भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Press Release

Semiconductor Talent Primer Workshop held at IIT Bhubaneswar with Strong Industry-Academia Synergy

Bhubaneswar, 4th August 2025: In a significant step towards strengthening India's semiconductor workforce ecosystem, IIT Bhubaneswar successfully hosted a two-day Semiconductor Manufacturing Primer Workshop in collaboration with SEMI, Electronics Sector Skills Council of India (ESSCI), and India Electronics and Semiconductor Association (IESA) on 31st July and 1st August 2025.

The event brought together academia, industry, and government stakeholders to deliver hands-on sessions and discussions aimed at bridging the skill gap in semiconductor manufacturing, packaging, and allied domains. With curated modules on topics such as industrial safety for semiconductors, cleanroom practices, vacuum technologies, display systems, and advanced packaging, the workshop was tailored to align with AICTE's new curriculum electives.

Inaugurating the workshop, Prof. Shreepad Karmalkar, Director of IIT Bhubaneswar, emphasized the strategic responsibility of academic institutions in enabling national self-reliance in semiconductors: "At IIT Bhubaneswar, we are committed to nurturing engineers who not only understand advanced technologies but are also equipped to innovate within them. This course offers students an opportunity to engage with the concepts and skills required for the practice of semiconductor technology - from understanding crystal growth of silicon carbide at 2400°C to exploring device-level concepts like Metal-Oxide-Semiconductor Field-Effect Transistor (MOSFETs). By combining interdisciplinary theory with hands-on skill-building, it reflects our alignment with the National Education Policy's emphasis on practical, skill-based learning."

The workshop also witnessed the presence of Shri Manas Ranjan Panda, Special Secretary, Electronics & IT Department, Government of Odisha, who shared the state's vision for an integrated semiconductor ecosystem: "Semiconductors are the backbone of modern technology, and Odisha is committed to building a full-stack ecosystem—from chip design and fabrication to advanced packaging and talent development. Institutions like IIT Bhubaneswar are driving this mission through forward-looking curricula and industry-aligned research. With initiatives like the Odisha Chip programme, global partnerships, and faculty upskilling, we aim to bridge the talent gap and position Odisha as a hub for compound semiconductors and advanced packaging."

Representing the industry and skill development sector, Dr. Ashwini K. Aggarwal, Chair, Semiconductor Skill Committee at ESSCI, reflected on the need for industry-aligned education: "We've designed electives that cover vital domains like industrial

safety, cleanroom practices, vacuum tech, and packaging—ensuring students gain hands-on, industry-ready skills. In collaboration with IIT Bhubaneswar, our aim is to align academia with real-world needs and prepare talent not just for semiconductors, but for the broader process industry landscape."

The technical sessions were structured into four key modules, including semiconductor industrial safety, cleanroom and controlled environments, vacuum technology, and semiconductor packaging, providing a comprehensive view of the manufacturing ecosystem. A hands-on walkthrough of relevant infrastructure and interactive rounds helped participants connect theory with real-world applications.

Dr. Sayan Dey, Assistant Professor at IIT Bhubaneswar, coordinated the workshop and reiterated the relevance and significance of this programme.

With its successful execution, the workshop marks an important milestone in IIT Bhubaneswar's contribution to India's semiconductor mission and the state's growing role in the national tech landscape.
