Sourangsu Banerji

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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)**, Vol. 116, October 2019. (*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"

Press and Media Interest

[1] New lens 20 times thinner than human hair set to replace camera bumps - Daily Mail UK

[2] Engineers develop thin, lightweight lens that could produce slimmer camera phones, longer-flying drones - Science Daily

[3] New lens design could lead to slimmer smartphones, longer-flying drones - The Times of India (ET Telecom)

Professional Service

Member – SPIE, OSA, IEEE
Reviewer – IEEE Transactions on THz Science and Technology