Theses Awarded

S.B.

- **Katherine Lei** (P. ANIKEEVA)
  Functionalization Platform of Magnetic Nano Materials through Silica Shell Formation
- **Nikita Romanov** (R. HAN)
  Edge-Radiating CMOS Sub-THz Phased Array

S.M.

- **Henry Andersen** (J. LANG)
  Modeling, Manufacturing, and Experimental Validation of an Electric Machine for Aircraft Propulsion
- **H. Azzouz** (D. ENGLUND)
  Second Harmonic Generation in Silicon Photonic Crystal Resonator for Quantum Optic Applications
- **Adina Bechhofer** (L. DANIEL)
  Geometrical Optimization of Planar Nano Vacuum Channel Transistors
- **Mercer Boris** (L. DANIEL)
  AI in the Cath Lab: Implications of Clinical AI-Enabled Assistance for Intravascular Ultrasound Procedures
- **Honghao Cao** (S. YOU)
  Adaptive Fiber Source for Label-free Nonlinear Microscopy
- **Jakie Chen** (L. DANIEL)
  Clustering of Similar Incident Tickets Using Natural Language Processing
- **S. Corsetti** (J. NOTAROS)
  Visible-Light Integrated Photonics for 3D-Printing and Trapped-Ion Systems
- **Marc Davis** (D. ENGLUND)
  Numerical Synthesis of Arbitrary Multi-qubit Unitaries with Low T-count
- **Connor Gerlach** (S. YOU)
  Non-diffracting Beam for Microscopy
- **Isaac Harris** (D. ENGLUND)
  Hyperfine Interactions of the Group IV Color Centers
- **A. Hattori** (J. NOTAROS)
  Integrated-Photonics Devices and Architectures for Advanced Cooling of Trapped Ions
- **Lauren Heintz** (L. DANIEL)
  Scenario Analysis of Profitability of New Offerings under Different Business Contract Models
- **Jung-Han (Sharon) Hsia** (T. PALACIOS)
  Optically Controlled Vertical GaN finFET for Power Applications
- **Steven Hubbard** (D. BONING)
  Empowering Delivery Service Partners: A Study on Leveraging Generative Artificial Intelligence and Text Clustering to Support External Partners
- **Ryan Kochert** (D. BONING)
  Process Digitalization: 3D Deep Learning in Manufacturing Applications
- **Mingyuan Li** (D. BONING)
  Cost Analysis and Process Optimization of Electrochemical Micromachining for Volume Manufacturing
- **Kunzan Liu** (S. YOU)
  Deep and Dynamic Metabolic Imaging
- **Andrew Mighty** (L. DANIEL)
  Autonomous Drone Assisted Aircraft Inspections
- **Mikala N. Molina** (L. DANIEL)
  Autonomous Surface Vehicles
- **Ololade Olaleye** (D. BONING)
  Machine Learning and Stochastic Simulation for Inventory Management
- **Rachel Owens** (D. BONING)
  Dynamic Time Warping Constraints for Semiconductor Processing
- **Sarah Spector** (F. NIROUI)
  Nonplanar Nanofabrication via Interface Engineering
- **Grace Tang** (J. LANG)
  Designing an Efficient Power/Control System for a Network of Piezoelectric Speakers
- **Heather L. Willis** (L. DANIEL)
  Analysis of Data from the U.S. Shipbuilding Industry and Application to Improve Performance Metrics
- **Zi Yu Fisher Xue** (V. SZE)
  Accelerating Sparse Tensor Algebra by Overbooking Buffer Occupancy
- **Pradyot Yadav** (T. PALACIOS)
  Design/System Technology Co-optimization of Gallium Nitride High Electron Mobility Transistors for Next-G 3DIC Heterogeneous Integration of Gallium Nitride and Si CMOS
- **Sameia Zaman** (W. OLIVER)
  Kinetic Inductance Characterization of Thin 2H-NbSe2 Superconductor Using Circuit Quantum Electrodynamics

M. ENG

- **Cole Brabec** (D. ENGLUND)
  Fast Phase Retrieval: A Robust and Efficient Multidimensional Phase Retrieval Algorithm

