

Neel Chatterjee

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Publications

Journal Publications

1. Neel Chatterjee, Sujata Pandey, *Quantum Mechanical Analysis of GaN Nanowire Transistor for High Voltage Applications*, Journal of Nano-and Electronic Physics 8 (4), 4063-1
2. Neel Chatterjee, Sujata Pandey, *Simulation and Finite Element Analysis of Electrical Characteristics of GAA Junctionless Nanowire Transistors*, Journal of Nano-and Electronic Physics 8 (1), 1025-1

Conference Publications

1. Neel Chatterjee, Sujata Pandey, *Finite element analysis of silicon GAA nanowire transistor with different high k-dielectrics*, TENCON 2015-2015 IEEE Region 10 Conference, 1-5
2. Neel Chatterjee, Sujata Pandey, *Simulation and Finite element analysis of Si and InAs Nanowires*, 2015 Annual IEEE India Conference (INDICON), 1-4
3. Neel Chatterjee, Akriti Gupta, Sujata Pandey, *Simulation and Analysis of Si GAA Nanowire Tunneling FET*, IEEE ICCTICT, 118-122
4. Akriti Gupta, Neel Chatterjee, Sujata Pandey, MR Tripathy, *Design and simulation of GaN HEMT and its application to RF amplifiers*, Progress in Electromagnetic Research Symposium (PIERS), 3815-3819
5. Neel Chatterjee, Sujata Pandey, *Multiphysics Analysis of Heat Transfer in Gate All Around (GAA) Silicon Nanowire Transistor: Material Perspective*, Springer Recent Trends in Materials and Devices, 49-55

Work Experience

University of Minnesota, Twin Cities

September 2017 — Present

Graduate Researcher

Working in the area of 2D materials based simulation and fabrication of nanoelectronic devices.

Amity University, Uttar Pradesh

January 2015 — May 2017

Undergraduate Researcher

Worked in the area of semiconductor device simulation using COMSOL Multiphysics.

Have used *Semiconductor Module* extensively along with *Heat Transfer in Solids module* for thermal analysis of semiconductor devices.

Indian Institute of Technology, Roorkee

May 2016 — July 2016

Summer Intern

Worked in the area of Quantum dot based Photovoltaic devices. Did numerical simulations using FORTRAN of Quantum Dot Solar Cell (Ongoing work). Did fabrication of CdSe and CdSe-ZnS quantum dots and P3HT:PCBM bilayer solar cell.

Amity University, Noida

May 2015 — July 2015

Summer Intern

Worked in the area of image processing using raspberry pi, octave and Python OCV. The project included detection of optic disc in the diseased (glaucoma) fundus images.

CETPA Infotech

23 December, 2014 — 6 January, 2015

Trainee

PCB Designing with PCB Express, Eagle and PROTEUS software.

Hewlett Packard

16 June 2014 — 16 July 2014

Trainee

Summer Training Program 2014 (Embedded Systems and Robotics- Basics). Secured A grade. Used Atmega 16 for the projects made.

Education

University of Minnesota, Twin Cities

M.S., Electrical and Computer Engineering, 2017-19

Field: 2D Materials' Device Simulation, Nanofabrication.

Amity University, Noida

B.Tech, Electronics and Communication Engineering, 2014-17

Field: Nanoelectronics, Semiconductor Device Simulations.

GPA: 8.92/10

Government College of Engineering, Jalgaon, M.S.

B.E, Electronics and Telecommunication Engineering, 2013-14

GPA: 8.50/10

Relevant Courses

- Semiconductor Devices and Properties - I
- Microelectronic Fabrication
- Structure and Symmetry of Materials
- Fundamentals of Nanoelectronics, edX
- Fundamental of Nanotransistors, edX

Professional Membership

- IEEE Student Member
- IEEE Electron Devices Student Member

Technical Skills

- **Operating Systems:** LINUX, Windows 98/7/8/10
- **Programming Languages:** MATLAB, Python, FORTRAN, VHDL, Verilog
- **Softwares:** COMSOL Multiphysics, SILVACO TCAD, OrCAD, LabView, L^AT_EX

Honors

- **Best Undergraduate Thesis** Award for Designing and Simulation of Transistor Architectures and MEMS based Sensors.
- Ranked second in Class 12th (2013) and secured 95.6 percentile in India.
- Ranked first in Class 10th (2011) and secured cash prize of Rs 5000 from Govt. of India.

References

Jeong-Hyun Cho, PhD

Professor
Electrical and Computer Engineering
University of Minnesota, Twin Cities Email : jcho@umn.edu
Role : Graduate Advisor

Sujata Pandey, PhD

Professor
Electronics and Telecommunication Engineering
Amity Institute of Telecom and Management
Amity University, Uttar Pradesh
Email : spandey@amity.edu
Role : Undergraduate Thesis Advisor

Brijesh Kumar, PhD

Assistant Professor
Electronics and Communication Engineering
Indian Institute of Technology, Roorkee
Email : brijesh@iitr.ac.in
Website : brijeshkumar.com
Role : Summer Internship Guide

Malay Ranjan Tripathi, PhD

Professor
Electronics and Communication Engineering
Amity School of Engineering and Technology
Amity University, Uttar Pradesh
Email : mrtripathy@amity.edu
Role : Co-Advisor