MOSart Labs

Art of VLSI

Advanced Physical Design Program

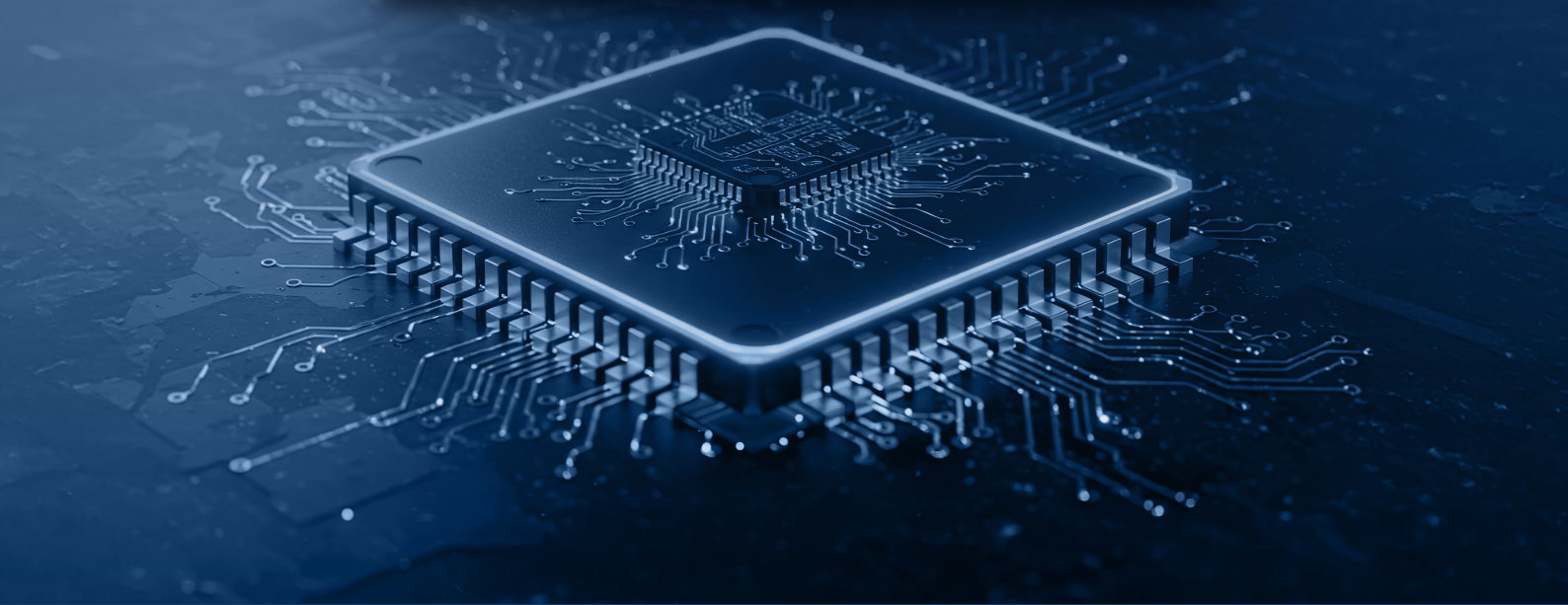
(Offline Mode at our Hyderabad Centre)

Your Gateway to Semiconductor World

- 6 Months Industry Ready Program
- 100% Placement-Oriented Program
- Full-time offline course
- Real chip design projects
- 2 Months Internship included (IP/Industry project)
- Hands-on training with industry-standard tools

Get trained by **India's leading chip design experts**

ams OSRAM · Micron · intel



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About Physical Design Program

The semiconductor industry is witnessing rapid growth, creating strong demand for skilled Physical Design Engineers. MOSart Labs is an active chip design company, not just a training institute, offering the Advanced Physical Design Offline Program to build industry-ready VLSI professionals.

Learn inside a real chip design environment with hands-on training in Floorplanning, Power Planning, Placement, CTS, Routing, STA, Physical Verification, Signoff, and industry-standard EDA tools while working on practical implementation projects.

The 6-Month Offline Program, including a 2-Month Industry Internship Project, combines expert mentorship, real project experience, and industry exposure to prepare you for a successful career in Physical Design.

Learn Inside a Chip Design Company

Train inside an active chip design company with real industry workflows.

Full-Time Classroom Learning

Offline instructor-led training with personalized mentoring and continuous practical lab sessions.

500+ Hours of PD Labs

Gain extensive hands-on floorplanning, routing, STA, and signoff experience.

2-Month Industry Internship

Work on real Physical Design projects with expert guidance.

Learn from Industry Veterans

Learn directly from experienced VLSI professionals with decades of industry expertise.