M. ENG. (CONTINUED)

- **Sophia Cheung** (D. BONING)
  Machine Learning Methods for Automated Macro-Inspection and Improved Defect Identification in Semiconductor Manufacturing
- **Matthew Cox** (R. HAN)
  Study on Large-Language-Model Assisted Analog Circuit Design
- **Marc Davis** (D. ENGLUND)
  Numerical Synthesis of Arbitrary Multi-qubit Unitaries with Low T-count
- **Andrew Feldman** (V. SZE)
  Microarchitecture Categorization and Pre-RTL Analytical Modeling for Sparse Tensor Accelerators
- **Raiphy Jerez** (S. CODAY)
  Novel Topologies for Capacitively Isolated Switched Capacitor Converters
- **Monica Liu** (H.-S. LEE)
  Fully Differential Programmable Gain Chiplet for Integrated Data Acquisition Systems
- **Thomas Ngô** (L. DANIEL)
  Application of Multi-Objective Genetic Optimization in PCB Component Placement
- **Elian Malkin** (P. ANIKEEVA)
  Minimally Invasive Neuromodulation Using Mechanically-sensitive Ion Channels and Magnetically-actuated Nanotransducers
- **Jonathan Sampson** (D. BONING)
  Improving Macroscale Defect Detection in Semiconductor Manufacturing using Automated Inspection with Convolutional Neural Networks
- **Alex Studer** (V. SZE)
  Extensible Real-Time Sensor and Test Interface for a System-on-Chip
- **Jade Sund** (S. CODAY)
  A Hybrid Switched-Capacitor Converter for Capacitive Wireless Power Transfer in Biomedical Applications
- **John Waterworth** (D. BONING)
  Deep Transfer Learning for Macroscale Defect Detection in Semiconductor Manufacturing
- **Adrianna Wojtyna** (V. SZE)
  Energy-Efficient Real-Time Hardware Acceleration for Gaussian Fitting

PH.D.

- **Saumil Bandopadhay** (D. ENGLUND)
  Accelerating artificial intelligence with programmable silicon photonics
- **Liane Bernstein** (D. ENGLUND)
  Large-Scale Optical Hardware for Neural Network Inference Acceleration
- **Kevin Chen** (D. ENGLUND)
  Protocols and Devices for Scalable Spin-Photon Quantum Networks
- **Ronald David** (D. ENGLUND)
  Combining RF Photonics and RF Machine Learning to Enable New Communications Architectures
- **Leon Ding** (W. OLIVER)
  Novel Gates with Superconducting Fluxonium Qubits
- **Justin Hou** (L. LIU)
  Hybridized Magnonics in Antiferromagnets and Cavity Spintonic Devices
- **Zhongqiang Hu** (L. LIU)
  Interactive Spin Dynamics in Magnon and Quantum Spin System
- **Amir Karamlou** (W. OLIVER)
  Quantum Simulation of Many-body Systems with Superconducting Qubits
- **Taekyong Kim** (J. DEL ALAMO)
  Switching Dynamics in Ferroelectric $Hf_{0.5}Zr_{0.5}O_2$ Devices: Experiments and Models
- **Ching-Yun (Irene) Ko** (L. DANIEL)
  Robustness of Machine Learning Models
- **Florian Koehler** (P. ANIKEEVA)
  Magnetic Tools for Neural Interfacing
- **Yixi Liu** (E. BOYDEN)
  Toward Ultra-Resolution Biomolecular Mapping in Cells with Expansion Microscopy
- **Yunpeng Liu** (J. KIM)
- **Yiyue (Alyssa) Luo** (T. PALACIOS)
  Intelligent Textiles for Physical Interactions
- **Alex Miller** (S. MANALIS)
  A blood exchange method to study circulation kinetics of tumor cells in the blood
- **Atharva Sahasrabudhe** (P. ANIKEEVA)
  Multifunctional Wireless Gut-brain Neurotechnology
- **Jose E. Cruz Serralles** (L. DANIEL)
  Integral Equation-Based Inverse Scattering and Coil Optimization in Magnetic Resonance Imaging
- **Pao-Chuan Shih** (T. PALACIOS)
  Vacuum Transistors Based on III-Nitrides Self-Aligned-Gate Field Emitter Arrays
- **Anu Sinha** (E. BOYDEN)
  Spatially Precise in Situ Transcriptomics in Intact Biological Systems
- **Michael Skuhersky** (E. BOYDEN)
  An Integrated Approach for Caenorhabditis elegans Nervous System Simulation
- **Alexander Sludds** (D. ENGLUND)
  Delocalized Photonic Deep learning on the Internet's edge