

**Convocation Report by**  
**Prof. Shreepad Karmalkar, Director, IIT Bhubaneswar**

Respected Chief Guest, Hon'ble Minister of Education, Govt. of India, Shri Dharmendra Pradhan ji;

Guests of Honour: Prof. Ajay Kumar Sood, Principal Scientific Advisor, Govt. of India; Dr. Ajit Kumar Mohanty, Chairman, Atomic Energy Commission and Secretary, Dept. of Atomic Energy, Govt. of India; and Prof. Abhay Karandikar, Secretary, Dept. of Science & Technology, Govt. of India;

Dr. R. P. Singh, Chairman, Board of Governors; Members of Board of Governors and the Members of the Senate of the Institute;

Distinguished guests, Graduating students and their family members, my dear faculty members and staff colleagues, dear students, parents, media persons, friends;

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I welcome you all to the Twelfth and Thirteenth Combined Convocation of Indian Institute of Technology Bhubaneswar, in its unique campus where knowledge and nature flourish together.

Today, we are extremely fortunate to have amidst us Hon'ble Minister of Education, Govt. of India together with three renowned researchers who are also top S&T policy makers in our country.

The vibrant atmosphere of today's convocation celebrates the success of our 1388 graduands for the academic years 2022-23 and 2023-24, who will receive their degrees. 8% of these are PhD, 19% M.Tech, 14% M.Sc, 14% Dual degree (B.Tech and M.Tech) and 45% B.Tech. It is a proud moment for the graduating students, their parents, the faculty and staff members and the administration of the institute.

Since its foundation in the year 2008, IIT Bhubaneswar has traversed a long way. In recent years, it has aligned itself with the NEP 2020 initiative towards the Viksit Bharat @ 2047 vision. We are working with the motto: *Follow no one, But learn from Everyone, and Acknowledge it too*. Follow no one means Be Original, Learn from Everyone means Be open to feedback and criticism,

and Acknowledge it too – means duly acknowledge others contributions in your achievements. I take this privilege to share with you key milestones of our journey with this motto since the previous convocation in Jan. 2023.

### **Human Resource and Mental Wellness**

We have about 3000 students, of which about 58% are (B.Tech + DD), 22% Masters (M.Tech+ M.Sc), 17% PhD and 3% ITEP. Our growth can be seen from the fact that over the last two years the number of faculty has increased from about 170 to 215, i.e. by 26%, and non-teaching staff from about 90 to 160, i.e. by 38%. A variety of new faculty positions – Visiting, Adjunct, Chair and Professor of Practice – have been created to tap talent for different purposes.

“It is not the gun but the hands behind the gun which win a war. Ney, it is not the hands behind the gun, but the spirit in man which wins a war”. Mental wellness is of paramount importance for good performance. The mental wellness of an individual depends on oneself as well as others. Hence, IIT Bhubaneswar administration considers the wellness of all constituents, namely - students, faculty, non-teaching staff, their families simultaneously. Some of the steps taken by the administration to ensure mental wellness of each of these constituents are as follows.

*Processes:* These are being simplified and made transparent, and all stakeholders are being involved in decision-making.

*Students:* Each teacher is required to identify and help students needing special attention in his/her class, and document these students' names and details of the attention provided in a “Teaching portfolio.” Depending upon the kind of attention required, the teacher may refer such students to their faculty advisors. A group of 20 students is attached to a Faculty - Senior Student Advisors pair, which refers an advisee it cannot handle to the professional Counsellor (Dean) for psychological (academic) problems.

The Career Development Cell plays a pivotal role in guiding students through career planning, one-on-one counselling and imparting lifelong professional skills. In a challenging placement season marked by a global market slowdown, the cell has secured 86% placement for B.Tech with median of 14 LPA and 77% for M.Tech with median of 9 LPA last year.

*Faculty and staff:* All faculty receive guidance on implementing research based teaching and research mentorship practices. Sessions on communication and interpersonal skills are organized for the staff. Assessment criteria for promotion and pay level movement are made transparent. Written feedback is given to those who need to improve.

*Families:* Eight centres / clubs have been started to provide a platform to families to express themselves. These include: Day care centre, Children's activity centre, Ladies club, Senior citizen's club, Health club, Gardening club, Animal-Human peaceful co-existence club, Spiritual and religious society.

## **Campus and Infrastructure**

IIT Bhubaneswar has several unique features:

- 1) Its 936 acres area is the 3rd largest among the 23 IITs.
- 2) Nestled at the base of the historic Barunei hillock, the campus site was the site of the 1817 Paikka Rebellion against British.
- 3) The campus is today home to 50,000 planted deciduous flower and fruit trees that attract migratory and exotic birds.
- 4) Learning Halls: We call our classrooms as Learning Halls rather than Lecture Halls, because research has shown that lecture is not the best method, and in fact interactive, activity and discussion based classes lead to higher learning. Nine of our classrooms with total capacity of over 400 students have round tables each with 3 movable chairs, an arrangement which is amenable for Active Cooperative Learning.
- 5) The dome with mismatched halves atop the administrative building signifies the institute's policy of receptivity to diversity among people and their perceptions.
- 6) The majestic 1500 seater auditorium.
- 7) In next two years, IIT Bhubaneswar will boast of Rs. 130 cr Research and Entrepreneurship Park of 13,500 m<sup>2</sup> area. It will have space for 150 start-ups, recording studio and seminar rooms, two workshops, Library and Yoga/Meditation facilities, and an International Guest House including

Banquet hall and Food court. The Park will expand to 54000 m<sup>2</sup> by 2047 in 3 Phases. Presently good temporary on-campus arrangements have been made for an office, 25 start-ups and a workshop shed for start-ups working on manufacturing.

