SWAYANGDIPTA BERA

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EDUCATION

Indian Institute of Science Education and Research *August 2016 - Present*
4th Year, BS-MS Dual Degree Overall CPI: 9.31/10
Department of Physics

Ramakrishna Mission Vidyabhavan *2014-2016*
Higher Secondary Education Overall score: 95.8/100
Physics, chemistry, Biology, Mathematics State Rank-14

Gyandeep Vidyapith *2012-2014*
Secondary Education Overall Score 96.0/100
State Board State Rank-11

INSTRUMENTATION EXPERIENCE

Pulsed Laser Deposition (PLD)
X-Ray Diffraction Technique (XRD)
Superconducting Quantum Interference Device (SQUID)
AC Susceptibility Measurement
Familiar with **Dual Beam (Electron Beam and Ion Beam Experiments)**
Electron Beam Lithography
Plasma Etching
Spin Coating
Transport measurements in SQUID
Scanning Electron Microscope (SEM)
Different kinds of spectroscopy like- **Raman Spectroscopy,UV-Vis Spectroscopy.**
Lab works with differents types of **Interferometers**
Experience of **Chemistry and Biology** lab works

RESEARCH EXPERIENCE

University of Leipzig Leipzig, Germany
Division of Superconductivity and Magnetism *May 2019-July 2019*

Group led by Dr. Pablo Esquinazi

- This group investigates mainly superconductivity in Graphite interfaces.
- My task was to cut a graphite lamellae from bulk graphite such that it contains large no of interfaces.
- The lamella was cut by ion beam in Dual Beam set up then removed by a needle and then transferred to substrate.
- Several bigger electrical contacts were made on that sample followed by Electron Beam Lithography, sputtering of gold, spin coating.
- Then this sample was used for further transport measurements.

IISER Bhopal Bhopal, India
Light Scattering lab led by Dr. Surajit Saha *November 2018-December 2018*

- The aim of the research group is to understand phonons and their coupling with other quasiparticles by Raman and Infrared Spectroscopy.
- Transport properties in different types of 2D materials like- Graphene.
- My task was to learn Raman Spectroscopy and read the previous research works on Graphene.

IIT Roorkee Roorkee, India
Magnetism group led by Dr. Vivek Kumar Malik *May 2018-Jyly 2018*

- The aim of the research group is to investigate magnetic and electrical properties of different types of perovskite thin films prepared by PLD as well as bulk materials.
- I prepared thin film of LaSrMnO on Si substrate.
- The growth of thin film was characterized by XRD.
- Then these films were used to investigate magnetic properties in SQUID.
- M-H measurement and ZFC-FC(Zero Field Cooling and Field Cooling) measurement was done in SQUID.
- R-T(Resistance vs Temperature) measurement was done y the AC susceptibility measurement set-up.

ACADEMIC ACHIEVEMENTS

1. Selected as **DAAD-WISE Fellow** for carrying summer internship in **Germany, 2019**
2. Selected as **MITACS Globalink Fellow** to carry out summer internship at **Calgary University, Canada, 2019**
3. Selected at **SPARK Summer Internship Programme, 2018** to carry out summer internship at **IIT Roorkee**
4. Secured **top 2 percent** position in **JEE MAIN,2016** among 2 lakh candidates.
5. Secured 14th rank in state conducted by WBCHSE, 2016.
6. Secured 11th rank in state conducted by WBBSE, 2014.

RELEVANT COURSES

1. Core Courses
Quantum Mechanics, Classical Mechanics, Statistical Mechanics, Math Methods, Thermodynamics, Wave and Optics

2. Online Courses
Quantum Optics, coursera online course by Alain Aspect and Michel Brune.

SKILLS

Programming skills:
C, Python. Matlab(basic), LaTex

Extracurriculars:
Photography, Painting, Football, Table Tennis, Cricket.

Languages:
English, Hindi, Bengali.

MISCELLANOUS

I love to travel a lot and trekking, hiking, clicking pictures, reading books and to watch tv series.