

Kaushal किरण

FEBRUARY 2025 | TSSC'S NEWSLETTER



Welcome Readers,

The semiconductor industry remains a critical pillar of the telecommunications sector, especially with the expansion of 5G, cloud computing, and IoT technologies.

MINIATURIZATION OF TELECOM EQUIPMENT

Advances in semiconductor technology have led to the miniaturization of network devices such as routers, switches, and base stations. This allows telecom providers to deploy compact yet powerful equipment in diverse environments, including urban areas with limited space. Miniaturization also enables the development of wearable devices and IoT systems that rely on telecom networks for connectivity. These devices integrate semiconductor components for wireless communication and efficient power usage.

POWER EFFICIENCY AND ENERGY CONSERVATION

Semiconductors are designed to operate with low power consumption, reducing the energy requirements of telecom infrastructure. Energy-efficient semiconductor components help optimize power usage and minimize operational costs. Advanced power management techniques, such as dynamic voltage scaling and power gating, are made possible by semiconductor innovations, further enhancing energy efficiency in telecom systems.

SUPPORT FOR EMERGING TECHNOLOGIES

Semiconductors play a critical role in enabling next-generation telecom technologies such as 6G, Wi-Fi 6, and silicon photonics. These advancements require high-performance semiconductor materials like compound semiconductors to support higher frequencies and greater bandwidths. Innovations like pluggable coherent optical transceivers and system-on-chip (SoC) designs enhance network capabilities while reducing costs and space requirements.

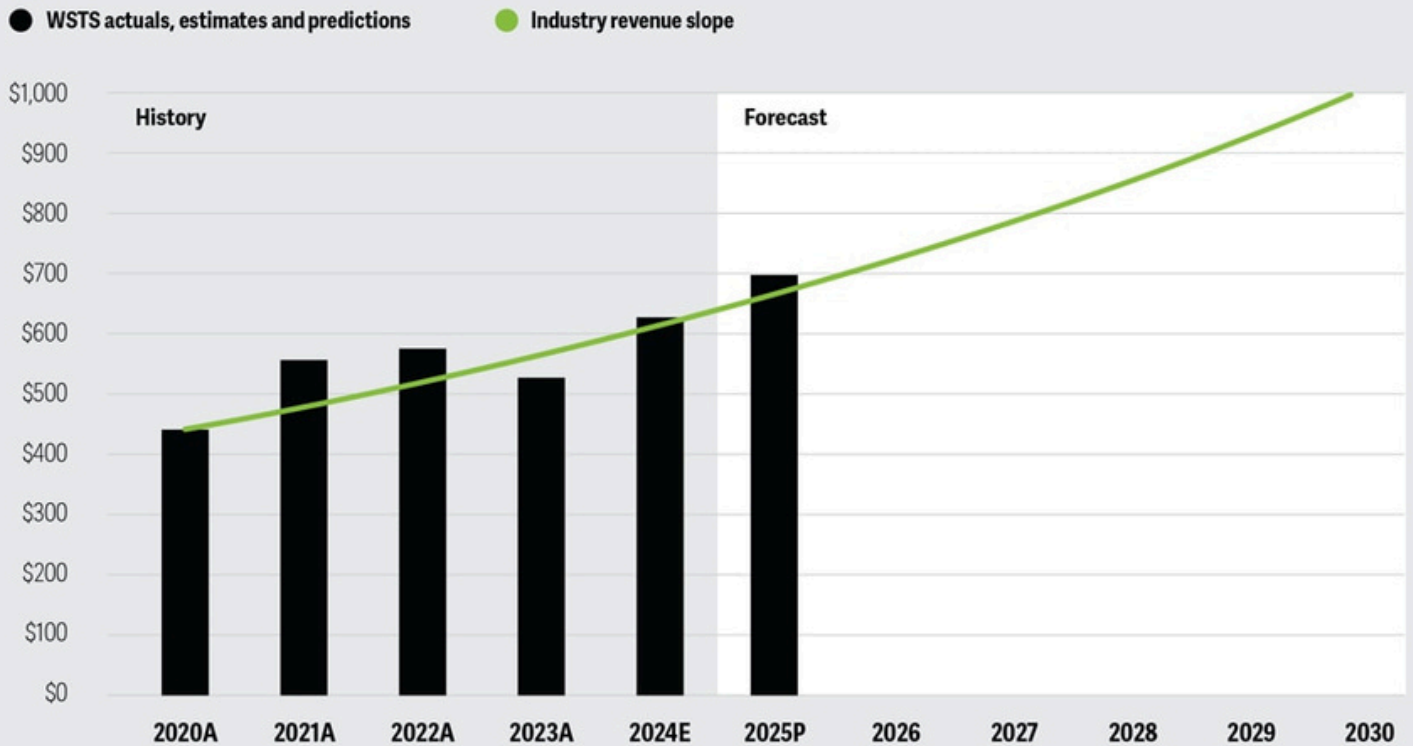
Semiconductors are integral to the hardware that forms the backbone of global communication networks, including routers, switches, and optical transceivers. They ensure reliable connectivity for billions of users worldwide.

