

Thin Films and Plasma for Future Microelectronics

2023 AVS Michigan Chapter Spring Symposium

[AVS Michigan Chapter](#)

Co-Sponsored by

AVS MI Chapter

Lurie Nanofabrication Facility (LNF)

Michigan Institute for Plasma Science and Engineering (MIPSE)

Program & Registration Information



www.avs.org

Wednesday, June 7th, 2023
North Campus Research Complex
Ann Arbor, MI

Symposium Objective

This symposium will bring together experts from academia, research and industry to facilitate discussions on the future of US semiconductor ecosystem with emphasis on midwestern and Michigan infrastructure, economy and education. We invite and welcome participants across all disciplines, backgrounds, education levels and institutions who might be interested in the future of the semiconductors.

Meeting Schedule

- 8:00 Registration and Breakfast
8:40 Opening Remarks, Sergey Baryshev

Session I: Future Microelectronics

- Chair: Sergey Baryshev, Michigan State University
8:50 (Plenary) Michael Shur, RPI, “*Terahertz Nanoplasmonics Technology: Physics, Applications, and Commercialization*”
9:30 Gozde Tutuncuoglu, Wayne State University “*Engineering Pulsed Laser Deposited Tantalum Oxide Films for Memristor Devices*”
10:00 Abbas Semnani, University of Toledo “*Reconfigurable Plasma Electronics: Principles and Applications*”
10:30 Coffee Break

Session II: Thin Films Synthesis and Diagnostics

- Chair: Gregory DeMaggio, k-Space
10:50 Rachel Goldman, University of Michigan, “*Tailoring semiconductor polytype selection during molecular-beam epitaxy*”
11:20 Bob Sacks, MACOM “*Molecular Beam Epitaxy at MACOM*”
11:50 Mathias Muehle, Fraunhofer CMW “*Using image based artificial intelligence growth prediction to improve SCD wafer dimensions and growth yield*”
12:20 Lunch Break

Session III: CHIPS Act and its Impact on Education

- Chair: Sandrine Martin, LNF
2:20 (Plenary) Rebecca Peterson, University of Michigan “*The Role of Academic Nanofabrication Facilities in Growing the Semiconductor Ecosystem*”
3:00 Timothy Hogan, Michigan State University “*Workforce Development Efforts to Help Address Critical Shortages in Engineering*”
3:30 Mark Kushner, University of Michigan “*Challenges in High Aspect Ratio Plasma Etching*”
4:00 Coffee Break

Session IV: CHIPS Act and its Footprint in Michigan

- Chair: David Laleyan, NS Nanotech
4:20 (Plenary) John Verboncoeur, Michigan State University, “*CHIPS Act and its Relations to the Infrastructure and Economy in Midwest and MI in Particular*”
5:00 Vijay Ramachandran, KLA, “*Semiconductor Industry Roadmap and KLA’s Place in it*”
5:30 Matt Stevenson, NS Nanotech, “*Nanowire LEDs and Lasers for CHIPS Act Optical Interconnect*”
6:00 Hors D’Oeuvres/Poster Session/Industry Show
7:45 Student Poster Awards
8:00 Symposium Ends

Registration: Please go the [link](#)

Location:

The symposium will take place in G201 Dining Hall of the North Campus Research Complex, Building 18, 2800 Plymouth Rd, Ann Arbor, MI, 48105

Parking:

Park for free at The Park & Ride Lot located on Green Road south of the Plymouth Road intersection, within one mile from the facility. The intercampus bus will transport you to and from this location. It runs every 20 minutes, starting Green Rd from 6:25 a.m.

Student Poster Session:

The symposium includes a poster session pertaining to topics of interest to the AVS, namely science and technology of materials, surfaces, plasmas, interfaces, processing and vacuum science and technology. A cash prize of \$500, \$300 and \$200 will be awarded to the selected posters. Interested students should submit an abstract of less than 200 words to Sergey Baryshev (serbar@msu.edu) by Wednesday, May 31st. Please put “AVS Poster Abstract” as the subject of email.

