
SHUBHAM MONDAL

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EDUCATION

UNIVERSITY OF MICHIGAN

Ph.D. student in Electrical and Computer Engineering,
GPA: 4.00/4.00

August-2020 - Present
Ann Arbor, U.S.A

- GRE: 326/340 (Q: 168 V:160 AWA:5)
- TOEFL: 114/120

KALYANI GOVT. ENGINEERING COLLEGE

Bachelor of Technology in Electronics and Communication Engineering,
GPA: 8.89/10.00

2015 -2019
Kolkata, India

SKILLS

- **Material characterization:** Photoluminescence spectroscopy, X-Ray Diffraction, Scanning Electron Microscopy (SE, EDS, EBSD), Atomic Force Microscopy.
- **Nanofabrication:** Experience in using a range of nanofabrication tools at the Lurie Nanofabrication Facility (LNF) at University of Michigan.
- **Simulation/Languages:** SILVACO TCAD, MATLAB, Sentaurus, Python.

RESEARCH EXPERIENCE

Ph.D. (pre-CANDIDATE)

Department of Electrical and Computer Engineering
University of Michigan, Ann Arbor

Aug. 2020 – Present
Michigan, U.S.A

- Currently exploring the ferroelectric III-V semiconductors, particularly AlScN, that can be integrated into existing platforms for a broad range of ferroelectric, electronic, optoelectronic, and photonic device applications.

RESEARCH ASSISTANT

Department of Electrical Engineering,
Indian Institute of Technology, Bombay

Aug. 2019 – March 2020
Mumbai, India

- Collaborated with Ph.D. students on ongoing projects based on the indigenous development of quantum dot/Dot-in-a-Well based Infrared Focal Plane Arrays.
- Carried out optical (Photoluminescence) and morphological (XRD) measurements on MBE grown III-V arsenide semiconductors.

- Carried out electrical measurements for optimization of quantum dot infrared photodetector (QDIP) performance.
- Performed optical measurements in collaborative research projects on ZnO based materials and devices.
- Presented and published multiple works in peer reviewed journals (1 as first author)

SUMMER RESEARCH INTERN

May. 2018 – August 2018

Department of Electrical Engineering,

Mumbai, India

Indian Institute of Technology, Bombay

- Carried out TCAD simulation of thin-film transistors.
- Designed and simulated unique heterostructure based TFTs achieving enhanced device performance for large area display applications.
- Carried out mathematical modelling for investigating carrier transport properties.
- Presented results in SPIE Nanoscience + Engineering, San Diego 2018.

LEADERSHIP/TEAMWORK EXPERIENCE

BOARD MEMBER, ECE Graduate Student Council

July 2021 – Present

- Co-Lead in ECE BuddEEs (2021-2022) - The BuddEEs Program is an ECE Ph.D. Peer Mentoring program where incoming Ph.D. students are matched with a current ECE Ph.D. student who acts as a resource and mentor.

DIRECTOR, IEEE KGEC Student Branch Chapter

2018-2019

- Led a team of 12 officers for a year in planning and carrying out a holistic range of chapter activities that included guest talks, seminars, conferences etc.
- Organized outreach activities for technology dissemination and education of underprivileged sections.
- Managed yearly budgets and fund allocations.
- Established and maintained relationships with speakers, distinguished lecturers and other sponsors.

BOARD MEMBER, SPIE Chapter, IIT Bombay

2019-2020

- Served on the advisory panel for managing chapter activities.
- Actively involved in an outreach programs to foster scientific acumen among the youth.
- Organized contests, as a part of SPIE team, in technological fests at IIT Bombay.

SELECTED PUBLICATIONS

1. **Shubham Mondal**, Sritoma Paul, Md Jawaid Alam, Sushama Sushama, Subhananda Chakrabarti, "Effects of carrier confinement in MgZnO/CdZnO thin-film transistors: Towards next generation display technologies, *Superlattices and Microstructures*, Volume 134,2019,106220.
2. Deviprasad, Vidya P., **Shubham Mondal**, Sritoma Paul, Binita Tongbram, Debabrata Das, Debiprasad Panda, and Subhananda Chakrabarti. "Incorporation of quaternary (In_{0.22}Al_{0.22}Ga_{0.56}As) capping in pip QDIPs for efficient minimization of hole-assisted dark current." *Infrared Physics & Technology* 103 (2019): 103079.

3. Dongre, Suryansh, Sritoma Paul, **Shubham Mondal**, Ravindra Kumar, Debiprasad Panda, Sanowar Alam Gazi, Debabrata Das et al. "In-Situ Tailoring of Vertically Coupled InAs pip Quantum-Dot Infrared Photodetectors: Toward Homogeneous Dot Size Distribution and Minimization of In–Ga Intermixing." *ACS Applied Electronic Materials* 2, no. 5 (2020): 1243-1253.
4. Deviprasad, Vidya P., Debabrata Das, Binita Tongbram, Debiprasad Panda, Sritoma Paul, **Shubham Mondal**, and Subhananda Chakrabarti. "Spatial optimization of modulation doping in PIP QDIPs: Towards achieving higher operating temperature." *IEEE Transactions on Nanotechnology* 19 (2019): 247-254.

(for complete list of publications: [Google Scholar Link](#))