In this newsletter, we explore the critical role of semiconductors in the telecom industry and how they drive advancements in connectivity, efficiency, and emerging technologies. Additionally, we highlight the specialized training programs offered by TSSC to equip professionals with the skills needed to thrive in this rapidly evolving sector.

Figure 1

Revenues indicate the possibility of the chip industry hitting US\$1 trillion in 2030

The path to \$1 trillion in semiconductor revenues (\$Billions)



Note: A = Actual, E = Estimate, P = Prediction.

Source: Deloitte analysis and extrapolation based on data from World Semiconductor Trade Statistics.

Deloitte | deloitte.com/us/en/insights/research-centers/center-for-technology-media-telecommunications.html

(Source: www.deloitte.com)

The semiconductor industry experienced strong growth in 2024, with sales reaching an impressive \$627 billion—surpassing the earlier projection of \$611 billion—marking a 19% year-over-year increase. Looking at the current market stats, 2025 is expected to be even more promising, with forecasts predicting sales of \$697 billion. This would set a new record and keep the industry on course to achieve the widely anticipated \$1 trillion milestone in chip sales by 2030.

UPSKILLING IN SEMICONDUCTOR JOB ROLES IN TELECOM



India's telecom sector is increasingly reliant on the semiconductor industry, with the expansion of **5G, IoT, and AI-driven networks driving demand for advanced chipsets and processors**. Government initiatives like the India Semiconductor Mission (ISM) and collaborations with global partners such as the US, EU, and Japan are strengthening domestic semiconductor manufacturing, ensuring a steady supply of critical components for telecom infrastructure. With the sector expected to generate significant employment, upskilling initiatives, including specialized training in semiconductor design, fabrication, and testing for telecom applications, are essential.

By developing a highly skilled workforce, India can enhance its telecom ecosystem, attract investment, and drive innovation, ensuring long-term industry sustainability and technological leadership.

THE INDIAN MARKET

The semiconductor market in India is projected to expand to **US\$13.31bn by the year 2029.**

Semiconductor Focused Qualification Packs by Telecom Sector Skill Council

Job Role: Semiconductor – Manufacturing & Packaging

Semiconductors are the backbone of telecom devices and infrastructure, enabling signal processing, data storage, and energy management. Their design, fabrication, and packaging involve advanced technologies like nanotechnology and photolithography to ensure high performance and efficiency. With 5G, IoT, and edge computing on the rise, the demand for cutting-edge semiconductors continues to grow, driving innovation in materials and processes.

To meet this demand, the Telecom Sector Skill Council (TSSC) has introduced qualification packs focused on semiconductor fabrication, packaging, and testing. These programs equip professionals with the expertise needed to support India's growing telecom ecosystem and maintain its competitive edge in semiconductor technology.

2

Assembly Process Sr. Technician – Wafer Thinning & Lapping QP CODE: TEL/Q7202

Executes wafer thinning and lapping processes in semiconductor assembly, ensuring adherence to safety and quality standards. Operates specialized equipment, troubleshoots issues, and stays updated on industry advancements to maintain efficiency and precision.

NSQF Level: 5
Duration: 540 hrs

1

Assembly Process Technician – Wafer Testing, QP CODE: TEL/Q7201

Responsible for testing and quality control of semiconductor wafers for telecom applications. Operates advanced testing equipment, documents test results, identifies defects, and collaborates with engineering teams to implement corrective actions while maintaining high-quality standards.