High-Paying Career Opportunities

Build job-ready Physical Design skills for leading semiconductor companies.

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Inside MOSart Labs

Offline Classes | 9:00 AM to 7:00 PM

100+ Potential Hiring Companies

Texas Instruments · ams OSRAM · Micron · NVIDIA · cadence · SYNOPSYS® · QUALCOMM®

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2 Month Industry Project Internship

At MOSart Labs, an active chip design company, learning extends beyond the classroom. During the 2-month internship, you'll execute a complete Physical Design project following professional semiconductor implementation methodologies.

From Project Setup & Design Analysis to Logic Synthesis & Floorplanning, Placement & CTS, Routing & Timing Closure, Physical Verification & Sign-off, and Industry Project Presentation, you'll experience the complete backend implementation flow under the guidance of experienced VLSI engineers.

Build practical project experience, strengthen your portfolio, and graduate with the confidence to contribute to real semiconductor design teams from day one.

Internship Project

A 2-month industry-level backend project covering the complete RTL-to-GDSII implementation flow.

1. **Project Setup & Design Analysis**
   Analyze RTL, review constraints, and configure the physical design environment.
2. **Logic Synthesis & Floor planning**
   Generate the netlist, create the floorplan, and build the power distribution network.
3. **Placement & Clock Tree Synthesis (CTS)**
   Optimize placement, reduce congestion, and implement a balanced clock tree.
4. **Routing & Timing Closure**
   Perform routing and resolve setup and hold violations for timing closure.
5. **Physical Verification & Sign-off**
   Run DRC, LVS, STA, and power checks to achieve tape-out-ready sign-off.
6. **Industry Project Presentation**
   Present the complete backend project with reports, documentation, and design review.

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A 6 Months Journey - Advanced PD Design

Phase 1 (Offline)
1 Month (PD Foundation) with Course Project

- Learn Physical Design fundamentals.
- Master CMOS, DRC/LVS, Layout, and fabrication flow.
- Build a strong backend foundation.

Phase 2 (Offline)
2 Months (Advanced PD) with Course Project

- Learn Floorplanning, CTS, Routing, and STA.
- Apply advanced implementation concepts through hands-on projects.

Phase 3 (Offline)
1 Months (Industry Internship Project)

- Get your internship project reviewed by industry experts.
- Work on an industry-level Physical Design project.
- Gain real semiconductor industry experience.

Phase 4
Internship Project Review

- Extended internship project with hands-on experience on real-world design challenges.
- Weekly 1:1 mentorship sessions with design experts for personalized guidance and feedback.

Phase 5
Job Interview Preparation

- Build your portfolio and attend mock interviews.
- Prepare thoroughly for placement opportunities.

Phase 6
Get Placed

- Attend interviews scheduled by our placement team.
- Crack your interviews and enter the semiconductor industry.

OUR LEADERSHIP TEAM

Rajesh Gupta
27 Years Experience
Ex- Country Head
Micron & ams OSRAM

Dr. Krishna Kanth
23 Years Experience
Ex-Director
ams OSRAM

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What You Will Learn

Foundation Module

Physical Design

- CMOS Process Technology
- Layout Design Principles
- Design Rule Checking (DRC)
- Layout Versus Schematic (LVS)
- Design for Manufacturability (DFM)
- Standard Cell Libraries
- Semiconductor Fabrication Flow
- Physical Verification
- Industry EDA Tools
- Hands-on Layout Projects

Specialization Module

Advanced Physical Design

- Floor planning Techniques
- Power Planning
- Cell Placement
- Clock Tree Synthesis (CTS)
- Signal Routing
- Static Timing Analysis (STA)
- Timing Closure
- Physical Signoff Flow
- ECO Optimization
- Industry Tapeout Project

Career Opportunities

- Physical Design Engineer
- ASIC Physical Design Engineer
- Backend Design Engineer
- STA Engineer
- Physical Verification Engineer
- Implementation Engineer

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Program Outcomes

By the end of this program, you'll have the technical skills, practical experience, and confidence to begin your career in Physical Design.

Become an Industry-Ready Physical Design Engineer

Master backend implementation with hands-on project experience.

Master the Complete RTL-to-GDSII Flow

Gain end-to-end command of floorplanning, placement, CTS, routing, STA, timing closure and signoff.

Build a Strong Industry Portfolio

Showcase implementation projects completed during coursework and internship.

Industry Internship Experience

Gain real-world exposure on a live RTL-to-GDSII project that strengthens your technical skills and job readiness.

Master Industry-Standard EDA Tools

Gain practical experience with leading physical implementation and signoff tools.

SYNOPSYS® cadence®