

# Ms. Richa Naja Jain

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Research Fellow

## Education

2012–2017 **5 Year Int Master of Science and Bachelor of Science(Research)**, *Indian Institute of Science (IISc)*, Bangalore.  
Major in Physics, Minor in Material Science

## Academic Achievements

2019 qualified CSIR NET Physics (LS)  
2017 GATE Physics AIR- 354, JEST AIR-568  
2015 and 2014 Recipient of IASc-INSA-NASI (Indian Academy Of Sciences) Summer Research Fellowship for two consecutive years, worked in BARC (Bhabha Atomic Research Centre), Mumbai .  
2015 among **National top 26** candidates out of total enrolment of **10029** in NGPE-2015 (National Graduate Physics Examination) conducted by IAPT ( Indian Association of Physics Teachers).  
2013 Emerged as **State topper**, Karnataka, in NGPE-2013 conducted by IAPT.  
2011-2017 Recipient of the **KVPY Fellowship** awarded by DST (Department of Science and Technology), Government of India (KVPY Stream SA- 2010,AIR- 212.)

## Research Interests

Space Physics  
Nano Materials, Computational physics and numerical modelling

## Projects and Research Experience

### A:EXPERIMENTAL

May 2017 - RESEARCH INTERNSHIP AT EXPERIMENTAL PHYSICS III, JULIUS MAXIMILIANS UNIVERSITY OF WUERZBURG , **Germany**  
worked on Topological Insulators and Superconductivity  
August 2016 -May 2017 'OPTICS, NANOSTRUCTURE AND QUANTUM FLUIDS LAB, CENSE INDIAN INSTITUTE OF SCIENCE, **Bangalore**  
*Guide:Dr. Ambarish Ghosh, Centre for Nano science and Engineering , IISc*  
Master's thesis : "Effects of Oxygen Doping on Mechanical Properties of Graphene"  
Aug2015- 'QUANTUM TRANSPORT LAB', INDIAN INSTITUTE OF SCIENCE, BANGALORE  
April 2016 *Guide:Dr. Anindya Das, Condense Matter Physics Division, IISc*  
· Bachelor thesis: "Effects of ionic liquid as gate dielectrics in Graphene Field-Effect Transistor".

### B:COMPUTATIONAL

- May-July BHABHA ATOMIC REASERCH CENTRE (BARC), MUMBAI  
2015 *Guide: Prof. Dr.Lavanya M. Ramaniah (Head, Computational Condensed Matter Physics Section, BARC) and Dr. Bramhanand Chakraborty (SSPS Physics Division, BARC)*  
· Completed a project on '*Structure and Dynamics of Molten LiF-KF salt : A Molecular Dynamics Study*'
- May-July BHABHA ATOMIC REASERCH CENTRE (BARC), MUMBAI  
2014 *Guide: Prof. Dr.Lavanya M. Ramaniah and Dr. Bramhanand Chakraborty (SSPS Physics Division, BARC)* project on '*Exploring Hydrogen Storage on metal decorated nano structured materials using the first principles DFT calculations*' .
- 2013 INDIAN INSTITUTE OF SCIENCE, BANGALORE  
*Guide: Prof. Dr. S.K. Satheesh, CAOS, IISc (Centre for Atmospheric and Oceanic Sciences)*  
· Completed an project entitled '*Impression of the invisible particles: Understanding Basics of Aerosol Study*'

## Papers and Conference proceedings

- 1 TITLE "*LiF-KF: A Molecular Dynamics Study*"-Richa N.Jain et.al. *AIP Conf. Proc. 1731, 110013 (2016)*<http://dx.doi.org/10.1063/1.4948034>
- 2 TITLE "*First principles DFT investigation of yttrium-decorated boron-nitride nanotube: Electronic structure and hydrogen storage*" *AIP Conf. Proc. 1665, 050115 (2015)*"-Richa Naja Jain, Dr. Brahmananda Chakraborty and Dr. Lavanya M. Ramaniah <http://dx.doi.org/10.1063/1.4917756>
- 3 TITLE "*Electronic and magnetic properties of yttrium-doped silicon carbide nanotubes: Density functional theory investigations*", *AIP Conf. Proc. 1665, 130061 (2015)*; [10.1063/1.4918209](http://dx.doi.org/10.1063/1.4918209) - Jobanpreet S. Khaira, Richa N.Jain, Dr. Brahmananda Chakraborty and Dr. Lavanya M. Ramaniah <http://dx.doi.org/10.1063/1.4918209>.

## Technical Skills

PROGRAMMING LANGUAGE: C, JAVA, FORTRAN (acquainted with basics)

CHARACTERIZATION TECHNIQUES: Raman Spectroscopy, SEM, AFM

DEVICE FABRICATION: Lithography, measurement with various CASSY, PHYWE, LEYBOLD instruments and software interface units