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SEMICON 2025: Building the Next Semiconductor Powerhouse

India's Biggest Semiconductor & Electronics Show

1st September, 2025

"Today's India inspires confidence in the world... When the chips are down, you can bet on India." ~Prime Minster Narendra Modi

Key Takeaways

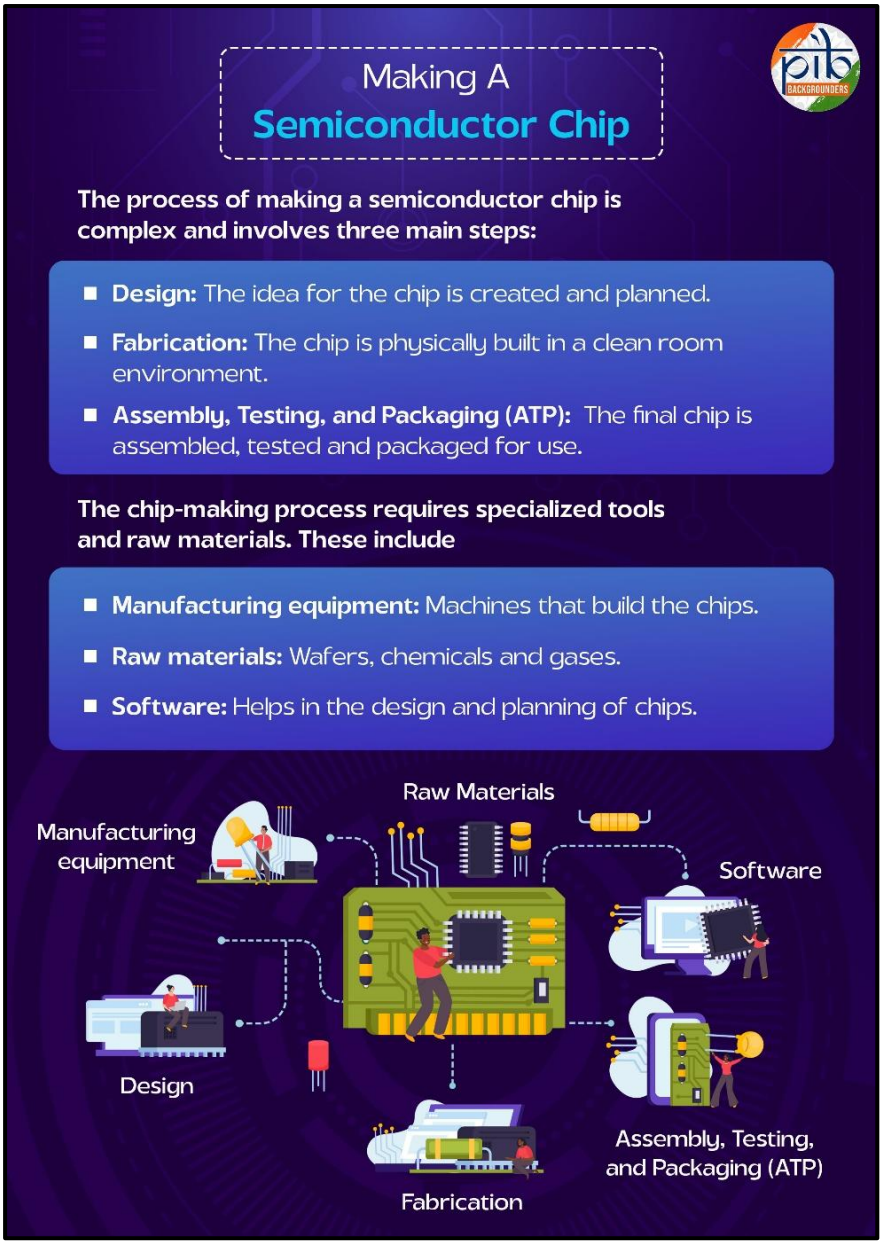
- PM Modi to inaugurate **SEMICON India 2025**: India's biggest Semiconductor & Electronics show to be held in Yashobhoomi, New Delhi from 2–4 September 2025.
- Theme for SEMICON 2025 is- "***Building the Next Semiconductor Powerhouse"***
- Bharat to welcome **33 nations, 50+ global CXOs, 350 exhibitors and 50+ visionary global speakers** at SEMICON India 2025.
- Event to highlight **robust local semiconductor ecosystem expansion** and industry trends.
- SEMICON India to address complex challenges of tomorrow while fostering collaboration across the semiconductor ecosystem towards Atmanirbhar Bharat.
- **India's chip market is booming**, set to hit $100–110 Bn by 2030.
- **India Semiconductor Mission (₹76,000 Cr outlay)** boosts local manufacturing, design, and talent.
- Total approved projects under ISM reaches to **10** with cumulative investments of around **Rs.1.60 lakh crore in 6 states.**
- On 28th August, CG-Semi launched India's first OSAT Pilot Line in Gujarat to produce the country's first 'Made in India' chip.

