

# Jadavpur University – IC Center of Excellence Progress report Year 2

Status and Progress Report on Infrastructure, Student Activities, Industry Collaboration, Academic, and Overall Progress

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## Infrastructure

### 1. Laboratories and Equipment:

- Established **Digital VLSI Design Laboratory** and **Analog and Mixed Signal Design Laboratory**.
- **Embedded Systems, IoT, and AI/ML Laboratory** set up.
- Space designated for **FPGA and PCB labs**; PCB lab progress stalled due to air conditioning restrictions in Prayukti Bhaban.

### 2. Software/Hardware Purchases:

- **EDA Software:** Full Synopsys tool bundle, Cadence, Siemens, Agilent, Ansys (Chip-In access), and GlobalFoundries PDKs at 180, 130, 45, and 22 nm.
- **Workstations and Computers:** Multiple high-performance workstations and PCs for different labs (e.g., Digital Lab has 1 WS, 11 PCs; Analog Lab has 1 WS, 18 PCs).
- **GPUs:** NVidia GeForce RTX3060 12GB and RTX 4060 Ti 16GB.
- **Embedded Systems Boards:** PYNOC Z2, Jetson Nano, Digilent Nexys, Raspberry Pi, Arduino, and various sensors for IoT applications.

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## Student Activities

## 1. Internships and Research Opportunities:

- Internship placements at companies like Vertiv, Philips, and Cyient.
- Collaborations with prestigious institutions like IIT KGP, leading to summer research internships.
- Active participation in programs like **India Semiconductor Workforce Development Program (ISWDP)** in collaboration with Synopsys.

## 2. Student Competitions and Recognitions:

- Participation in **Synopsys SNUG** and **DVCON India 2024**, with students reaching final stages.
- Noteworthy performances in events such as **Anveshan 2023** and IEEE Solid State Circuit Society's student poster contest.
- Projects displayed in various exhibitions, such as **NAAC student exhibition** and **Bigyan Mela**.

## 3. Technical Workshops and Lectures:

- Hosted workshops on topics like **FPGA/SoCs with MATLAB & Simulink** and technical lectures by prominent academics and industry experts, enhancing students' practical exposure.

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## Industry Collaboration

### 1. Collaborative Agreements and MoUs:

- MoUs signed with **Synopsys, GlobalFoundries, HCL, ECOE, and UTL** to strengthen industry partnerships.
- **NDA signed with Aarish Technology** for internship placements.

### 2. Company-Sponsored Projects and Training:

- Partnership with **Cadence** for future project-based mentorship.

- Initiated discussions with **Maven Silicon** for RISC V training.

### 3. Collaborative Labs and Projects:

- Collaborations with **IACS** on quantum cold interaction and **CGCRI** for neuromorphic FPGA-based projects.
- Establishment of a **PCB lab** supported by donations from alumni for RISC V projects.

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## Academic Progress

### 1. Curriculum Updates:

- Revised PG curriculum to align with industry standards, with inputs from Synopsys and other stakeholders.

### 2. Student Clubs and Associations:

- Active **Digital VLSI Club** showcasing student projects and facilitating academic-industry interactions.

### 3. Research Projects and Innovation Grants:

- Several projects received grants, like the **IoT-based Fish Water Environment Monitoring System**, which received the JU innovation seed grant.

### 4. Placement and Employment Success:

- Successful recruitment from companies like **Synopsys, Ixana, Micron, and Texas Instruments**.

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## Overall Progress and Outlook

- The institution is making significant strides in establishing industry relationships, improving lab infrastructure, and enhancing student opportunities.

- Continuous engagement with industry leaders through MoUs and collaborative projects is fostering practical skill development.
- New equipment and advanced tools in labs facilitate state-of-the-art learning, which aligns with the university's vision of becoming a leading contributor to India's semiconductor industry growth, projected to reach \$150 billion by 2030.