

Curriculum Vitae
Dr. Naveen Thakur

Assistant Professor-Physics (Ph.D.)

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PERSONAL INFORMATION

Date of birth & Place: May 25, 1994, Solan, Himachal Pradesh (INDIA)

Nationality: Indian

Languages: Hindi, English

Sex: Male

Disabilities: None

EDUCATION

Ph.D. in Science 2017-2022, (Condensed matter physics), **National Institute of Technology Hamirpur (NIT-H)** with **Dr. Subhash Chand**, Associate Professor, Department of Physics.

Thesis title: *“Fabrication, characterization and analysis of metal-insulator-semiconductor heterostructures”*

- Fabrication and electrical characterization of solution-processed Ni/MgO/*p*-Si/Al MIS heterostructures.
- Analysis of rectifying nature of fabricated heterostructures using electric measurements and impedance spectroscopy.
- Role of interface states in affecting properties of heterostructures.

Master of Science in Physics 2014-2016, CGPA – 8.64.

Bachelor of Science – 2011-2014, Percentage – 67.3.

AWARDS AND SCHOLARSHIPS HELD

Senior Research Fellow (SRF) from 1st August' 2019 to August' 2022.

Junior Research Fellow (JRF) 1st August' 2017 to August' 2019.

GATE 2017, Percentile: 97.71, Rank (GATE-2019 all India): 427

NET/HP-SET-2018 (Himachal Pradesh State eligibility test)-Physics.

RESEARCH INTEREST

Physics of semiconductor devices,

Fabrication and characterization of heterostructures,
Studies of topological semimetals Interfaces.

INSTRUMENT SKILLS

Keithley 2400 Source meter (Current-voltage measurements).
Wayne Kerr-6520 A impedance analyser.
IR Spectrophotometer (JASCO-FT-IR Model-410).
Thermal vacuum coating unit model 12A4D.

PUBLICATIONS

- | Published | h-index: 3 | i10-index: 2 | Total citation: 110 |
|---|------------|--------------|---------------------|
| 1. Naveen Kumar and Subhash Chand, "Effects of temperature, bias and frequency on the dielectric properties and electrical conductivity of Ni/SiO ₂ /p-Si/Al MIS Schottky diode", <i>J. Alloys Compd.</i> , vol. 817, pp. 153294, 2019. | | | |
| 2. Naveen Kumar and Subhash Chand, "Analysis of rectifying metal-semiconductor interface using impedance spectroscopy at low temperatures," <i>Physica B Condens. Matter.</i> , vol. 599, pp. 412547, 2020. | | | |
| 3. Naveen Kumar and Subhash Chand, "Scrutinization of non-saturation behaviour of reverse current-voltage characteristics in Ni/SiO ₂ /p-Si/Al diode," <i>Superlattices Microstructur.</i> , vol. 160, pp. 107088, 2021. | | | |
| 4. Naveen Kumar and Subhash Chand, "Fabrication and electrical characterization of solution-processed Ni/MgO/p-Si/Al MIS Schottky diodes", <i>Appl. Phys. A</i> , vol. 128, pp. 226, 2022. | | | |
| 5. Seema, Naveen Kumar and Subhash Chand, "Effect of Mg ²⁺ ions substitution on phase formation, structural and optical Zn _{1-x} Mg _x O structure", <i>J. Mater. Sci.: Mater. Electron</i> , vol. 33, pp. 861, 2022. | | | |
| 6. Kalpna Thakur, Naveen Kumar and NovRattan Sharma, "Effects of lockdown and pandemic on mental health of children. (Scientific letter) <i>Indian Journal of Pediatrics</i> ", vol. 87, pp. 552, 2020. | | | |
| 7. Seema, Naveen Kumar and Subhash Chand, "Structural, morphological, optical and dielectric properties of Ti _{1-x} FeO ₂ nanoparticles synthesized using sol-gel method", <i>J. Sol-Gel Sci. Tech</i> , October 2022. | | | |

CONFERENCES ATTENDED AND PAPER PRESENTED

1. Naveen Kumar and Subhash Chand, "On the crossing behaviour of forward current-voltage characteristics of Ni/SiO₂/p-Si/Al Schottky diodes", *AIP Conf. Proceed.*, vol. 2220, pp. 040022, 2020.
2. *International Conference on Condensed Matter & Applied Physics, Rajasthan, India, 14th - 15th October 2019.*
3. *New Generation functional materials and their applications (NFMA-2021) organized by Department of Material Science and Engineering, NIT-Hamirpur, 3rd-7th February, 2021.*
4. *Online National Conference on Recent Trends of Innovation in Basic & Applied Sciences (NCRTIBAS-2021), 22nd October 2021.*