Sajid Ali

PhD Candidate
Applied Physics
Northwestern University

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Education

2016–Present **Northwestern University**, *Evanston, IL*,
Ph.D., Applied Physics,
Computational x-ray optics, Technique development for X-ray Microscopy.

2011–2016 **IIT Madras**, *Chennai, India*,
Masters of Tech. in Microelectronics and VLSI Design Electrical Engg.,
Master's Thesis : Impurity induced magnetism in Graphene.

2011–2016 **IIT Madras**, *Chennai, India*,
Bachelors of Technology, Electrical Engg.,
Minor: Physics.

Research Experience

2018–Present **X-Ray Wave Propagation**,
X-Ray Microscopy Group, Northwestern University, PI: Prof Chris Jacobsen.
- Developing parallelized computer codes for large scale wave propagation.
- Implemented finite difference based wave propagation in PETSc.

2016–2019 **Zone Plate Testing**,
X-Ray Microscopy Group, Northwestern University, PI: Prof Chris Jacobsen.
- Tested high aspect ratio zone plates for efficiency and tilt tolerance at APS and NSLS.
- Developed code to simluate the effect of tilt misalignment.

2015–2016 **Magnetism in Graphene**,
Computaional Condensed Matter Group, IIT Madras, PI: Prof Ranjit Nanda.
- Investigated the magnetic properties of ntercalated bilayer graphene using DFT.
- Performed stability analysis for those which exhibited a non-trivial magnetic moment.

Summer 2015 **A preliminary DFT Study on the stability of cathode materials**,
Center for Automotive Energy Materials, ARCI IITM Research Park, PI: Dr Sahana MB.
- Studied the relative stability of three structural phases of a novel cathode material for Li-ion batteries.
- Created complex heterostructures and studied their electronic structure using DFT.

Publications

2020 **Tunable hard x-ray nanofocusing with Fresnel zone plates fabricated using deep etching** Kenan Li, **Sajid Ali**, Michael Wojcik, Vincent De Andrade, Xiaojing Huang, Hanfei Yan, Yong S. Chu, Evgeny Nazaretski, Ajith Pattammattel, and Chris Jacobsen *Optica Vol. 7, Issue 5, pp. 410-416 (2020)*

2020 **Effect of tilt on circular zone plate performance** Sajid Ali and Chris Jacobsen *Journal of the Optical Society of America A Vol. 37, Issue 3, pp. 374-383 (2020)*