

Theses Awarded

S.M.

- **Christian Allinson** (D. BONING/ S. SPEAR)
Enabling Proactive Quality in Commercial Airplanes using Natural Language Processing
- **Samuel Cruz** (J. KIM)
Mechanism of Remote Epitaxy Using Two Dimensional Materials
- **Farri Gaba** (D. BONING/M. WINKENBACH)
Solutions to the Generalized UAV Delivery Routing Problem for Last-Mile Delivery with Societal Constraints
- **Jack Gammack** (S.-G. KIM)
Design Knowledge Base Using Natural Language Processing
- **Elizabeth Hau** (L. DANIEL)
Digital Thread and Analytics Model to Improve Quality Controls in Surgical Stapler
- **Anjali Krishnamachar** (L. DANIEL)
Fullment Simulation and Inventory Location Optimization
- **Hunjo Kim** (J. LANG)
Development of Industrial Internet of Things Architecture and Business Strategy for Digital Substation Asset Management
- **Christopher Lui** (D. BONING/R. WELSCH)
An Investigation of Multivariate Process Control for Biomanufacturing
- **Colin Poler** (D. BONING/N. REPENNING)
Improving Operational Efficiency of a Small Manufacturing Maintenance Organization
- **Tareq Saqr** (J. LANG)
Deep Unsupervised Anomaly Detection Applied to Motor-Driven Blowers
- **Andrew Tindall** (D. BONING/ R. WELSCH)
Analytics to Make Hybrid Work, Work
- **John Zhang** (J. LANG)
An Intracochlear Hydrophone and Amplifier

M. ENG

- **Jaeyoung Jung** (A. CHANDRAKASAN)
Low-Power Communication Circuits for Net-Zero-Energy IoT Nodes
- **Joshua J. Piel** (D. PERREAULT)
Closed-Loop Control for a Piezoelectric-Resonator-Based DC-DC Power Converter
- **Tanya Smith** (D. BONING)
Data Driven Surrogate Models for Faster SPICE Simulation of Power Supply Circuits

- **Fan-Keng Sun** (D. BONING)
Adjusting for Autocorrelated Errors in Neural Networks for Time Series
- **Peter Tran** (D. BONING)
Automated Visual Inspection of Lyophilized Products via Deep Learning and Autoencoders
- **Babu Wanyeki** (D. PERREAULT)
A Two-Stage Piezoelectric Resonator and Switched-Capacitor DC-DC Converter

S.B.

- **Ceylan Caylan** (S.-G. KIM)
Application of Natural Language Processing to Unstructured Data: A Case Study of Climate Change

PH.D.

- **Haluk Akay** (S.-G. KIM)
Representing Knowledge for Data-Driven Design
- **Marc-Joseph Antonini** (P. ANIKEEVA)
Customizing Multifunctional Bidirectional Neural Interfaces Through Fiber Drawing
- **Ashley Beckwith** (L. VELASQUEZ-GARCIA)
Rethinking Plant-Based Materials Production: Selective Growth of Tunable Materials Using Cell Culture Techniques
- **Chanyeol Choi** (J.KIM)
Memristor-based AI Hardware for Reliable and Reconfigurable Neuromorphic Computing
- **Sally El-Henawy** (D.BONING)
Statistical Modeling of the Effects of Process Variations on Silicon Photonics
- **Taylor Facen** (L. DANIEL)
How Enhanced Data Availability Affects Multi-Channel Marketing Attribution
- **Henri-Louis Girard** (K. VARANASI)
Interaction at Interfaces Across Scales: from Adsorption to Adhesion
- **Jiahao Han** (L. LIU)
Harnessing Magnetic Switching and Dynamics Using Electron and Magnon Spin Currents
- **Jinchi Han** (V. BULOVIC)
Active Micro-/Nano-Structures for Electromechanical Actuation
- **Vishnu Jayaprakash** (K. VARANASI)
Engineering Physico-chemical Interactions Across Drug Delivery, Agriculture and Carbon Capture

PH.D. (CONTINUED)

- **Yunjo Kim** (J. KIM)
Interface Engineering for Exfoliation and Integration of Heteroepitaxial III-V Films
- **Yosef S. Kornbluth** (L. VELASQUEZ-GARCIA)
Microplasma-Enabled Sputtering of Nanostructured Materials for the Agile Manufacture of Electronic Components
- **Madeleine Reynolds Laitz** (V. BULOVIC)
Light-Matter Interactions in High-Efficiency Photovoltaics, Light-Emitting Devices, and Strongly Coupled Microcavities
- **Christopher Lang** (D. BONING)
Applications of Probabilistic Machine Learning Models to Semiconductor Fabrication
- **Sangho Lee** (J. KIM)
Nanoscale Engineering for Mixed-Dimensional Heterostructure Growth and Integration
- **Youngbin Lee** (P. ANIKEEVA)
Engineering Biomedical and Bioinspired Fiber Devices via Thermal Drawing
- **Xinhao Li** (N. FANG)
Disordered Optics for Multidimensional Information Processing
- **Sajjad Mohammadiyangjeh** (J. LANG)
Modeling, Design, Identification, Drive, and Control of a Rotary Actuator with Magnetic Restoration
- **Jimin Park** (P. ANIKEEVA)
Electrochemical and Magnetochemical Approaches for Neuronal Modulation
- **Melany Sponseller** (V. BULOVIC)
Stability of PbS Quantum Dot Solar Cells
- **Richard Swartwout** (V. BULOVIC)
Scalable Perovskite Thin-Film Photovoltaics
- **Georgios Varnavides** (P. ANIKEEVA / P. NARANG)
Electron Hydrodynamics in Crystalline Solids: Microscopic Origins, Mesoscopic Size Effects, and Macroscopic Observables