Introduction

Semiconductors are at the heart of modern technology. They power essential systems in healthcare, transport, communication, defence, and space. As the world moves toward greaterdigitalization and automation, semiconductors have become integral to economic security and strategic independence. In just four years, since the launch of the **India Semiconductor Mission (ISM)** in 2021, India has transformed its semiconductor journey from vision to reality. To support this vision, the government announced a **₹76,000 crore Production Linked Incentive (PLI) scheme, of which nearly ₹65,000 crore has already been committed.**

As part of its efforts to position India as a global hub for semiconductor innovation and manufacturing, **Prime Minister Narendra Modi** will inaugurate the **SEMICON India 2025** on September 2 at New Delhi**. This fourth edition is India's largest, with over 350 exhibiting** companies from 33 countries and regions and a record number of global stakeholders. SEMICON India 2025 is jointly organized by the India Semiconductor Mission (ISM) under the Ministry of Electronics and Information Technology (MeitY) and SEMI, the global semiconductor industry association. Additionally, on 28th August, a major milestone in India's semiconductor journey was achieved with the launch of one of the **country's first end-to-end Outsourced Semiconductor Assembly and Test (OSAT)** Pilot Line Facilities in Sanand, Gujarat. Semiconductor company CG-Semi, is expected to roll out the first 'Made in India' chip from this pilot facility.

Be it design, packaging or fabrication, we as a nation are giving shape to our dream in all these foundational aspects to become self-reliant. Through the **Design Linked Incentive (DLI) scheme**, **23 chip design** projects have been sanctioned to support startups and innovators. Companies like Vervesemi Microelectronics are creating advanced chips for defense, aerospace, electric vehicles, and energy systems, showing that India is no longer just a consumer but a creator.



SEMICON India 2025

The Central Government has launched the SEMICON India Programme with an investment of ₹76,000 crore, implemented through the India Semiconductor Mission (ISM).

SEMICON India brings together global industry leaders, policymakers, academia, and startups to foster investment, dialogue, and strategic partnerships. SEMICON India plays a catalytic role in advancing ISM's goals by enabling cross-border collaborations, promoting research commercialization, enhancing skill development, and showcasing India's growing potential in the global semiconductor value chain. Three editions of SEMICON India have been held so far, in 2022 (Bangalore), 2023 (Gandhinagar), 2024 (Greater Noida). **SEMICON India 2025** is set to display India's redefining role in the global semiconductor ecosystem. The three-day event will bring together industry leaders, innovators, academia, government and other stakeholders to drive collaboration and technology advancements across the entire supply chain.

- **A key high point of SEMICON India 2025 is the significantly higher level of stakeholder participation compared to previous editions.**
- **First-Ever Global Pavilions, Country Roundtables, Skilling Initiatives, and Design Startup Pavilion to Witness Record Stakeholder Participation**
- **To feature nearly 350 exhibitors from across the global semiconductor value chain including 6 country Round Tables, 4 country pavilions, 9 states participations and over 15000 expected visitors.**

The event would be of high interest for business and technology leaders, researchers, and industry analysts from across the microelectronics supply chain, including managers, equipment manufacturers, people working in design, scientists, engineers, college / graduate students, technicians among many others.

SEMICON® INDIA

Special Features includes programs like:

Workforce Development Pavillion

- Attracting the Next Generation – Building a Diverse Talent Pipeline
- By 2030, one million additional skilled workers will be needed.
- Chip In! Sessions: engaging presentations, leadership opportunities, interactive activities in microelectronics.
- Engage students in STEM and point them toward semiconductor careers.
- Ensure a diverse and inclusive talent pipeline.
- SEMI, academic partners, and industry members design innovative activities to spark lasting interest for tomorrow's high-tech workforce.

