Sourangsu Banerji

(**Email:** sourangsu.banerji@utah.edu)

Education

Ph.D. in Electrical and Computer Engineering — Aug.'2016 – Dec.'2020
University of Utah, Salt Lake City, UT, USA
Advisors: Prof. Berardi Sensale-Rodriguez and Prof. Rajesh Menon

B.Tech. in Electronics and Communication Engineering — Sept.'2010 – Jul.'2014
West Bengal University of Technology, Kolkata, WB, India

Professional Experience

Graduate Research Assistant — Sept.'2016-Present
University of Utah, Salt Lake City, UT, USA
Project: Computational Design of Optics & Nanophotonic Devices
Key Achievements:

- Developed an optimization algorithm (**GDABS**) which speeds up computation time ~10-100X times faster than previously used. **(Patented)**
- Developed fabrication error tolerant and efficient (>50%) planar THz/optical elements.
- Developed a machine-learning algorithm (**b-ARLA**) for optimization of nanophotonic circuits.

Selected Publications

[1] M. Meem,* **S. Banerji**,* et.al. "Broadband lightweight flat lenses for longwave-infrared imaging", **Proceedings of the National Academy of Sciences (PNAS)** (***Accepted***) (*equal contribution)

[2] **S. Banerji**, et.al. "Imaging with flat optics: metalenses or diffractive lenses?" **Optica**, Vol.6, June 2019.

[3] **S. Banerji**, et.al. "A computational design framework for efficient, fabrication error-tolerant, planar THz diffractive optical elements", **Scientific Reports**, Vol.9, April 2019.

Selected Scientific Honors

Best Paper Award (Venue: OSA-COSI' 19**)** (2019)
Paper: "Metalenses or diffractive lenses for imaging?"

Best Student Paper Award (Runners Up) (Venue: IRMMW-THz' 18**)** (2018)
Paper: "Demonstration of Computational THz Diffractive Optical Elements Enabled by a Modified Direct Binary Search Technique"

Best Student Poster Award (Venue: SPSAS+SWIECA' 18**)** (2018)
Paper: "From Visible to THz: Planar Optics for High-Precision, Energy-Efficient Laser Applications"

Technical Skills

- **Programming Languages** **:** Java, C/C++, Python
- **Measurement Tools** **:** Toptica THz CW system, VDIE THz Tx-Rx synthesizer, THz imager, CMOS/CCD image sensors, NKT Photonics laser system.
- **Software Packages** **:** Lumerical, MATLAB®, ANSYS HFSS®, CST Microwave Studio

References

Available upon request.