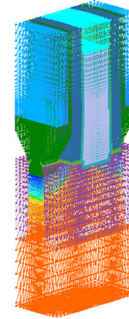


ASU-Silvaco Device TCAD Hybrid Workshop: From Fundamentals to Applications

This workshop is a fast-paced, one-day program led by Prof. Dragica Vasileska and Prof. Stephen M. Goodnick. Spend the morning grounding yourself in semiconductor physics and transport, then transition in the afternoon to instructor-led, hands-on Silvaco TCAD labs (e.g., MOS Capacitors, MOSFETs, SOI Devices, FinFETs).

The workshop is offered in a hybrid format. Participants have the option to join on site but also to tune in via zoom.

Attendees will learn to use Silvaco TCAD effectively and know how to select the appropriate physical models and material parameters for their devices. Whether you are an industry professional or student, you will leave with a practical grasp of semiconductor physics and the skills to use Silvaco TCAD effectively and efficiently. Complimentary lunch will be served, followed by a Silvaco overview and Digital Twin session from Silvaco's VP of Worldwide Field Applications Engineering, Garrett Schlenvogt.



Speakers



Prof. Dragica Vasileska

Professor, School of Electrical,
Computer and Energy Engineering
- Arizona State University



Prof. Stephen Goodnick

David and Darleen Ferry Professor of
Electrical Engineering, School of Electrical,
Computer and Energy Engineering
- Arizona State University



Garrett Schlenvogt

Vice President of Worldwide Field
Applications Engineering
- Silvaco, Inc.

Agenda

Morning Sessions

9:30AM - 9:45AM	Welcome Remarks - Prof. Dragica Vasileska and Garrett Schlenvogt
9:45AM - 10:45AM	Introduction to Computational Electronics and TCAD - Prof. Stephen Goodnick • Device Technology Trends • Challenges of Continued Si Technology Scaling • Need for Computational Electronics • Overview of Device Simulation
10:45AM - 11:15AM	BREAK
11:15AM - 12:30PM	Transport Modeling - Prof. Stephen Goodnick • Hierarchy of Electronic and Thermal Transport Models • Quantum Transport Approaches • Semiclassical Modeling: Drift Diffusion, Hydrodynamic, Monte Carlo Simulation • Thermal Transport Modeling
12:30PM - 1:30PM	LUNCH

Afternoon Session

1:30PM - 2:30PM	Silvaco TCAD Overview & Digital Twin Intro - Garrett Schlenvogt
2:30PM - 3:30PM	Introduction to Victory Device and Victory Visual - Prof. Dragica Vasileska • Victory Device Syntax • Silicon-based Devices Modeling - Mobility and Generation-recombination Models - Invoking Relevant Transport Models • Introduction of GIGA3D for Modeling of Self-Heating
3:30PM - 4:00PM	BREAK
4:00PM - 5:15PM	Hands-on Activities - Prof. Dragica Vasileska, Siddhant Gangwal and Izak Baranowski • MOSFET - DIBL and Threshold Voltage Roll-off - Generating Output Characteristics - Classical vs. Quantum-corrected Transfer Device Characteristics: Threshold Voltage Shifts • SOI Device - Single Gate vs. Dual Gate Devices - Self-heating Effects in SOI Devices • FinFETs Modeling
5:15PM - 5:30PM	Summary
5:30PM	Adjourn

When: January 16, 2026

Time: 9:30am-5:30pm

Where: ASU Tempe Campus
Old Main Building
400 East Tyler Mall
Second Floor
Tempe, AZ, 85287

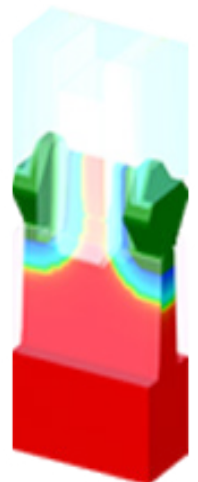
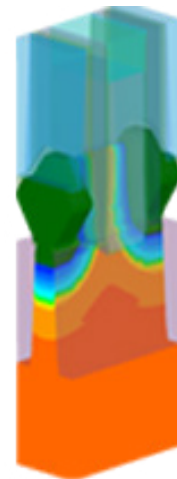


Scan to Register

<https://go.silvaco.com/ASU-Workshop2025>

Corporate or Educational
Email Address Required

**Seating is limited so
register soon.**



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