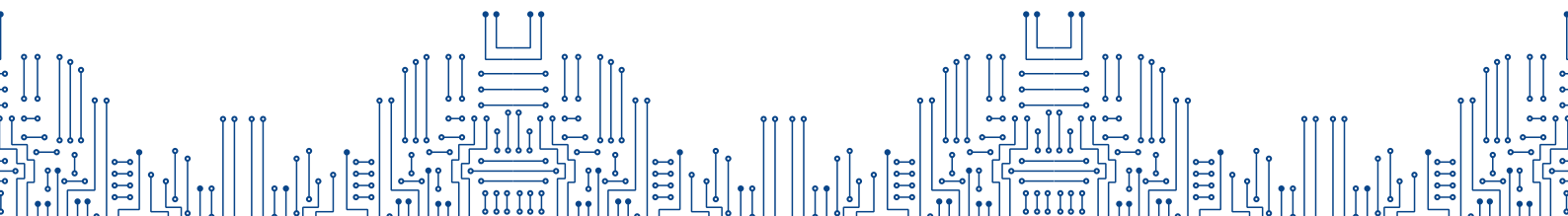
NSQF Level: 4.5
Duration: 450 hrs

3

Assembly Process Sr. Technician – LASER Marking QP CODE: TEL/Q7203

The individual for this job role is tasked with operating laser machines to accurately etch identification marks on semiconductor wafers. The individual is also responsible to set up laser parameters, ensuring the precision of markings, and maintaining equipment. In addition, he also need to inspect marked wafers for quality and adherence to specifications, documenting the process and outcomes.

NSQF Level: 5
Duration: 540 hrs



4

Assembly Process Supervisor – Wafer Dicing QP CODE: TEL/Q7204

The individual for this job role manages the dicing of semiconductor wafers into individual chips. The individual is also optimize dicing processes, selecting appropriate cutting tools, and ensuring the minimization of chip damage. In addition, the individual also analyzes yield data, collaborates with cross-functional teams to improve dicing strategies, and contributes to equipment maintenance protocols.

NSQF Level: 5.5
Duration: 570 hrs

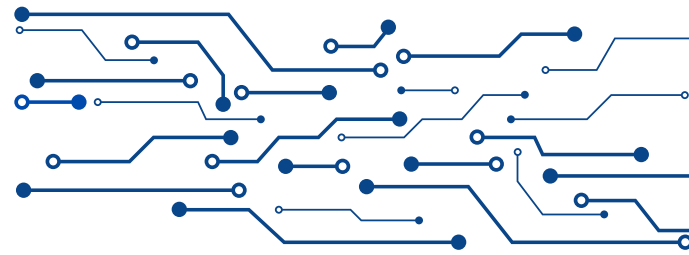


6

Reliability & Quality Control Manager QP CODE: TEL/Q7206

The individual for this job role is responsible to evaluate semiconductor products to ensure long-term reliability and consistent quality. The individual is also responsible to conduct stress tests, analyzes failure points, and implements quality control measures. In addition, he also work closely with design and manufacturing teams to recommend improvements that enhance product robustness and reduce defects.

NSQF Level: 6
Duration: 660 hrs

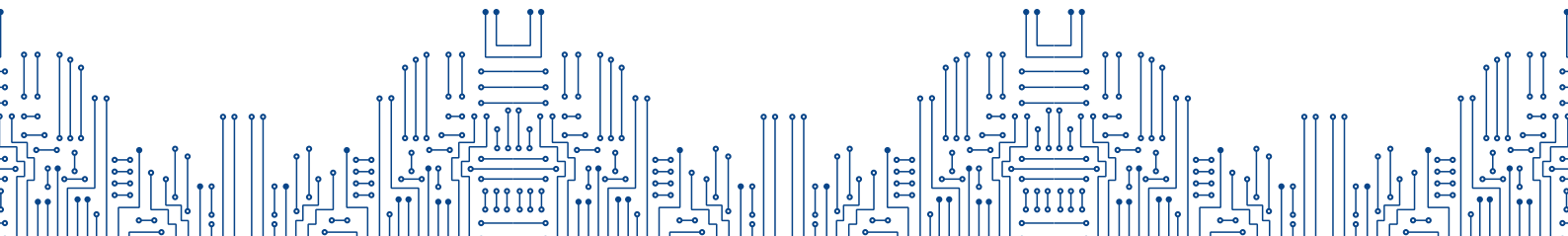


5

Substrate Design and Process Manager QP CODE: TEL/Q7205

The individual for this job role is responsible to develop the structural blueprint for semiconductor substrates. The individual also requires to design substrate layouts that meet electrical and thermal performance criteria while ensuring manufacturability. In addition, the individual also select materials, conducts simulations, collaborates with fabrication teams, and iterates designs based on testing feedback.

NSQF Level: 6
Duration: 600 hrs



1 Industry & Academia Consultation Workshop | 07.02.2025



Mr. Praveen Sirohi, CEO (Interim) of Telecom Sector Skill Council (TSSC), participated as a distinguished speaker at the **Industry & Academia Consultation Workshop** in Indore on 7th February 2025, organized by the Directorate of Skill Development MP.

