

NAVEEN SINGH DHAMI

Room No. 327-D Wing, Tansa House IIT Bombay, Powai, Mumbai, 400076, India

+91-9149227093 ◊ naveen.dhami.182@gmail.com

EDUCATION

Indian Institute of Technology, Bombay 2017 - 2019
Master in Science Overall CPI: 6.42
Department of Physics

Kumaun University, Nainital, Uttarakhand 2013 - 2016
Bachelor of Science. Physics, Chemistry, Mathematics Overall Percentage: 70.05

V.V.M.I.C. Dharchula, Pithoragarh, Uttarakhand 2011 - 2013
Intermediate(10+2) Overall Percentage: 79.80

ACADEMIC ACHIEVEMENTS

- Awarded with the masters degree in Physics from prestigious Indian Institute of Technology Bombay (India).
- Qualified IIT-Joint Admission test for M.Sc. Physics 2017 with All India Rank-43 amongst almost 12000 undergraduate students all over India.
- Qualified Graduate Aptitude Test in Engineering (GATE)-2019 for admission in PhD Physics at IITs and IISc.
- Awarded with Inspire scholarship for being in top 1 percentile in state board intermediate examination 2013.
- Academic Topper of the school in Intermediate(10+2).

KEY RESEARCH EXPERIENCE

Ferromagnetic Resonance of Thin YIG film with the help of SsS and SNS junctions.

Laboratoire de Physique des Solides (L.P.S) Orsay, France

May - July 2018

NS₂ Group

- Fabricated SsS junction on the top of 40 nm YIG film sample, In which YIG was deposited by Jason Robinsons group Cambridge University.
- Calculated Saturation Magnetization, Damping Constant and Quality Factor of the fabricated sample with the help of DC analysis and RF analysis for Low Power and High Power.
- Learnt Lithography (Optical, E-beam) using NPGS (Nano pattern generator system) And got experience of handling Evaporators, Scanning Tunneling Microscope and cryogenic fridges.
- Explored the theory behind Josephsons junctions, Critical currents in superconductors, Type - I and Type - II supercon- ductors, Magnetization in superconductors and a brief idea of Mesoscopic physics.

Electrolytic gating on Gold Thin Film Field Effect Transistors (Masters Thesis Project)

Indian Institute of Technology Bombay, India

July 2018 - May 2019

Supervisor - Prof. Kantimay Das Gupta

- Studied about F.E.T (Construction, Operational principle and evaluation of device performance), MOSFETs and MIS- FETs. Explored Electrolytes (Polymer electrolytes, Ployelectrolytes and ionic liquids and gels).
- Studied about Electric Double Layer Transistors (E.D.L.T) as Configuration of EDLTs, Channel layer materials in EDLTs (Inorganic semiconductor channel layer, Organic semiconductor channel layer and carbon nanotubes and graphene).
- Fabricated Gold Hall Bar on the top of silicon sample and observed transfer characteristics of Ionic Liquid Gated FET. Calculated the carrier concentration for electrolytic gated samples of different thickness.

Electronic Security/Fire Alarm Sensors (Course Project)

Indian Institute of Technology Bombay, India

Aug - Nov 2017

Supervisor - Prof. Varun Bhalerao

- Presented a Security and Fire alarm System Prototype during the first semester in M.Sc.
- Using LDR (Light Dependent Resistor) we developed a system which can detect motion and impact of light on the system. Similarly we purposed a system with thermistor to develop a fire alarm which can sense the fire (temperature rise in surrounding) and trigger the alarm.

Above Threshold Ionization (Course Project)

Indian Institute of Technology Bombay, India

Feb - Apr 2019

Supervisor - Prof. B.P. Singh

- Studied about the Above Threshold Ionization (ATI) and multi photon processes in molecular systems. Understood the role of initial states in Above Threshold Ionization in multicenter molecules
- Presented a research grant proposal on using above threshold ionization to refine molecular structures.

CONFERENCES, EXHIBITIONS AND WORKSHOPS

Physical Demonstration of Total Internal Reflection of Light

Exhibitor at TECHCONNECT 2017

IIT Bombay, December 2017

- Presented physical demonstration of Total Internal Reflection to the curious school students using Laser light, colorful water and glycerine solutions.
- Presented a poster for Total internal reflection which includes Fermats principle and Fresnels equations etc in it.

CEMS (Centre of Excellence in Mathematical Sciences) workshop

CEMS workshop

Kumaun University Nainital, Summer 2015

- Joined the workshop for Real Analysis and Linear Algebra under the guidance of Prof.s from IISc and ISI Delhi.

Electrolytic Gating on Gold Thin Films (PRESENTATION)

International Conference

Institute of Physics, Zagreb, Croatia. July 2019

- Presented Masters Thesis (Electrolytic Gating on Gold Thin Films) in the institute of Physics, Zagreb.

TECHNICAL STRENGTHS

Programming Languages Python (NumPy, SciPy, Matplotlib), C++, FORTRAN

Lab Techniques Lithography (Optical and E- Beam), Profilometry, Atomic Force Microscopy, Evaporation (Thermal, E-beam)

Miscellaneous MatLab, LabVIEW, Latex, Arduino, MS-Office, Origin, Igor, Blender, Adobe After-Effects

COURSES UNDERTAKEN

Courses at Masters level

Classical Mechanics, Quantum Mechanics I and II, Electromagnetic Theory I and II, Atomic Physics, Nuclear and Particle Physics, Statistical Mechanics, Mathematical Physics I and II, Light Matter Interaction, Superconductivity and Low temperature Physics, Physics of Quantum Devices, Group Theory Methods, Condensed Matter Physics.

Courses at Bachelors Level

Mathematical Methods in physics, Thermal and Statistical Physics, Solid State Physics, Atomic and Molecular Physics, Electromagnetism, Classical Mechanics, Quantum Mechanics, Electronics, Optics, Linear Algebra and Linear Programming, Real and Complex Analysis, Numerical Analysis, Calculus, Statics and Dynamics, Organic chemistry, Physical Chemistry, Inorganic Chemistry.

CO-CURRICULAR ACTIVITIES

- Advanced Physics tutor at chegg.com
- Part of the eleven member squad which was the runner up and won silver medal in Post Graduate General Championship in Cricket at IIT Bombay.
- Participated in Post Graduated Volleyball Championship at IIT Bombay.
- Participated in PG Crossy - Merathon at IIT Bombay.

POSITIONS OF RESPONSIBILITY

- Class Representative of M.Sc Physics 2017-19 batch at Indian Institute of Technology Bombay, Class representative serves as a bridge between professors and students.