



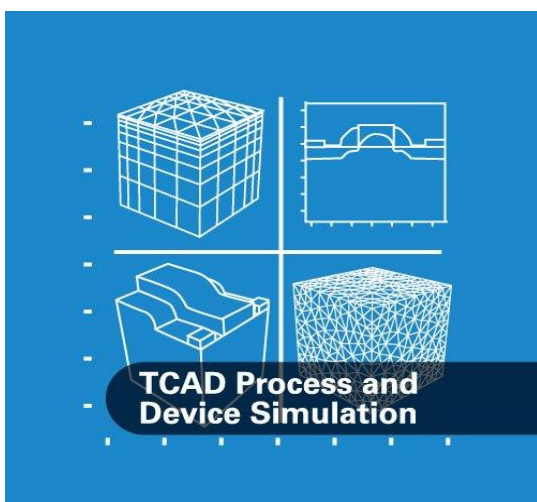
INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

A REPORT ON

A SEMINAR ON TCAD ATLAS SILVACO TOOL FOR SEMICONDUCTOR DEVICE SIMULATION

Silvaco, Inc. is a global provider of **Technology Computer-Aided Design (TCAD)**, **Electronic Design Automation (EDA)** software, and **Intellectual Property (IP)** for the design and simulation of semiconductor devices and circuits. Founded in 1984, Silvaco serves industries such as semiconductors, electronics, photonics, and more. Its tools are widely used in both academia and industry for developing, analyzing, and optimizing semiconductor devices and integrated circuits. Silvaco's tools are extensively used for research, development, and production in industries like automotive electronics, telecommunications, defense, aerospace, and medical devices. The company's software helps companies to reduce the cost and time of bringing semiconductor products to market.



The seminar focused on **TCAD ATLAS**, a widely used simulation tool from **Silvaco** for semiconductor device modeling. TCAD (Technology Computer-Aided Design) tools are essential for analyzing and predicting the electrical, optical, and thermal behaviors of semiconductor devices before their physical fabrication. The **ATLAS tool** enables the simulation of both 2D and 3D semiconductor devices, aiding in the development and optimization of complex semiconductor structures such as MOSFETs, LEDs, photodiodes, and other microelectronics.

On September 5th, 2024, on the occasion of Teacher's Day, the Institute of Engineering and Technology conducted a seminar on TCAD ATLAS SILVACO tool for semiconductor device simulation under the umbrella of IEEE student chapter. The event was held in offline mode. Er. Pallavi Pant, Chair IEEE student branch, welcomed all distinguished guests, providing an overview of the day and explaining the purpose of the gathering. Prof. Subodh Wariya, Head of the Department of ECD, also welcomed all students. Director Professor Vineet Kansal, along with Prof. Subodh Wariya and Prof. Neelam Srivastava, participated in the event.

During the seminar, our keynote speaker, Er. Sheetal Singh, Secretary of IEEE, delivered an exceptional and insightful seminar on the **TCAD ATLAS Silvaco Tool for Semiconductor Device Simulation** under the banner of the IEEE

Student Chapter. With her deep technical expertise and engaging presentation style, she effectively conveyed the importance of TCAD tools in modern semiconductor device design and development. She walked the audience through the core functionalities of the ATLAS tool, highlighting its application in simulating electrical, optical, and thermal characteristics of advanced semiconductor devices. Her detailed explanation of real-world use cases and practical demonstrations made the session highly informative and interactive, leaving participants with a thorough understanding of the tool's capabilities. The seminar was a resounding success, thanks to her clarity, depth of knowledge, and the seamless connection she established with the audience.

Er. Rahul Singh, Treasurer, IET IEEE Student Branch, enlightened the students about the IEEE Student Branch and how it plays a vital role in fostering technical, professional, and personal growth among students in the fields of electrical, electronics, computer science, and related disciplines.

The seminar concluded with an interactive Q&A session where students asked about the following topics:

- Integration with Other Tools: ATLAS can be integrated with SPICE and Verilog-A for circuit-level simulations.
- Training Resources: Available documentation, online courses, and technical support offered by Silvaco.
- Licensing and Cost: Participants inquired about the different licensing models and associated costs.

Approximately 50 students and 15 faculty members, along with IEEE student branch representatives participated in the event. The event was coordinated by Er. Kirti Prakash Vice Chair IEEE. A vote of thanks was given by Er. Pallavi Pant, Chair IEEE student branch, thanking all the dignitaries and attendees present.

EVENT SCHEDULE (05.09.2024)

S.No.	SCHEDULE OF EVENTS	Time
1.	Welcome by Er. by Pallavi Pant, Chair, IET IEEE Student Branch	11:00-11:03AM
2.	Welcome address by Prof. Subodh Wariya, HOD,ECD	11:03-11:08AM
3.	Lamp Lightning and Saraswati Vandana	11:08-11:10AM
4.	Event Highlights by Dr. Neelam Srivastava, Branch Counselor,IET IEEE Student Branch	11:10-11:15AM
5.	Address by Prof. Vineet Kansal, Director I.E.T	11:15-11:20AM
7.	About IEEE student branch by Er. Rahul Singh, Treasurer,IET IEEE Student Branch	11:20-11:35AM
8.	Keynote address by Er. Sheetal Singh, Secretary of IEEE	11:35-1:00PM
14.	Q&A session	1:00-1:20PM
15.	Vote of Thanks by Pallavi Pant, Chair, IET IEEE Student Branch	1:20-1:25PM

SOME PICTUIRES OF THE EVENT