In his insightful session, he discussed the future of the telecom sector, the role of skilling in 5G deployment, and the impact of industry-academia collaboration in shaping India's telecom workforce. His participation reinforced TSSC's commitment to bridging the skill gap and driving innovation in telecom and digital technologies.

2 Industry HR Conclave 2025 | 21.02.2025



Telecom Sector Skill Council was proud to participate in the Industry HR Conclave 2025, organized by Lighthouse Communities Foundation, held at Swosti Premium, Bhubaneswar.

Our AGM, Ankit Demta, participated as a panelist in the discussion on "Sustainable Livelihoods in Urban Odisha: Balancing Technology, Tradition, and Future Workforce Needs."

3 Partnership with PSNA College Of Engineering And Technology for skill development projects to enhance industry-ready telecom training | 21.02.2025



PSNA College of Engineering and Technology's ECE Department has signed an MoU with the Telecom Sector Skill Council (TSSC) to boost skill development in high end technologies. The signing ceremony featured Rtn. RSK Raguraam (Pro-Chairman, PSNA CET) and Ft. Lt. Prasad Nomula (Retd. IAF, Regional Manager, TSSC).

TSSC is currently implementing Faculty Development Program for PSNA CET.

Certifying Faculty under Skill India through Faculty Development Programs (FDP).

Telecom SSC, in the wake of expanding Industry-Academia-Government collaboration in Skill Development, is supporting colleges and universities with "Faculty Development Program" which is a structured program aimed at adding faculty members' teaching methodologies focusing on Skill Development, and leadership skills as per NCVET guidelines.

Telecom Sector Skill Council (TSSC) recently conducted a Faculty Development Program (FDP) on the Internet of Things (IoT) at the Center of Excellence at IGDTUW, Delhi. This initiative enhances faculty credentials, improves the institution's academic standing, and fosters a more sustainable and integrated approach to skill development.

4 Workshop on “Strategic Deliberation on Digital Skilling organized by IIT Delhi | 25.02.2025



Praveen Sirohi, CEO (Interim) of Telecom Sector Skill Council (TSSC), participated as a distinguished panelist at the Workshop on “Strategic Deliberation on Digital Skillings” organized by the Department of Design, IIT Delhi.

As part of Panel: Crossing Low Technology Literacy and Tech Barriers, he contributed valuable insights on bridging the digital divide in rural areas, emphasizing the role of user-friendly digital platforms, vernacular content, and low-cost tech solutions in enhancing digital literacy.

His participation underscores TSSC’s commitment to empowering communities through skill development and technology adoption.

5 TSSC Strengthens NAPS Awareness with TPAs in Delhi/NCR | 28.05.2025



Telecom Sector Skill Council (TSSC) organized an insightful session on 28th February 2025 to engage and activate Third Party Aggregators (TPAs) under the National Apprenticeship Promotion Scheme (NAPS) for the FY 2025-26.

The meeting was headed by Ankit Demta (AGM) and Nilesh Aggarwal (Senior Manager) as they had a discussion with the TPAs on how to enhance apprenticeships in telecom and expand industry engagements in Delhi/NCR.

6 APAC 5th National Skill Conclave | 28.02.2025



Praveen Sirohi, CEO (Interim) of Telecom Sector Skill Council (TSSC), participated as an esteemed speaker at the APAC 5th National Skill Conclave on 28th February 2025 in Bhopal, Madhya Pradesh.

The event, jointly hosted by the Department of Technical Education Skill Development & Employment, Govt. of Madhya Pradesh and APAC Media, brought together policymakers, education and industry leaders, and HR chiefs to address challenges and solutions for building a skilled, industry-ready workforce with new-age capabilities.

During the Panel Discussion: Sector Skill Gap and Action Plan for Industry 4.0 Job Roles, Mr. Sirohi highlighted the growing demand for skilled telecom professionals and the need for upskilling in emerging technologies like 5G, IoT, AI, and Cloud Computing to bridge the industry’s skill gap.

