Chanchal Kumar (IAS), Secretary, Government of Bihar has created an endowment: “Late Kedarnath Das Memorial Award” for the Best All Round Performing Student from Computer Science and Engineering Branch.

## SUMMARY

The challenge before IIT Patna is to establish itself in the league of reputed IITs and to excel in its education and research programmes. We are indeed proud that based on the dedicated efforts of the faculty, staff, and students, IIT Patna is steadily marching towards making its mark nationally as well as internationally. IIT Patna’s outstanding faculty and enthusiastic students constitute the right DNA for making of a mighty IIT in the imminent future.

I take this opportunity to thank the Ministry of Human Resources Development, Government of India for their continued support and faith in us. I would like to thank Shri Ajai Chowdhry and the Board of Governors, who have provided us encouragement and strength to take up new initiatives. In particular the vision, wisdom and commitment to excellence of Shri Chowdhry have helped the Institute gain in confidence and stature.

Convocation is the culmination point of the academic achievements and fervent efforts of students to achieve excellence. The degree that you will receive will open a plethora of opportunities enabling you to explore expanses of exciting possibilities. Inspiration and hard work are important for your success. You must remember that you the IIT graduates are among the brightest minds in the country and you have been privileged to get your education at one of the finest engineering schools. We count on you as leaders and managers of new ideas and innovations, which will make a difference in the life of millions around you. Always uphold the human values of honesty, integrity, truthfulness and professional ethics. As they say, learning is a life-long process and you must continue to hone your skills during your professional career. We want you to keep excelling and stand to be the best in your peer groups and thereby make your Alma Mater proud of you. We would like to follow your progress in your life and request you to remain in touch with us. You will always be an important stake-holder in the growth of IIT Patna as an alumnus. Your IIT Patna email address is perpetual to enable a lifelong connection with the Institute.

On behalf of the Institute, I extend my heartiest congratulations to the class of 2013: You’ve been bestowed with blessings and good wishes. Realize your dreams. Share them with others. Have confidence in your

skills. With optimism, progressiveness, and empathy, you can create a better world – and a prosperous future. Our heartiest congratulations also to your family, specially your parents, for providing you encouragement and support throughout your stay in IIT.

On behalf of the Institute, I wish you every success in your future endeavours.

May the motto of IIT Patna “Vidyarthi Labhate Vidyam” be your guiding torch. Knowledge is attained by the one who aspires for it. We are all seekers of knowledge, and only the one who seeks can find it!

*JAI HIND*

**DISTINGUISHED ACADEMICIAN AWARD****PADMA VIBHUSHAN PROF. C. N. R. RAO**

**Prof. C. N. R. Rao** (born on 30 June 1934, Bangalore, India) is the National Research Professor as well as Honorary President and Linus Pauling Research Professor at the Jawaharlal Nehru Centre for Advanced Scientific Research. He is also an Honorary Professor at the Indian Institute of Science. His main research interests are in solid state and materials chemistry. He is an author of over 1400 research papers and 45 books. He received the M. Sc. degree from Banaras, Ph. D. from Purdue, D. Sc. from Mysore universities and has received honoris causa doctorate degrees from 60 universities including Purdue, Bordeaux, Banaras, Calcutta, Sri Venkateswara, Delhi, IIT Bombay, IIT Kharagpur, IISERs (Bhopal, Kolkata, Mohali, Pune), Northwestern, Notre Dame, Novosibirsk, Oxford, Stellenbosch, Grenoble, Uppsala, Wales, Wroclaw, Caen, Liverpool, St. Andrews and Desikottama from Visva-Bharati.

Prof. Rao is a member of many of the major science academies in the world including the Royal Society, London, the National Academy of Sciences, U. S. A., the Russian Academy of Sciences, French Academy of Sciences, Japan Academy as well as the American Philosophical Society. He is a Member of the Pontifical Academy of Sciences, Foreign Fellow of Academia Europaea and the Royal Society of Canada. He is on the editorial boards of several leading professional journals and is a distinguished visiting professor of the University of California and Cambridge University.

