

Sourangsu Banerji

PhD Student

Department of Electrical & Computer Engineering
University of Utah

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Academic Background

University of Utah

Salt Lake City, USA

Ph.D. – Electrical Engineering (2016-2021)

Advisor: Dr. Berardi Sensale-Rodriguez

West Bengal University of Technology

Kolkata, India

B.Tech. – Electronics & Communication Engineering (2010-2014)

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

Advisor: Dr. Arpan Deyasi

Professional Experience

Graduate Research Assistant

University of Utah, Salt Lake City, USA

August '16 - Present

Graduate Teaching Assistant

University of Utah, Salt Lake City, USA

August '16 – May '17

Programmer Analyst

Cognizant Technology Solutions Pvt. Ltd., Kolkata, India

January '15 – May '16

Visiting Research Student

Indian Statistical Institute, Kolkata, India

March '12 – August '14

Undergraduate Research Intern

Variable Energy Cyclotron Center, Kolkata, India

December '12 – January '13

Awards and Honors

Best Student Paper Award

Awarded By: Electronics Materials Society (MRS)

June '17

SPIE Optics + Photonics Travel Grant Award

Awarded By: International Society of Optics and Photonics (SPIE)

June '17

M.Tech. Fellowship (All India Rank: 24)

Awarded By: Indian Institute of Technology (GATE)

March '16

Innovative Student Projects Award (Finalist)

Awarded By: Indian National Academy of Engineering (INAE)

June '14

Indian National Mathematics Olympiad (Qualified)

Awarded By: Homi Bhabha Centre for Science Education-Tata Institute of
Fundamental Research (HBCSE-TIFR).
December '09

Book Chapters

Analytical Computation of Band Structure of 1D Photonic Crystal under Normal Incidence of Electromagnetic Wave

Arpan Deyasi, Sourangsu Banerji, Sayan Bose, Abhishek Halder
Lecture Notes in Electrical Engineering: Computational Advancement in Communication Circuits and Systems, Part 6: Advances in Devices and Circuit, vol. 335, Chapter 36, p. 331-338, September 2014.

Experimental Demonstration of Diffraction Limited THz Spectrometer

Sourangsu Banerji, Hugo O. Condoriquispe, Berardi Sensale-Rodriguez
Nature Communications (Submitted)

Geometric Aberration Rectified THz Diffractive Lenses using modified-Direct Binary Search Algorithm

Sourangsu Banerji, Berardi Sensale-Rodriguez
Scientific Reports (Accepted)

Simulating Reflectivity Property for Propagating Wave inside One-Dimensional Photonic Crystal with Different Material Systems

Sourangsu Banerji, Arpan Deyasi
Journal of Electron Devices, Volume-21, March 2015.

Group Theoretic Approach to Study Transfer Matrix Method in One Dimensional Photonic Crystals

Sourangsu Banerji,
GESJ: Physics, Volume-11(1), July 2014.

Journal Publications

Comprehensive Review on Band Structure, Density of States and Wave Propagation inside One-Dimensional Photonic Crystal

Sourangsu Banerji, Sayan Bose, Abhishek Halder, Subhasis Mandal, Arpan Deyasi
International Journal for Research in Applied Science and Engineering Technology, Volume-2, Issue-4, April 2014.

Analytical Computation of Density of States of One-Dimensional Photonic Crystal under Polarized Incident Wave for Different Materials

Sourangsu Banerji, Abhishek Halder, Arpan Deyasi, Sayan Bose, Subhasis Mandal,
Journal of Electron Devices, Volume-19, April 2014.

Design and Implementation of an Unmanned Vehicle using a GSM Network without Microcontrollers

Sourangsu Banerji
Journal of Electrical Engineering, Volume-14, Issue 1, April 2014.

Computing Density of States of One-Dimensional Photonic Crystal under P-Polarized Incident Wave

Abhishek Halder, Sourangsu Banerji, Sayan Bose, Subhasis Mandal, Arpan Deyasi
International Journal of Modern Communication Technologies & Research, Volume-2, Issue-3, March 2014.

To Study the Effect of Grating Length on Propagating Modes in Bragg Filters with $\text{Al}_{(x)}\text{Ga}_{(1-x)}\text{N}/\text{GaN}$ Material Composition

Sourangsu Banerji

International Journal of Advanced Science and Technology, Volume-63, February 2014.