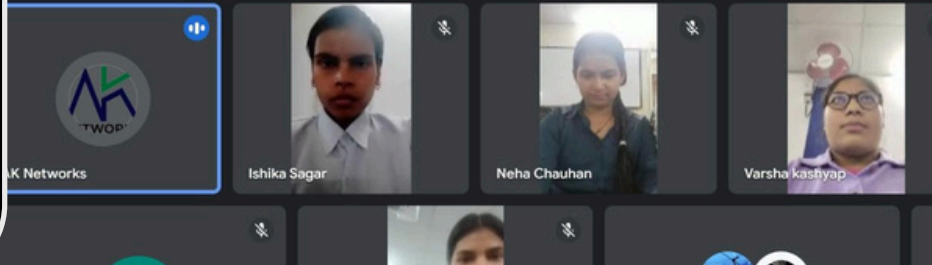
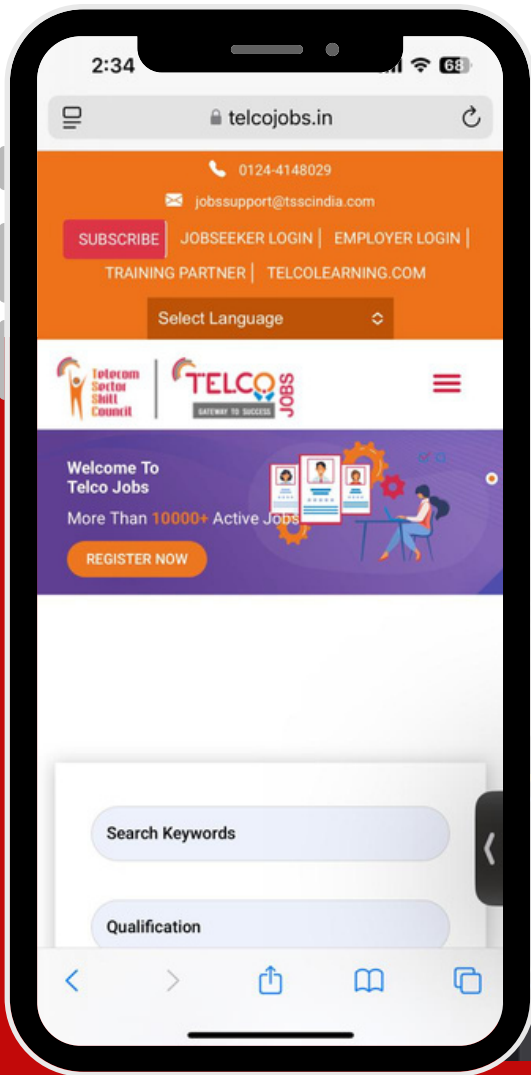
UPCOMING EVENTS

Convergence India 2025

Praveen Sirohi will be speaking on the panel "Connecting India: From 5G Leader to 6G Game Changer" at Convergence India 2025

March 19, 2025 | 11 - 12 AM
Bharat Mandapam | Delhi

PLACEMENTS



5282+

Placements

20+

Job Fairs

(Virtual + Physical)

KEY EMPLOYER PARTICIPATION FOR THE MONTH OF FEB'25



For further details, write to us at jobssupport@tsscindia.com

FROM THE CEO'S DESK

The telecom industry is at the heart of global digital transformation, and at its core lies a critical enabler—**semiconductors**. These tiny yet powerful chips are the foundation of modern communication networks, driving advancements in 5G, IoT, cloud computing, and AI-powered telecom solutions. As India emerges as a global semiconductor hub, the telecom sector must equip itself with the right talent to harness this revolution.

At the Telecom Sector Skill Council (TSSC), we recognize the growing demand for a skilled workforce in semiconductor technologies. From chip design and manufacturing to network optimization and **AI-driven telecom infrastructure**, the need for specialized expertise has never been greater. Our mission is to bridge this gap by fostering industry-driven skill development programs that empower professionals to excel in this evolving landscape.

To strengthen India's position as a telecom powerhouse, TSSC is committed to increasing upskilling and reskilling initiatives across the sector. Our focus areas include:

- **Semiconductor & Telecom Training Programs** – Equipping professionals with cutting-edge skills in semiconductor applications for telecom.
- **Industry Collaboration** – Partnering with telecom giants, semiconductor manufacturers, and academic institutions to create industry-relevant courses.
- **Future-Ready Workforce** – Developing expertise in 5G, network security, AI-driven telecom solutions, and IoT-enabled connectivity.
- **Government & Industry Support** – Aligning with national initiatives like 'Make in India' & 'Digital India' to ensure seamless integration of semiconductor advancements in telecom.

As the telecom sector undergoes rapid transformation, the synergy between semiconductor technology and telecom infrastructure will define the future of connectivity. Let's build a stronger, smarter, and more connected future together!



Praveen Sirohi

Chief Executive Officer (Interim)
Telecom Sector Skill Council



EMPOWERING THE
WORKFORCE, ADVANCING THE
NATION'S DIGITAL FUTURE.

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