SEMI University Program

- Offers best-in-class technical and business training for professionals and newcomers to the global semiconductor industry.
- Curriculum includes 800+ on-demand courses:

- Front-end and back-end manufacturing operations
- Chip design principles
- Workplace safety
- Technology trends, and more

- Includes content from classroom events and webinars.
- Partnerships with content providers to deliver training quickly.
- Helps advance careers, grow businesses, contribute to the industry, and onboard new workforce.

Sustainability

- Concerns around building sustainable businesses continue to mount.
- Black Swan and Grey Rhino events increase risk and resiliency complexity.
- Issues: global warming, severe and unpredictable climate disruptions, water and natural resources stress.
- Need to step up reducing emissions and intensify circularity efforts.

International Roundtables

- Exclusive, high-level discussion forums.
- Industry leaders, government officials, and international delegates exchange ideas.
- Focus on strategic topics: semiconductor manufacturing, supply chain resilience.

Highlights of the event:

• It will feature nearly **350 exhibitors, over 15,000 expected visitors, 6 country roundtables, 4 country pavilions, and participation from 9 Indian states**, offering South Asia's largest platform for the semiconductor and electronics industries.
• The event will highlight India's semiconductor progress, showcasing **10 approved strategic projects** including High-Volume Fabs, Advanced Packaging, Compound Semiconductors, OSATs, and government support for research and start-ups.
• Under the theme "**Building the Next Semiconductor Powerhouse**", the event will offer valuable insights into innovations and trends in key areas such as Fabs, Advanced packaging, smart manufacturing, AI, supply chain management, sustainability, workforce development, Designs and Start Up's.
• Over three days, the program includes **six international roundtables, fireside chats, and paper presentations** designed to tackle complex future semiconductor challenges.
• More than **280 academic institutes and 70+ start-ups** are supported by state-of-the-art design tools and incentives like the Design Linked Incentive (DLI) scheme to boost indigenous innovation.

SEMICON India 2025 is a premier event uniting global leaders, innovators, academia, policymakers, and industry experts to drive the future of semiconductors in India. The event showcases India's growing capabilities, policies, and collaborations aimed at building a self-reliant and globally competitive semiconductor ecosystem.

The live session of the 2025 event can be watched here:

https://www.youtube.com/@IndiaSemiconductorMission/streams

Highlights From Previous Editions

2024: Greater Noida, Delhi NCR

- Theme: *Shaping the Semiconductor Future*
- 2,168 government officials, industry leaders, peers at the inauguration.
- 250+ exhibiting companies from **18 countries**.
- **10,994 visitors** from **42 countries**.
- **675 booths**, 6,075 sqm net exhibiting space.
- **Top 5 visiting countries:** Japan, USA, Singapore, Malaysia, Korea.
- **Conference:** 180 speakers (60 Indian, 120 international).
- **Focus areas:** market & technology trends, semiconductor design & manufacturing.
- **Workforce Development Pavilion:** 106 flash mentoring sessions

2023: Gandhinagar, Gujarat

- Theme: *Catalysing India's Semiconductor Ecosystem*
- **8,000+ participants from 23 countries**
- **40,000 visitors 600 exhibitors**
- Global Majors Present: **Micron Technology, Applied Materials, AMD, Foxconn, Cadence, SEMI**
- Major Announcements: AMD: investment of $400M in India to establish India as the world's largest design center for AMD.

2022: Bengaluru, Karnataka

- First ever Semicon India Conference
- Theme: *Design and Manufacture in India, for the World: Making India a Semiconductor Nation*
- The steering committee included a mix of Startups, Academia and Global Industry Leaders demonstrating the Government's collaborative approach towards powering India's Semiconductor & electronics manufacturing ambitions.
- Topics included India's potential as a semiconductor hub, digital infrastructure, startup ecosystem, ease of doing business, and youth skilling.

Why Semiconductor Industry Matters: A Strategic Context

Semiconductors are special materials that can act as both conductors and insulators, letting them control the flow of electricity, perfect for electronic circuits. Pack billions of these into a chip, and suddenly a device can make calls, snap photos, or even help a lunar lander choose its own safe landing spot, just like Chandrayaan-3's Vikram did with Indian-designed tech and AI.

