

GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 1745
TO BE ANSWERED ON: 29.07.2026

**ROADMAP FOR CREATION OF ROBUST SEMICONDUCTOR TALENT
PIPELINE**

1745. THIRU D M KATHIR ANAND:

Will the Minister of ELECTRONICS AND INFORMATION TECHNOLOGY be pleased to state:

- (a) the details of roadmap adopted for creating a robust semiconductor talent pipeline to support the country's expanding semiconductor eco-system including chip design, fabrication, assembly, testing, packaging and research activities;
- (b) the details of programmes launched under the India Semiconductor Mission and related initiatives for training students, researchers and professionals in semiconductor technologies, electronic design automation tools and advanced chip-design capabilities;
- (c) the progress achieved in expanding semiconductor education and training across universities, engineering institutions and centres of excellence along with the participation of industry partners in these efforts;
- (d) the role of semiconductor talent-development initiatives in supporting approved semiconductor manufacturing units, design ecosystems, deep-tech innovation and indigenous technology capabilities; and
- (e) the efforts made by the Government to address projected global shortages of semiconductor professionals and establish the country as a leading destination for semiconductor manufacturing, design and innovation including participation of Tamil Nadu in the semiconductor ecosystem?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a) to (e): India has adopted a multi-pronged roadmap to build a robust semiconductor talent pipeline as a part of Semicon India Programme, more recently, Semicon 2.0. The objective is to create a workforce capable of supporting the entire semiconductor value chain from chip design and fabrication to assembly, testing, marking and packaging (ATMP).

Curriculum Development and Infrastructure Provisioning:

One of the important focus of the government has been to integrate semiconductor education curriculum in engineering institutes and colleges. To advance this government has taken following initiatives:

- i. Government launched Chips to Startup (C2S) programme to provide industry ready manpower in chip design. Under this programme, access to cutting-edge chip design tools has been provided at no cost. The State-wise list of organizations supported for EDA tools by the ChipIN Centre under C2S Programme is at

https://c2s.gov.in/EDA_Tool_Support.jsp. So far, the usage of these chip design tools has exceeded 240 lakh hours. So far, ~68,000 persons have been trained and 175 designs taped out from SCL Mohali. The list of organizations supported under C2S Programme in the state of Tamil Nadu is at **Annex-I**.

- ii. A Skilled Manpower Advanced Research and Training (SMART) Lab has been setup in NIELIT Calicut with an aim to train 1 lakh engineers in the domains of VLSI, Embedded Systems and IoT. More than 1 lakh candidates have already been trained
- iii. A Committee was constituted with the representatives from Semiconductor Industry, Academia and Government to develop a roadmap and set goals and target for "India as a Semiconductor Talent Nation". The "Semicon India Future Skills Talent Committee Report" was submitted by the Committee. Based on the committee report and recommendation of MeitY, All India Council for Technical Education (AICTE) has launched the new curriculum for UG, Diploma, Minor Degree in Semiconductor domain, as a step towards creation of Talent pool in Semiconductor domain.

Semiconductor fabrication and ATMP Skilling:

Similarly in the area of semiconductor fabrication and ATPM/OSAT, the government has taken following initiatives to build the talent pipeline in semiconductor manufacturing:

- i. The project titled "Setting up of Semiconductor Assembly & ESD Training Laboratory at NIELIT Guwahati", has been approved by MeitY. The project aims to establish a state-of-the-art Semiconductor Assembly, Testing, Marking and Packaging (ATMP) training facility to support the growing semiconductor manufacturing ecosystem, particularly the upcoming semiconductor manufacturing initiatives in the North Eastern Region.
- ii. ISM has also partnered with Lam Research for conducting a large-scale training programme in nanofabrication and process-engineering skills. These would further augment skilled workforce for ATMP and advanced packaging. The program aims to generate 60,000 trained manpower in 10 years.

Industry partnerships:

The Government has also partnered with the industry for upgradation of skills in semiconductor technologies to provide industry grade skills. These include:

- i. Under the FutureSkills PRIME programme, implemented by MeitY in partnership with NASSCOM, online courses are offered for skilling, reskilling and upskilling in emerging technologies including semiconductors. Portal can be accessed at <https://futureskillsprime.in>, anytime-anywhere to earn skill certificates in line with their aptitude and aspirations.
- ii. MoU between ISM and NAMTECH: This MoU aims to build India's semiconductor workforce pipeline by training approximately 5,000 professionals over the next five years. MoU involves developing structured certification programs jointly endorsed by ISM to ensure national and international recognition; facilitating faculty exchange and global collaboration through ISM-linked partners; creating student internship and apprenticeship opportunities across ISM-supported fabs, ATMPs, OSATs, and design houses.
- iii. MoU with IBM: Establishes a semiconductor research centre in India, focusing on R&D, IP sharing, chip prototyping, and innovation across advanced semiconductor technologies.

International Partnerships:

India Semiconductor Mission (ISM) has also partnered with a few international universities for talent development. These include:

- i. MoU between India Semiconductor Mission (ISM) and Purdue University, USA: Aims to establish Purdue University as a flagship academic partner and collaborator with ISM and Government of India for skilled workforce development and joint R&D in the broad field of semiconductors and microelectronics.
- ii. MoU between ISM and Arizona State University: Supports India's semiconductor and microelectronics ecosystem via academic exchange, joint research, and institutional partnerships contributing to workforce development.