Equipment Exhibit:

As part of the symposium, an equipment exhibit will be held to display analytical and processing equipment of interest to attendees of the meeting. The exhibit will be open to all symposium attendees during the entire day. The contact for exhibit logistic is Pilar Herrera- Fierro (pilarhf@umich.edu).

LNF Introduction to Semiconductor Fabrication Technology Hands-on Workshop

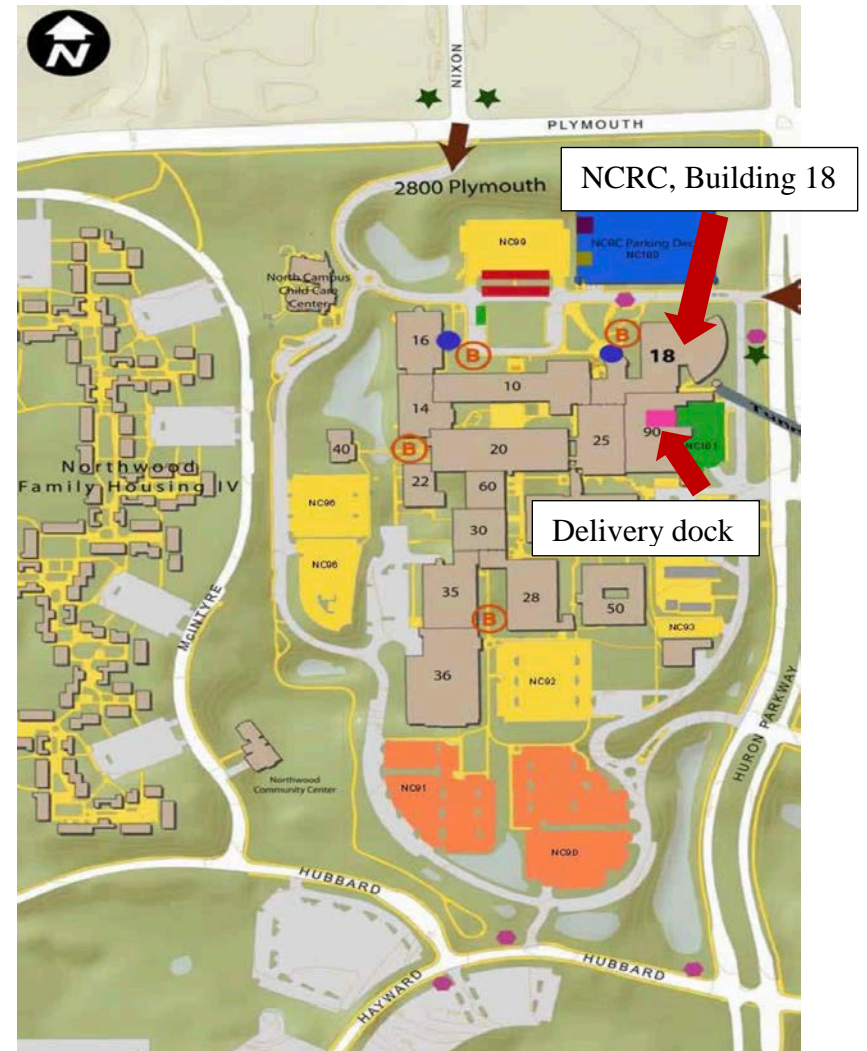
The Lurie Nanofabrication Facility (LNF) at the University of Michigan is having a hands-on workshop on Semiconductor Fabrication Technologies the day after the Symposium, on Thursday June 8, 2023 from 8 AM to 5 PM at the LNF. This workshop is intended for people with limited exposure to clean rooms and semiconductor processing and will provide hands-on experiences inside the cleanroom, tours of the cleanroom and its infrastructure, and an overview of the LNF’s capabilities and operations. Register online at LNF.engin.umich.edu

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Organizing Committee:

Pilar Herrera-Fierro, David Laleyan, Shannon Nicley, Tugba Piskin
Symposium Chair: Sergey Baryshev