On IEEE 802.11: Wireless LAN Technology

Sourangsu Banerji, Rahul Singha Chowdhury

International Journal of Mobile Network Communications & Telematics, Volume-3, Issue-4, August 2013.

Wi-Fi & WiMAX: A Comparative Study

Sourangsu Banerji, Rahul Singha Chowdhury

Indian Journal of Engineering, Volume-2, Issue-5, pp.: 51-54, March 2013.

Design and Implementation of developed an Unmanned Vehicle using a GSM Network with Microcontrollers

Sourangsu Banerji

International Journal of Science, Engineering and Technology Research, Volume-2, Issue-2, pp.: 367-374, February 2013.

Modification of UV Surface Plasmon Resonances in Aluminum Hole-Arrays with Graphene

Yunshan Wang, Sourangsu Banerji, Jieying Mao, Sara Arezoomandan, Berardi Sensale Rodriguez, Steve Blair

SPIE Optics + Photonics, San Diego, CA, USA, August 2017.

UV Surface Plasmon Resonance Modification in Aluminum Nanohole-Arrays Using Graphene

Sourangsu Banerji, Yunshan Wang, Jieying Mao, Sara Arezoomandan, Steve Blair, Berardi Sensale Rodriguez

Electronic Materials Conference (EMC), Notre Dame, IN, USA, June 2017.

[Best Student Paper Award]

Modification of UV Surface Plasmon Resonances in Aluminum Hole-Arrays with Graphene

Yunshan Wang, Sourangsu Banerji, Jieying Mao, Sara Arezoomandan, Berardi Sensale Rodriguez, Steve Blair

CLEO: Science and Innovations, San Jose, CA, USA, May 2017.

On the Comparative Analysis of the Band Structure of One-Dimensional Photonic Crystal with Different Material Composition under Oblique Wave Incidence

Arpan Deyasi, Sourangsu Banerji

National Level Conference on Frontline Research in Computer, Communication and Device, Kolkata, WB, India, December 2015.

Application of Group Theory in Transfer Matrix Technique for Band Structure Calculation in 1D Photonic Crystal

Sourangsu Banerji, Arpan Deyasi

International Conference on Computer, Communication and Control, Kolkata, WB, India, September 2015.

Computing Photonic Eigen-Modes and Bandwidth for 1D Photonic Crystal with Different Material Compositions

Arpan Deyasi, Sourangsu Banerji

2nd National Conference on Emerging Trends in Engineering & Sciences, Kolkata, WB, India, July 2015.

Analysis of Reflectivity for Propagating Wave inside 1D Photonic Crystal with Different Material Systems

Arpan Deyasi, Sourangsu Banerji

International Conference on Computing, Communication & Manufacturing, Kolkata, WB, India, December 2014.

Theoretical Investigation on Photonic Bandgap Tailoring in One-Dimensional Photonic Crystal using Different Numerical Methods

Arpan Deyasi, Sourangsu Banerji, Abhishek Halder, Sayan Bose

International Conference on Devices, Circuits and Communications, Kolkata, WB, India, September 2014.

First-order Calculation of Band Structure of One-Dimensional Photonic Crystal

Sayan Bose, Abhishek Halder, Sourangsu Banerji, Arpan Deyasi

National Conference on Materials, Devices and Circuits in Communication Technology, Burdwan, WB, India, February 2014.

Comparative Study of Density of States of 1D Photonic Crystal for Different Polarization Conditions of Incident Wave

Sourangsu Banerji, Arpan Deyasi, Abhishek Halder, Sayan Bose

National Conference on Materials, Devices and Circuits in Communication Technology, Burdwan, WB, India, February 2014.

Technical Skills

Characterization Techniques

Raman Spectroscopy
UV-VIS Spectrometry
Fluorescence Spectroscopy

Programming Languages

Java
C/C++
Python

Design Tools

Xilinx (VHDL)
Microwind
NI LabVIEW
KLayout
Mentor Graphics Pyxis

Software Packages

Lumerical FDTD Solutions
Lumerical MODE Solutions
MATLAB®
ANSYS HFSS®
COMSOL®

References

Available upon request.