Think of each chip as a bustling city, packed with mini-switches called transistors and countless tiny parts working together. Whether it's a phone, an EV, or a national defence system, these chips are the invisible heroes, making modern life possible.

Semiconductors are the backbone of modern technology, powering critical systems in healthcare, transport, defence, and space. Increased digitalization and automation mean chips now drive economic security and strategic independence, as the Covid-19 pandemic and Ukraine war showed when global shortages affected electronics manufacturing.

The industry's growth is fuelled by the demand for faster, compact components for smart devices and the rise of artificial intelligence, needing powerful chips for real-time data processing. Today, Taiwan, South Korea, Japan, China, and the US dominate production—with Taiwan alone making over 60% of of the world's semiconductors and 90% of the most advanced ones, creating risks if supply chains falter. To address this, countries worldwide, including India are developing secure, diverse supply chains and investing in domestic chip manufacturing so that global systems remain resilient and future-ready.

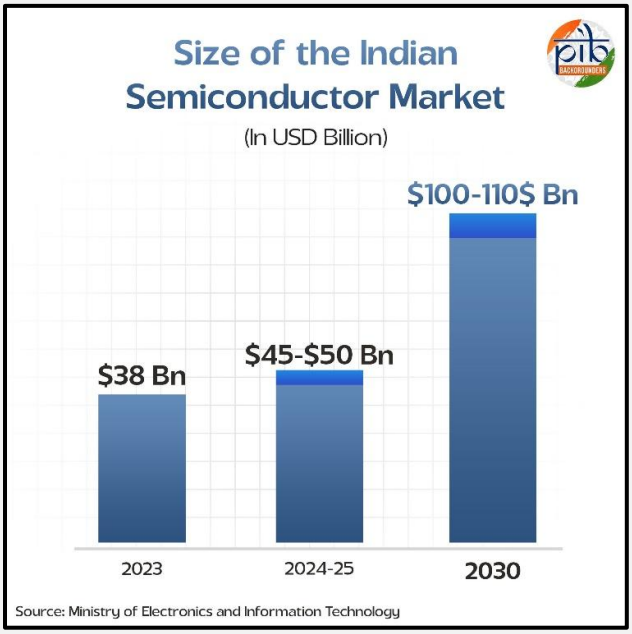
India as a player in the Semiconductor Market

The global demand for chips is skyrocketing, but the supply chain remains very fragile owing to the concentration of the industry in a few limited geographies. There is a clear need for global diversification of manufacturing. India is emerging as a dominant player in this regard. Initiatives like including Electronics Systems Design and Manufacturing (ESDM) as one of the key sectors under Make in India, or the India Semiconductor Mission and Semicon India programme have helped create an ecosystem to support the industry.

The global semiconductor market is expected to reach **USD 1 Trillion by 2030** with India's market occupying a substantial portion of it. India has the capacity to emerge as a key contributor to the 3 primary pillars of the semiconductor manufacturing supply chain – **Equipment** – leveraging strong base of MSMEs to produce components for semiconductor equipment: **Materials** -India is a rich source of chemicals, minerals and gases which can be utilized by semiconductor supply chain companies; and **Services** (R&D, Logistics and supply chain, major talent in AI, big data, cloud computing and IoT.

In May 2025, the Union Minister, Shri Ashwini Vaishnaw, inaugurated two state-of-the-art semiconductor design facilities in Noida and Bengaluru. These centres are India's first to focus on advanced 3-nanometer chip design, marking a significant milestone in the nation's semiconductor innovation journey. Highlighting the achievement, The Minister stated that designing at 3 nanometers is truly next-generation, noting that while India had previously achieved 7nm and 5nm designs, this development marks a new frontier in semiconductor innovation.

As per industry estimates, the size of the Indian semiconductor market was about $38 Bn in 2023, $45-$50 billion in 2024-2025 and is expected to reach $ 100-110$ Bn by 2030.