IIT Bhubaneswar has received a lone of about INR 270 cr from MoE to build new hostels for 600 boys and 600 girls, 192 flats of different types for faculty and staff, and other works. Access to differently abled persons and Odiya art work and sculptures at prominent sites would be other features. A single section Kendriya Vidyalaya will also be built.

IIT Bhubaneswar has also received a lone of Rs. 49 cr from MoE for purchasing research and teaching related equipment.

A new master plan is being prepared based on feedback from the residents to guide the remaining phases of development.

## **Research and Development**

Six faculty members from IIT Bhubaneswar were recognized as among the world's top 2% scientists in the 2024 Stanford-Elsevier ranking, which is widely respected in the global academic community. Several faculty are Editors of prestigious international journals, and have won best paper awards in international conferences. A detailed list of awards and honours achieved by a number of faculty will be available on the website.

Some of the works from IIT Bhubaneswar which were in the news media include - crucial role of mixing Atlantic and Arctic waters in global ocean circulation, improving the lead time of heavy rainfall forecasts with Artificial Intelligence based models, finding that urbanization alone has led to an overall 60% enhancement in warming in Indian cities, and an innovative solar-powered microwave pyrolysis reactor to recover valuable resources from waste materials such as biomass and plastics.

An industry-academia research and innovation center has been set up to indigenize high volume production of 200 mm dia SiC wafers used for fabricating power devices at the cost of INR 45 crores. Using this technology, the industry plans to establish a SiC device fabrication and ATMP plant in Odisha worth several thousand crores of rupees.

An Artificial Intelligence and High Performance Computing Center has been established to conduct interdisciplinary research ranging from Agriculture to Medicine, Atomic Energy to Smart cities, Aerospace to Stock Markets, Archaeology to Weather sciences. It has begun its activities with an Endowment of Rs. 25 crores from Rabison Foundation.

A consortium of institutions including NISER, IMMT etc. is establishing Odisha Hydrogen Valley Foundation in IIT Bhubaneswar to promote industrial R&D that will bring green hydrogen at an economical price and scale. The valley is expected to generate nearly Rs. 250 Cr funding from various sources by 2030.

### **Entrepreneurship promotion**

The Institute has launched the 100-Cube Start-Up initiative in February 2024, which aims to create 100 start-ups, each with a valuation of Rs. 100 crores by the 100th Anniversary of Odisha in 2036. Since then the number of Startups has gone up from 18 to 80, which include more than 65 Odisha-based startups, 11 faculty Entrepreneurs. The start-ups are in key areas like augmented and virtual reality (VR/AR), financial technology (Fintech), smart cities and urban development, health and medical technology, and clean technology and renewable energy.

A 3-credit course titled “Introduction to Research and Entrepreneurship” has been introduced to create a taste for research and entrepreneurship using interactive lectures, anecdotes, activities and discussions. A minor degree program on “Innovation and Product development” has been introduced for B.Tech students.

We have been conducting Hackathons and Concept to Commercialization workshops to promote innovation and entrepreneurship, and interaction sessions with secondary school students and their parents for creating a taste for entrepreneurship.

### **Academic initiatives**

IIT Bhubaneswar is one of the 2 IITs among more than 40 institutions who have started the 4-year Integrated Teacher Education Program last year with

an intake of 50 students for B.Sc-B.Ed majoring in Physics, Chemistry, Mathematics, and Economics. The **program** aims at producing outstanding school teachers.

IIT Bhubaneswar initiates every teacher in research based teaching practices, i.e. interactive classes and individual as well as collaborative activities, setting questions at different levels of thinking and how to give and take feedback.

IIT Bhubaneswar requires every teacher to upload a Teaching portfolio at the end of the semester for every course taught by him/her. A “Teaching Portfolio” documents all key aspects of a teaching activity just as a “Research Paper” does for a research activity. A faculty is required to produce this document as evidence of her teaching success at the time of the review connected with career advancement.

The institute is partnering with MOSart Labs to offer an innovative Professional Diploma Program in Semiconductor Technology and Chip Design. It has developed an Advanced Certificate Program in e-Drives and Battery Systems in collaboration with Nagpur based pManifold EV Academy Pvt. Ltd. (evACAD).

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IIT Bhubaneswar is involved in a number Continuing Education activities like SPARC and GIAN courses, Outreach activities like UBA, Student and Alumni Activities that could not be covered in my address due to constraints on time.

To conclude, IIT Bhubaneswar is growing steadily and surely along several dimensions. For this, the institute is grateful to all its stakeholders – faculty, students, staff, sponsoring agencies, our alumni and Ministry of Education, Govt. of India. I end by congratulating all the graduating students and their parents, awardees and medal winners, and wish all happiness, professional success and fulfilment in their lives.

Jai Hind  
Shreepad Karmalkar  
December 28, 2024