Among the various medals, Honors and awards received by him, mention may be made of the Marlow Medal of the Faraday Society (1967), Bhatnagar Prize (1968), Padma Shri (1974), Centennial Foreign Fellowship of the American Chemical Society (1976), Royal Society of Chemistry (London) Medal (1981), Padma Vibhushan (1985), Honorary Fellowship of the Royal Society of Chemistry, London (1989), Hevrovsky Gold Medal of the Czechoslovak Academy (1989), Blackett Lectureship of the Royal Society (1991), Einstein Gold Medal of UNESCO (1996), Linnett Professorship of the University of Cambridge (1998), Centenary Medal of the Royal Society of Chemistry, London (2000), the Hughes Medal of the Royal Society, London, for original discovery in physical sciences (2000), Karnataka Ratna (2001) by the Karnataka Government, the Order of Scientific Merit (Grand-Cross) from the President of Brazil (2002), Gauss Professorship of Germany (2003) and the Somiya Award of the International Union of Materials Research (2004). He is the first recipient of the India Science Award by the Government of India and received the Dan David Prize for science in the future dimension for his research in Materials Science in 2005. He was named as Chemical Pioneer by the American Institute of Chemists (2005), Chevalier de la Légion d'Honneur by the President of the French Republic (2005) and received the Honorary Fellowship of the Institute of Physics, London (2006) and St. Catherine's College, Oxford (2007). He received the Nikkei Asia Prize for Science, Technology and Innovation (2008). He was

awarded the Royal Medal by the Royal Society (2009) and the August-Wilhelm-von-Hoffmann Medal for his outstanding contributions to chemistry by the German Chemical Society (2010). He received the Ernesto Illy Trieste Science Prize for materials research in 2011 and was Albert Einstein Professor of the Chinese Academy of Sciences in 2012.

Prof. Rao is Chairman, Scientific Advisory Council to the Prime Minister, immediate past President of The Academy of Sciences for the Developing World (TWAS) and Member of the Atomic Energy Commission of India. He is Founder-President of both the Chemical Research Society of India and of the Materials Research Society of India. Prof. Rao was President of the Indian National Science Academy (1985-86), the Indian Academy of Sciences (1989-91) and the International Union of Pure and Applied Chemistry (1985-97). He was the Director of the Indian Institute of Science (1984-94), Chairman of the Science Advisory Council to Prime Minister Rajiv Gandhi (1985-89) and Chairman, Scientific Advisory Committee to the Union Cabinet (1997-98) and Albert Einstein Research Professor (1995-99).

## **DISTINGUISHED ACADEMICIAN AWARD**

### **PADMA VIBHUSHAN DR. K. KASTURIRANGAN**



**Dr. Krishnaswamy Kasturirangan** obtained his Bachelor of Science with Honors and Master of Science in Physics from Bombay University and received his Doctorate in Experimental High Energy Astronomy in 1971 while working at the Physical Research Laboratory, Ahmedabad. Presently, he is Member (Science) in the Planning Commission, Government of India (since July 2009). He is also the Chancellor of Jawaharlal Nehru University (JNU) (from March, 2012). He continues to be Honorary Professor of Physics at the Physical Research Laboratory, Ahmedabad and also at the Jawaharlal Nehru Centre for Advanced Research, Bangalore and is a Professor Emeritus at National Institute of Advanced Studies, Bangalore. Earlier, he was Director of the National Institute of Advanced Studies (2004-2009) and also a Member of Upper House (Rajya Sabha) of the Indian Parliament (2003-2009). For over

9 years until 2003, Dr. Kasturirangan steered the Indian Space programme as Chairman of the Indian Space Research Organisation. Under his leadership, the programme witnessed several major milestones including the successful launching and operationalisation of the India's prestigious satellite launch vehicles, viz., the Polar Satellite Launch Vehicle and the Geosynchronous Satellite Launch Vehicle; the development and launching of some of the world's best civilian remote sensing satellites, IRS-1C and 1D; new generation INSAT communication satellites and the ocean observation satellites, IRS-P3/P4. He laid the foundation for the ASTROSAT satellite project and conceptualized the moon mission, Chandrayaan-1, steering it to the stage of approval by the Government. As an Astrophysicist, his interests include research in high energy X-ray and gamma ray astronomy as well as optical astronomy. He has made extensive and significant contributions to studies of cosmic X-ray and gamma ray sources and effect of cosmic X-rays in the lower atmosphere.

Dr. Kasturirangan is a Member of the International Academy of Astronautics and served as its Vice President. He is a Member of the International Astronomical Union and a Fellow of Third World Academy of Sciences (TWAS). He is a Fellow of Indian Academy of Sciences and served as its President during 2001-03. He is a Fellow of Indian National Academy of Engineering and was its President during 2005-06. Notably, he was also General President of the Indian Science Congress for the years 2002-2003. Besides, he is 'Honorary Professor for Life' of the University of Delhi, Fellow of the Indian National Science Academy and President of the National Academy of Sciences, India. He is Honorary Fellow of the Cardiff University, UK and Academician of the Pontifical Academy of Sciences, Vatican City.