Capitalizing on the fast progress of its semiconductor journey so far, India is making a generational shift towards becoming a future leader in the field, and is designing, packaging & manufacturing Made in India chips. As the use of intelligent chips grows rapidly, India is refining the packaging technology of designs to make them among the best in the world. In fabrication India is moving from traditional Silicon based semiconductors to the latest Silicon Carbide based semiconductors, while in design the roadmap is to introduce the more advanced 3D Glass packaging technology. Silicon Carbide SiC is more stable & robust than Si semiconductors as it can easily withstand high temperature of 2400 degree celsius & high voltage conditions. Such technology is critical for sectors like defence systems, missiles, radars & rockets in space. Thanks to the concerted efforts of industry, India is all set to have its own first Made in India chip soon. With these developments India will be in a position to give the world one of the best semiconductor design, fabrication & manufacturing ecosystems.

India Semiconductor Mission

The **India Semiconductor Mission** aims to provide financial support for investments in semiconductor fabrication, display manufacturing & chip design to strengthen India's integration into global electronics value chains.Envisioned to be led by global experts in the Semiconductor and Display industry, ISM aims to build a strong semiconductor and display ecosystem, positioning India as a global hub for electronics manufacturing and design, while serving as the nodal agency for the efficient and seamless implementation of semiconductor and display schemes. India now has **10 approved semiconductor projects** across six states, including its first commercial Silicon Carbide fab in Odisha on the anvil and an advanced packaging unit bringing next-generation technologies to fulfil our dreams. Together, these projects represent an investment of **₹1.60 lakh crore** and position India to walk shoulder-to-shoulder with global leaders.

Date	Company	Location	Status	Investment	Output Capacity
JUN 2023	Micron Technology	Sanand, Gujarat	Ongoing	₹22,516 crore	ATMP Facility, with phased ramp-up.
FEB 2024	Tata Electronics (TEPL) in partnership with Powerchip Semiconductor Manufacturing Corp (PSMC) of Taiwan	Dholera, Gujarat	Ongoing	~₹91,000 crore	50,000 wafers/month
FEB 2024	CG Power & Industrial Pvt Ltd in partnership with Renesas & Stars	Sanand, Gujarat	Launched one of the country's first end-to-end OSAT Pilot Line Facilities. First 'Made in India' chip expected to roll out from this pilot facility.	~₹7,600 crore	15 million chips/day
FEB 2024	Tata Semiconductor Assembly and Test Pvt Ltd (TSAT)	Morigaon, Assam	Phase 1 expected to be commissioned by April 2026	₹27,000 crore	48 million chips/day
SEPT 2024	Kaynes Semicon Pvt Ltd	Sanand, Gujarat	Pilot facility operational	₹3,307 crore	6.33 million chips/day
MAY 2025	HCL-Foxconn JV	Jewar, Uttar Pradesh	Ongoing	₹3,700 crore	20,000 wafers/month (36 M units/yr)
AUGUST 2025	SicSem Private Limited	Bhubaneshwar, Odisha	Recently approved	₹2,066 crore	60 thousand wafers per year; ATMP capacity: 96 million Units/year
AUGUST 2025	3D Glass Solutions Inc.	Bhubaneshwar, Odisha	Recently approved	₹1,943 Cr	Glass panels: 70 Thousand units/year; ATMP : 50 million units/ year

AUGUST 2025	CDIL (Continental Device)	Mohali, Punjab	Recently approved	₹117 Cr	158 million units /year
AUGUST 2025	ASIP (Advanced System in Package Technologies)	Andhra Pradesh	Recently approved	₹468 Cr	96 million units /year

Inauguration of India's first end-to-end OSAT Pilot Line Facility in Sanand, Gujarat

On 28th August, 2025, one of India's first end-to-end Semiconductor OSAT (Outsourced Semiconductor Assembly and Test) Pilot Line Facilities of CG Power at Sanand, Gujarat was inaugurated.

This milestone marks a crucial step in India's semiconductor journey under the India Semiconductor Mission, with CG Semi investing over ₹7,600 crore over five years to develop two advanced facilities aimed at chip assembly, packaging, testing, and post-test services.

The inaugurated G1 facility can handle around 0.5 million units per day and is set for commercial production in 2026, while the under-construction G2 will eventually scale up to 14.5 million units per day, generating over 5,000 jobs. The facility also plays a vital role in building India's semiconductor talent pool through extensive workforce training and collaborations with academic institutions, supporting the country's vision for technological sovereignty and Atmanirbhar Bharat. This initiative highlights Gujarat's emergence as a key hub in India's semiconductor ecosystem, supported by significant government backing and industry expertise.

