Vaanchit Srikumar

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Education

University of Illinois, Urbana-Champaign May 2023

- Bachelor of Science, Materials Science and Engineering, James Scholar (3.42/4.00)
- Coursework: Thin Film Mechanical & Electrical Properties, IC Device Theory & Fabrication, Thermal-Mechanical Properties of Materials, LEDs & Solar Cells, Microstructure Determination, Polymer Chemistry

Work Experience

Nick Holonyak Jr. Micro & Nanotechnology Laboratory, University of Illinois, Urbana-Champaign, IL

Research Assistant, Thin Film and Charged Particle Group (Prof. Kyekyoon Kim) May 2022 - Present

- Optimized photolithography and ICP-RIE etch processes to improve fabrication of selective-area growth (SAG) masks for Plasma-assisted molecular beam epitaxy growth of GaN/Ga_2O_3
- Calibrating plasma-enhanced chemical vapor deposition (PECVD) parameters to balance stress in SiN_X SAG masks
- Designed procedures and tested various contact metal stacks and anneal conditions to fabricate low contact-resistance ohmic contacts to epitaxial p-type GaN

Research Assistant, Photonic Systems Laboratory (Prof. Lynford Goddard) May 2022 - Present

- Developed process to etch V-grooves in porous silicon for low loss sub-surface fiber optic interconnects
- Created lithography masks in AutoCAD/KLayout and manufactured using Heidelberg direct laser write

Research Assistant, Nanostructured Semiconductor Materials & Devices (Prof. Xiuling Li) Sep 2019 - May 2020

- Fabricated 10 graphene-on-silicon/GaAs wafers per week for graphene quantum dots in a level 1000 cleanroom
- Tested numerous etch solutions for metal-assisted chemical etching (MacEtch) of ruthenium(Ru)-on-silicon and characterized samples using scanning electron microscopy
- Reviewed literature extensively to inform a CMOS-compatible Ru-MacEtch project and presented at a research symposium

Brunswick i-Jet Lab, Champaign, IL

Materials Science and Engineering Intern May 2021 - May 2022

- Built and evaluated a computational kinetic model in ThermoCalc for accurate simulation of solidification and microstructure of a proprietary marine alloy for propellers
- Developed a process for inoculation-based grain refinement of martensitic stainless steel in collaboration with vendors
- Coordinated an ongoing grain refinement trial with technical partners and resident engineers
- Authored project proposals to map Scope 3 emissions of boat parts and Pareto optimally improve lifecycle cost

Leadership Experience

Vice President, Theta Tau Professional Engineering Fraternity May 2022 - Present

- Managed executive board of 20 members and led operations for a 100+ headcount organization
- Facilitated communication with corporate partners for sponsorships, recruitment, and outreach workshops
- Consolidated risk management measures to ensure compliance and general Health & Safety

Skills and Certificates

- ***Technical***: Photolithography, Scanning Electron Microscopy, X-Ray Diffractometry, Raman Spectroscopy, Optical Microscopy, E-Beam Evaporation, Sputter Deposition, IC Characterization, Ellipsometry
- ***Applications:*** Crosslight TCAD, ImageJ, AutoCAD, VESTA, Python, MATLAB, ThermoCalc, Excel