

Theses Awarded

S.M.

- **Maitreyi Ashok** (A. CHANDRAKASAN)
Hardware Security with Electromagnetic Side Channels
- **Kaustav Brahma** (A. CHANDRAKASAN)
Efficient CNNs and Energy Efficient SRAM Design for Ubiquitous Medical Devices
- **Ruicong Chen** (H.-S. LEE)
Activity-Scaling SAR with Direct Hybrid Encoding for Signed Expressions for AIoT Applications
- **Nicholas Klugman** (J. LANG)
Modeling and Design of Magnetic Flux Compression Generators
- **Kyungmi Lee** (A. CHANDRAKASAN)
Improved Methodology for Evaluating Adversarial Robustness in Deep Neural Networks
- **Rishabh Mittal** (A. CHANDRAKASAN)
A Sampling Jitter Tolerant Continuous-time Pipeline ADC
- **Vipasha Mittal** (A. CHANDRAKASAN/H.-S. LEE)
Design of a Bandgap-Less Temperature Sensor for Achieving High Untrimmed Accuracy
- **Yanjie Shao** (J. A. DEL ALAMO)
Design and Fabrication of III-V Broken-Band Vertical Nanowire Esaki Diodes
- **Elise Uyehara** (Q. HU)
Phase-locking Terahertz Quantum Cascade Lasers for High Dynamic Range Heterodyne Imaging
- **Drew Weninger** (A. M. AGARWAL)
Materials and Devices for Optoelectronic Packaging
- **Jongchan Woo** (A. CHANDRAKASAN)
Physical-Security for Wireless with Orbital Angular Momentum Wave
- **Fan Yang** (J. HU)
Achromatic and Wide Field-of-View Metalens Design
- **Pengxiang Zhang** (L. LIU)
Quantitative Study on Current Induced Effect in Antiferromagnet Insulator/Pt Bilayer
- **Wang Zhang** (L. DANIEL)
Modeling Internal Combustion Engine Three-Piece Oil Control Ring Cou-pling Reduced Order Oil Transport based on Neural Network
- **Benjamin Cary** (J. LANG)
Design of Surgically Viable Umbo Microphone For Implantable Assistive Hearing Devices
- **Gloria (Yu-Liang) Fang** (A. CHANDRAKASAN)
Instruction-Level Power Consumption Simulator for Modeling Simple Timing and Power Side Channels in a 32-bit RISC-V Micro-Processor
- **Katharina Gschwind** (S. HAN)
Model Compression and AutoML for Efficient Click-Through Rate Prediction
- **Keshav Gupta** (V. SZE/S. KARAMAN)
Efficient Computation of Map-scale Continuous Mutual Information on Chip in Real Time
- **Damien Martin** (D. BONING/J. LANG)
Fault Detection in Manufacturing Equipment Using Unsupervised Deep Learning
- **Brooke McGoldrick** (L. LIU)
Ising Machine Based on Electrically Coupled Spin Hall Oscillators
- **Haripriya Mehta** (A. CHANDRAKASAN)
Secure Inference of Quantized Neural Networks
- **Jeet Mohapatra** (L. DANIEL)
Neural Network Robustness: Se-mantic Perturbations and Random-ized Smoothing Costs
- **Phoebe Piercy** (J. LANG)
Low Power Circuits with Integrated Magnetics for Sensors and Energy Harvesting Systems
- **Joanna Sands** (A. CHANDRAKASAN)
Modular device for wireless optically controlled neuromodulation in free behaving models
- **Daniel Sheen** (J. LANG)
A UHF Multimode Array Feed for the Westford Radio Telescope

M. ENG.

- **Ebrahim Al Johany** (J. A. DEL ALAMO)
Surface Transfer Doping of Diamond for Power Electronics
- **Mohamed Abdelhamid** (A. CHANDRAKASAN)
Low Power Adaptive Wireless Circuits for the Internet of Things and In-body implants
- **Nicha Apichitsopa** (J.VOLDMAN)
Large-area cell-tracking cytometry for biophysical measurements of single cells
- **Utsav Banerjee** (A. CHANDRAKASAN)
Efficient Algorithms, Protocols and Hardware Architectures for Next-Generation Cryptography in Embedded Systems
- **Mindy Bishop** (M. SHULAKER)
Progress in Nanosystems for Computing and Health

PH.D. (CONTINUED)

- **Hongge Chen** (D. BONING)
Robust Machine Learning Models and Their Applications
- **Chanyeol Choi** (J. KIM)
Memristor-based AI Hardware for Reliable and Reconfigurable Neuromorphic Computing
- **Skylar Deckoff-Jones** (J. HU)
Chalcogenide Glass on Layered van der Waals Crystals for Integrated Photonic Devices
- **Joseph Finley** (L. LIU)
Spintronics Using Low Magnetization Materials
- **Matthew Flavin** (J. HAN)
Electrochemical Modulation of Neural Tissue Using ion-Selective Electrodes
- **Jinchi Han** (J. LANG)
Active Micro-/Nano-Structures for Electromechanical Actuation
- **Jack Holloway** (R. HAN)
Energy Efficient sub-Terahertz Electrical Interconnect
- **Ali Khalatpour** (Q. HU)
New Frontiers in THz Quantum Cascade Lasers
- **Harneet Khurana** (A. CHANDRAKASAN/H.-S. LEE)
Energy Efficient SAR ADC with Resolution Enhancement for Sensor Signals
- **Zheng Li** (J. LANG)
Computational Raman Imaging and Thermography
- **Ji Lin** (S. HAN)
Efficient Algorithms and Systems for Tiny Deep Learning
- **Sirma Orguc** (A. CHANDRAKASAN)
Programmable Interfaces for Biomedical and Neuroscience Applications
- **Pin-Chun Shen** (J. KONG)
Ohmic Contact to Monolayer Semiconductors
- **Robin Singh** (A. AGARWAL)
Integrated Bio-Photonic Devices: Sensors, Imagers, and Beyond
- **Haozhe Wang** (J. KONG)
Graphene-metal Interactions Beyond Van der Waals Force
- **Dan Wu** (J. VOLDMAN)
Microfluidic and Electronic Detection of Protein Biomarkers
- **Jin Xue** (R. RAM)
A Small, Bright Silicon Light-Emitting Diode Directly Integrated with Microelectronics
- **Tien-Ju Yang** (V. SZE)
Hardware-Aware Efficient Deep Neural Network Design
- **Yifei Zhang** (J. HU)
Reconfigurable Photonics based on Broadband Low Loss Optical Phase Change Materials