Semicon 2.0:

To address the Semiconductor needs of the country and the world, the Union Cabinet has approved Semicon2.0 on 15.07.2026 with an outlay of ₹1.275 lakh crore. Semicon2.0 has dedicated pillars for research and development for advanced technologies and also for talent development for design and manufacturing.

Annex-I

List of universities supported under C2S Programme in the state of Tamil Nadu

S. No.	Institute	Location
1.	Dr. Mahalingam College of Engineering and Technology, Coimbatore	Coimbatore
2.	SNS College of Technology, Coimbatore	Coimbatore
3.	National Institute of Technology Tiruchirappalli	Tiruchirappalli
4.	Indian Institute of Information Technology Tiruchirappalli	Tiruchirappalli
5.	Anna University Regional Campus Coimbatore	Coimbatore
6.	Mohamed Sathak Engineering College, Ramanathapuram	Ramanathapuram
7.	Karunya Institute of Technology and Sciences, Coimbatore	Coimbatore
8.	St. Xaviers Catholic College of Engineering, Kanya Kumari	Kanniyakumari
9.	College of Engineering Guindy, Anna University, Chennai	Chennai
10.	Indian Institute of Information Technology Design and Manufacturing Kancheepuram	Chengalpattu
11.	Indian Institute of Technology Madras	Chennai
12.	PSG College of Technology, Coimbatore	Coimbatore
13.	Vellore Institute of Technology (VIT), Vellore	Vellore
14.	Crescent Institute of Science & Technology, Chennai	Chengalpattu
15.	Vellore Institute of Technology (VIT), Chennai	Chengalpattu
16.	Madras Institute of Technology	Chengalpattu
17.	Kongu Engineering College, Perundurai, Tamil Nadu	Erode
18.	SASTRA Deemed University, Tamilnadu	Thanjavur
19.	SRM Institute of Science and Technology, Kattankulathur	Chengalpattu
20.	R.M.K College of Engineering and Technology, Tiruvallur	Tiruvallur
21.	Kalasalingam Academy of Research & Education, Tamilnadu	Virudhunagar
22.	Mohamed Sathak A J College of Engineering, Chennai	Chengalpattu
23.	SSN College of Engineering, Kalavakkam	Chengalpattu

24.	Easwari Engineering College, Chennai	Chennai
25.	Vel Tech, Chennai	Thiruvallur
26.	RMK Engineering College, Kavaraipettai	Thiruvallur
27.	SRM TRP Engineering College, Trichy	Tiruchirappalli
28.	Sri Eshwar College of Engineering, Coimbatore	Coimbatore
29.	SRM Institute of Science & Technology, Tiruchirappalli	Tiruchirappalli
30.	National Institute of Electronics and Information Technology Chennai	Chennai
31.	SRM Institute of Science & Technology, Chennai	Chennai
32.	Sri Sairam Engineering College, Chennai	Chengalpattu
33.	Chennai Institute of Technology, Chennai	Chengalpattu
34.	Thiagarajar College of Engineering, Madurai	Madurai
35.	J.N.N Institute of Engineering, Chennai	Tiruvallur
36.	Arunachala College of Engineering For Women, TamilNadu	Kanniyakumari
37.	Government College of Technology, Coimbatore	Coimbatore
38.	Sri Shakthi Institute of Engineering and Technology, Coimbatore	Coimbatore
39.	P.S.R. Engineering College, Sivakasi	Virudhunagar
40.	Rajalakshmi Engineering College, Thandalam, Chennai	Kancheepuram
41.	Rajalakshmi Institute of Technology, Chennai	Chennai
42.	Sona College of Technology, Salem	Salem
43.	Hindusthan College of Engineering and Technology, Coimbatore	Coimbatore
44.	K.S.Rangasamy College of Technology (Autonomous), Namakkal, Tamil Nadu	Namakkal
45.	Government College of Engineering, Erode	Erode
46.	Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore	Coimbatore
47.	PSG Institute of Technology and Applied Research, Coimbatore, Tamil Nadu	Coimbatore
48.	R.M.D. Engineering College, Kavaraipettai	Thiruvallur
49.	Saveetha Engineering College (Autonomous), Kancheepuram	Chengalpattu
50.	Coimbatore Institute of Engineering and Technology, Coimbatore	Coimbatore
51.	Karpagam Institute of Technology, Coimbatore	Coimbatore
52.	Karpagam College of Engineering (Autonomous), Coimbatore	Coimbatore
53.	Sri Venkateswara College of Engineering, Tamil Nadu	Chengalpattu
54.	Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Chennai	Thiruvallur
55.	St. Joseph's College of Engineering, Chennai	Chengalpattu
56.	Kamaraj College of Engineering and Technology, Madurai	Madurai
57.	Kumaraguru College of Technology, Coimbatore	Coimbatore
58.	Dhirajlal Gandhi College of Technology (Autonomous), Salem	Salem
59.	Velammal Institute of Technology, Thiruvallur	Thiruvallur
60.	Bannari Amman Institute of Technology, Erode, Tamil Nadu	Erode
61.	KIT-Kalaigarkarunanidhi Institute of Technology, Coimbatore	Coimbatore
