

# Sourangsu Banerji

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**PhD Student of Department of Electrical and Computer Engineering, University of Utah**

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## Education

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**Ph.D.** in Electrical and Computer Engineering (GPA: 3.74/4.00) Aug.'2016 – Present

[University of Utah, Salt Lake City, UT, USA](#)

Advisor: [Prof. Berardi Sensale-Rodriguez](#)

**B.Tech.** in Electronics and Communication Engineering (GPA: 8.21/10.00) Sept.'2010 – Jul.'2014

[West Bengal University of Technology, Kolkata, WB, India](#)

Advisor: [Prof. Arpan Deyasi](#)

Thesis Dissertation: *Study of Electronic and Electromagnetic Properties of One-Dimensional Photonic Crystal*

## Professional Experience

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**Graduate Research Assistant** Sept.'2016-Present

[University of Utah, Salt Lake City, UT, USA](#)

[Terahertz Optoelectronics Research Group](#) (Advisor: [Prof. Berardi Sensale-Rodriguez](#))

Key Achievements:

- Developed an algorithm (mDBS) which speeds up computation time ~10-100X times faster than previously used.
- Developed fabrication error tolerant and efficient (~50%) planar THz/optical elements.

**Programmer Analyst** Jan.'2015-May'2016

[Cognizant Technology Solutions India Pvt. Ltd., Kolkata, WB, India](#)

Key Achievements:

- Developed an IBM I.D. toolkit for automated mail integration over the client server (handling capacity ~50,000).

**Research Assistant** Jul.'2013-Aug.'2014

[West Bengal University of Technology, Kolkata, WB, India](#) (Advisor: [Prof. Arpan Deyasi](#))

Key Achievements:

- Developed an analytical framework for the study of band structures and wave propagation of 1D photonic crystals.

**Visiting Research Student** Feb.'2012-Nov.'2014

[Indian Statistical Institute, Kolkata, WB, India](#)

[Mathematical Genomics Research Group](#) (Advisor: [Prof. Pabitra Pal Chowdhury](#))

Key Achievements:

- Developed a fractal image processing technique to with research activities within the group.

**Winter Research Intern** Dec.'2012-Jan.'2013

[Variable Energy Cyclotron Center, Kolkata, WB, India](#)

[Mechanical Engineering Group \(Cryogenic Instrumentation Section\)](#) (Advisor: [Dr. Tamal Kumar Bhattacharya](#))

Key Achievements:

- Developed a GUI for remote control of the synchrotron facility; later adopted in other units due to robust design.

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## Selected Scientific Contributions

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### Peer-Reviewed Journal Papers

- [1] Sourangsu Banerji, Ashish Chanana, Hugo Condori Quispe, Sara Arezoomandan, Ajay Nahata and Berardi Sensale-Rodriguez, “Efficient and fabrication-error tolerant 3D-printed computational diffractive THz optical elements”, Optics Express. (*Accepted*)
- [2] Sara Arezoomandan, Hugo Condori Quispe, Ashish Chanana, Prashanth Gopalan, Sourangsu Banerji, Ajay Nahata and Berardi Sensale-Rodriguez, “[Graphene–dielectric integrated terahertz metasurfaces](#)”, Semiconductor Science and Technology, Volume-33(10), September 2018. (*Invited article*) (Cover Image for Issue “Special Issue on Terahertz Devices”)

### Keynote and Invited Talks

- [1] Sourangsu Banerji, Ashish Chanana, Hugo Condori, Sara Arezoomandan, Ajay Nahata, and Berardi Sensale-Rodriguez, “Demonstration of computational THz diffractive optical elements enabled by a modified direct binary search technique”, 43rd International Conference on Infrared, Millimeter and Terahertz Waves, Nagoya, NP, Japan, September 2018. [[Best Student Paper Award \(Runners Up\)](#)]

## Selected Scientific Honors, Awards, and Recognitions

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[Best Student Paper Award \(Runners Up\)](#) (2018)

Award Committee: [The International Society of Infrared, Millimeter, and Terahertz Waves](#)

[Student Poster Award](#) (2018)

Award Committee: [São Paulo School of Advanced Science \(SPSAS\)](#) + [XVI Jorge André Swieca School on Non linear and Quantum Optics \(SWIECA\)](#)

[SPIE Optics + Photonics Travel Award](#) (2017)

Award Committee: [Society of Photographic Instrumentation Engineers \(SPIE\)](#)

[University of Utah Graduate Fellowship](#) (2016)

Award Committee: [University of Utah, Salt Lake City, UT, USA](#)

## Technical Skills

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- **Programming Languages** : Java, C/C++, Python
- **Characterization Tools** : Raman Spectroscopy, UV-VIS Spectrometry, Fluorescence Spectroscopy
- **Measurement Tools** : Toptica THz CW System, VDIE THz Tx-Rx Synthesizer, THz Imagers.
- **Design Tools** : Xilinx (VHDL), Microwind, NI LabVIEW, KLayout, Mentor Graphics Pyxis, Code V, Zemax
- **Business Tools** : IBM Integration Designer, IBM BPM, IBM ODM.
- **Software Packages** : Lumerical FDTD Solutions, Lumerical MODE Solutions, MATLAB®, ANSYS HFSS®, COMSOL®, CST Microwave Studio

## References

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Available upon request.