Sourangsu Banerji

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Education

Ph.D. in Electrical and Computer Engineering — Aug.'2016 – Present
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 On-chip Integrated Nanophotonic and Free Space Optical Devices
Key Achievements:

- ✓ Developed an algorithm (**GDABS**) for designing free space optical devices with a lower computation space and time complexity (up to ~10-100X times). (**Patent pending**)
- ✓ Developed a machine-learning algorithm (**b-ARLA**) for designing on-chip integrated nanophotonic devices.

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)**, Volume-116, October 2019. (*equal contribution)

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

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

Selected Scientific Honors

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

[2] **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"

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

Selected Press and Media

[1] New lens 20 times thinner than human hair set to replace camera bumps - Daily Mail UK, November 2019.
[2] Engineers develop thin, lightweight lens that could produce slimmer camera phones, longer-flying drones - Science Daily, November 2019.
[3] New lens design could lead to slimmer smartphones, longer-flying drones - The Times of India (ET Telecom), November 2019.
[4] ECE Student wins Best Paper - Utah ECE News, July 2019.
[5] Sourangsu Banerji, University of Utah, USA, discusses his work in the next generation of metasurfaces - OSA Stories, August 2018.

Professional Service

Member – SPIE, OSA, IEEE
Reviewer – IEEE Transactions on THz Science and Technology, Optics Express, OSA Continuum, Journal of Optical Society of America B, Journal of Lightwave Technology and Optical Materials Express.