He has won several awards which include "Brock Medal" of International Society of Photogrammetry and Remote Sensing (2004); "Allan D Emil Memorial Award" of the International Astronautical Federation (2004); "Lifetime Achievement Award" of Asia-Pacific Satellite communications Council, Singapore

(2005); “Theodore Von Karman Award” by International Academy of Astronautics (IAA), France (2007); “Shanti Swarup Bhatnagar Award” in Engineering (1983); “Goyal Award” by Goyal Foundation (1997); Aryabhata Medal by Indian National Science Academy (2000); “GM Modi Award” by GM Modi Science Foundation (2002); “Aryabhata Award” of Astronautical Society of India (2003); “Asutosh Mookerjee Memorial Award” by the Indian Science Congress (2004); Award of “Jewel of Ruia”, Ruia College Alumni Association (2007); “Maharana Udai Singh Award by Maharana of Mewar Charitable Foundation (2008); Rajayogindra Award, Maharaja of Mysore (2008);. “ISRO Life Time Achievement Award” instituted by Indian Space Research Organisation (2008); Vikram Sarabhai Memorial Gold Medal, Indian Science Congress (2009).

He has been conferred the Award of “Officer of the Legion d’honneur” by the President of the French Republic and also honored with the highest Indian civilian awards, viz., “Padma Shri”, “Padma Bhushan” and “Padma Vibhushan” by the President of India.

## DISTINGUISHED ACADEMICIAN AWARD

### DR. RATAN K. SINHA



**Dr. Ratan Kumar Sinha** graduated in Mechanical Engineering from Patna University in 1972, standing first in the University. After completing the one year Course of BARC Training School he joined Reactor Engineering Division of Bhabha Atomic Research Centre (BARC) in the year 1973. After serving in various capacities in BARC, he headed this organisation as Director, during May 2010 to April 2012. Since May 2012, he is serving as Secretary, Department of Atomic Energy and Chairman, Atomic Energy Commission.

Dr. Sinha has been guiding the programmes for new advanced reactors under design and development at BARC to utilise thorium. These include, the Advanced Heavy Water Reactor, which produces most of its power from thorium, and has several innovative passive safety systems. He is also responsible for the design and development of the

Indian High Temperature Reactor intended for hydrogen generation. As a part of the work, he has guided the design of the Compact High Temperature Reactor, which will serve as a technology demonstrator for future larger high temperature reactors.

Dr. Sinha is a nationally and internationally recognised expert in the area of nuclear reactor technology. He has represented India in several important forums of the International Atomic Energy Agency. These include the Steering Committee of the IAEA's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), of which he was chairman for four years.

Dr. Sinha has received several awards and honors. These include the Homi Bhabha Science and Technology Award, VASVIK Award, Indian Nuclear Society Award, DAE Special Contributions Award and Indian National Academy of Engineering Prof. S.N. Mitra Memorial Award.

He was elected a Fellow of the Indian National Academy of Engineering in 1998 and a Fellow of the Maharashtra Academy of Sciences in 2011. He is a Member of the International Nuclear Energy Academy.

## **MEDALS AND PRIZES**

### **PRESIDENT OF INDIA GOLD MEDAL**



**Abhinav, 0901CS01**

Department of Computer Science and Engineering

### **DIRECTOR'S GOLD MEDAL**



**Kshitij, 0901EE15**

Department of Electrical Engineering

## INSTITUTE SILVER MEDAL



**Abhinav, 0901CS01**

Department of Computer Science and Engineering



**Kshitij, 0901EE15**

Department of Electrical Engineering



**Ashutosh Kumar, 0901ME06**

Department of Mechanical Engineering

## INSTITUTE PROFICIENCY PRIZES



**Kshitija Gupta, 0901CS21**

Department of Computer Science and Engineering



**Ishan Patiyat, 0901EE36**

Department of Electrical Engineering



**Anubhav Mathodia, 0901ME05**



**Ashutosh Kumar, 0901ME06**

Department of Mechanical Engineering

## DOCTOR OF PHILOSOPHY DEGREE RECIPIENTS



**Debasis Dangar**

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**Thesis Title:** *On Duality in Nonlinear Optimization Problems Under Crisp and Fuzzy Environment*

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**School of Basic Sciences**

**Lawrence Kumar**

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**Thesis Title:** *Crystal Structure and Magnetic Properties of Substituted Cobalt Ferrites*

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**School of Basic Sciences**



**Nilu**

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**Thesis Title:** *Complex Predicate in Magahi*

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### ACKNOWLEDGMENTS

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**INDIAN INSTITUTE OF TECHNOLOGY PATNA**  
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