Mission focus of ISM

- Set up Chip Manufacturing plants (fabs)
- Create packaging and testing units
- Supporting startups in chip design
- Training young engineers
- Bring Global companies to Invest in India

Objectives of ISM

- Formulate a long-term strategy for developing sustainable semiconductors and display manufacturing facilities and semiconductor design eco-system in the country.
- Facilitate the adoption of secure microelectronics and developing trusted semiconductor supply chain, including raw materials, specialty chemicals, gases, and manufacturing equipment.
- Enable a multi-fold growth of Indian semiconductor design industry by providing requisite support in the form of Electronic Design Automation (EDA) tools, foundry services and other suitable mechanisms for early-stage start-ups.
- Promote and facilitate indigenous Intellectual Property (IP) generation.
- Encourage, enable and incentivize Transfer of Technologies (ToT).
- Establish suitable mechanisms to harness economies of scale in Indian semiconductor and display industry.
- Enable cutting-edge research in semiconductors and display industry including evolutionary and revolutionary technologies through grants, global collaborations and other mechanisms in academia / research institutions, industry, and through establishing Centres of Excellence (CoEs).
- Enable collaborations and partnership programs with national and international agencies, industries and institutions for catalysing collaborative research, commercialization and skill development.

Skill Enhancement & Collaboration Under ISM

The India Semiconductor Mission offers various skill development programs, training workshops, and certification courses to individuals interested in enhancing their skills and knowledge in the semiconductor field. These initiatives provide hands-on learning, industry exposure, and mentorship opportunities to nurture talent and promote career growth. This progress is creating opportunities for India's youth. The new projects alone will generate more than 2,000 skilled jobs directly and many more indirectly in electronics and manufacturing. Over 60,000 students have already benefited from semiconductor training programs, preparing a new generation of engineers and designers.

Research institutions and academia play a crucial role in the India Semiconductor Mission. They contribute through cutting-edge research, technology development, and talent grooming. Collaborations between industry and academia are encouraged to foster innovation, knowledge exchange, and collaborative projects that address industry challenges and drive technological advancements.

To foster talent development in the semiconductor chip design, the Government has launched several initiatives, as outlined below:

- New curriculum by All India Council for Technical Education (AICTE) for VLSI Design & Technology, Integrated Circuit (IC) manufacturing.
- Developing 85,000 skilled manpower in semiconductor design sector & providing EDA tools to design semiconductor chips, over 10 years.
- 45,000+ students from 100 institutions enrolled so far.
- Skilled Manpower Advanced Research and Training (SMART) Lab at NIELIT Calicut to train 1 lakh engineers nation-wide with 44,000+ engineers already trained.
- Collaboration with industry and universities such as Lam Research, IBM and Purdue University.
- C2S program: 278 academic institutions and 72 start-ups have been given EDA tools, as of August 2025.
- 60 thousand students benefitted, as of August 2025.
- 20 chips from 17 institutions fabricated so far, as of August 2025.
- **Future Skills Program,** an initiative taken by the government to train 20,000 engineers in Madhya Pradesh.
- **Micron and IIT Roorkee** have signed a MoU partnership to foster innovation and develop a highly skilled workforce.

Leveraging the country's large talent pool, global semiconductor design companies are now rapidly expanding their workforce in India to design cutting-edge chips.

Conclusion

India's ambitious semiconductor journey, exemplified by SEMICON India 2025, signals a transformative era of technological self-reliance and innovation, underpinned by government initiatives such as the Production Linked Incentive scheme. With substantial financial commitments, strategic resource allocation, and a clear focus on creating a holistic ecosystem, India is laying the groundwork for global leadership in the vital semiconductor sector. The effective use of resources has ensured that India is not only investing wisely but also building a strong foundation for a robust semiconductor ecosystem that can power industries from electronics to automobiles and position the country as a future global leader as the world is shaping itself in this crucial foundational sector. SEMICON India 2025 is not just about chips it is about self-reliance, innovation, and India's rise as a global powerhouse where "Designed and Made in India" technologies will shape the future of the world.

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