

Second Annual Birck Research Symposium

The Birck Symposium is a student driven conference to showcase cutting-edge nanotechnology research conducted at Purdue, with a particular focus on semiconductor advancements and the facilities available at Birck Nanotechnology Center.

Friday



Apr 19th



09:00AM – 09:15AM
Opening Speech at MRGN 121

Prof. Mark Lundstrom



09:15AM – 12:00PM
Student Presentations at MRGN 121

Break time **10:35AM – 10:50AM**

12:00PM – 1:00PM

Keynote Speech at MRGN 121

**Prof. Alan Seabaugh,
University of Notre Dame**

**“Reimagining Chips
and Semiconductors”**



1:00PM – 1:45PM

Lunch at MRGN Cafeteria

Free lunch for **ALL REGISTERED** attendees

1:45PM – 3:15PM

Student Presentations MRGN 121

3:15PM – 4:30PM

Poster Session at BRK Atrium



Presentation Schedule

09:15AM – 09:50AM

Towards Large Scale Integrated Quantum Photonics: Single Photon Emitters in SiN/SiO₂

Presenter: Samuel Peana

Advisor: Professor Vladimir Shalaev Dpt. ECE

09:50AM – 10:05AM

First Determination of Thermal Resistance and Thermal Capacitance of ALD In₂O₃ Transistors

Presenter: Jian-Yu Lin

Advisor: Professor Peide Ye Dpt. ECE

10:05AM – 10:20AM

Enhancement of In₂O₃ Field-Effect Mobility Up To 152 cm²/VS Using HZO-Based Higher-k Linear Dielectric

Presenter: Zehao Lin

Advisor: Professor Peide Ye Dpt. ECE

10:20AM – 10:35AM

Deep UV Photo Emission Electron Microscopy (DUV-PEEM) to Spatially Probe Work Function in Oxygen Vacancy Reduced Hf_xZr_(1-x)O₂ (HZO)

Presenter: Fernando Vega

Advisor: Professor Thomas Beechem Dpt. ME

10:35AM – 10:50AM

Break Time

10:50AM – 11:05AM

Electrodeposition of Mid-Entropy Solid Solution Alloy for Hydrogen Evolution Reaction

Presenter: Saptarshi Paul

Advisor: Professor Jeffrey Dick Dpt. CHEM

11:05AM – 11:20AM

Mechanistic insights into solid electrolyte interphase (SEI) attributes and interfacial stability in sodium metal batteries

Presenter: Aaditya Singla

Advisor: Professor Partha Mukherjee Dpt. ME

11:20AM – 11:35AM

Superradiant and subradiant states in lifetime-limited organic molecules through laser-induced tuning

Presenter: Christian Lange

Advisor: Professor Jon Hood Dpt. CHEM

11:35AM – 11:50AM

Low damping ferromagnetic Co_{1-x}Fe_x thin films for applications in magnonics

Presenter: Samanvaya Singh Gaur

Advisor: Professor Ernesto E. Marinero Dpt. MSE

01:45PM – 02:20PM

Leveraging Two-Photon Lithography for Direct Printing of Copper Micro Structures on Boiling Surfaces

Presenter: Bhaskarjyoti Sarma

Advisor: Professor Justin Wiebel Dpt. ME

02:20PM – 02:35PM

Statistical Process Control for Metallization and Photolithography in BNC

Presenter: Abdulloh Abdubaev

Advisor: Professor Zhihong Chen Dpt. ECE

02:35PM – 02:50PM

Deep Particle Diffusometry-v2: Improving Performance of Deep Learning-based Particle Diffusometry Algorithms by Optimizing their Training

Presenter: Pranshu Sardana

Advisor: Professor Steve Wereley Dpt. ME

02:50PM – 03:05PM

FEMTA - MEMS Microthruster for CubeSats

Presenter: Jesus Meza-Galvan

Advisor: Professor Alina Alexeenko Dpt. AAE

