CURRICULUM VITAE

Gulshan Kumar

Assistant Professor

Department of Physics,

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Personal Details

Date of Birth: 03-March-1990

Gender: Male

Marital Status: Single

Languages Known: Hindi and English

Education

2016-Present **Doctor of Philosophy (PhD)**
Department of Physics, Indian Institute of Technology Delhi, New Delhi, India.
Dissertation: Field Emission properties of functionalized Carbon Nanotubes
Specialization: Nanoscience & Nanotechnology, Condensed Matter Physics
Advisors: Prof. Pankaj Srivastava and Prof. Santanu Ghosh

2014-16 **Master of Technology in Solid State Materials (CGPA: 8.0)**
Specialization: Condensed Matter Physics,
Department of Physics, Indian Institute of Technology Delhi, Delhi, India

2011-13 **Master of Science (MSc) in Physics (CGPA: 6.56)**
Specialization: Plasma Physics,
Department of Physics, Indian Institute of Technology Delhi, Delhi, India

2007-11 **Bachelor of Science (H) Physics (Percentage : 52.5%)**
Specialization: Physics
Shivaji College, University of Delhi

2006-07 **Intermediate (Percentage : 56%)**

Specialization: Physics, Mathematics and Chemistry
Board: CBSE
Govt. Sarvodaya Bal Vidyalaya, E Block Nand Nagri, Shahdra Delhi-110093

2004-05 **Higher Secondary (Percentage : 65%)**
Board: CBSE
Govt. Sarvodaya Bal Vidyalaya, E Block Nand Nagri, Shahdra Delhi-110093

Research Activities

Thesis Title: Field Emission properties of functionalized Carbon Nanotubes

My thesis work can be broadly described as follows.

(i) **Highly enhanced FE current density and FE image intensity in copper film decorated vertically aligned carbon nanotubes.**

(ii) **Highly enhanced field emission from vertically aligned carbon nanotubes grown on a patterned substrate via non-lithographic method**

(iii) **Impact of transition metal coating of CNTs on field emission properties: the role of delocalization of 3d electrons**

Besides my thesis work, I have also worked on structural, optical and morphological behavior of Copper oxides as my M.Tech. project dissertation at Indian Institute of Technology Delhi, Delhi.

Research Experience

- ✓ **2019-Present** **Senior Research Fellow** at Department of Physics, IIT Delhi
- ✓ **2017-19** **Junior Research Fellow** at Department of Physics, IIT Delhi
- ✓ **2015-16** **M.Tech. project student** at Department of Physics, IIT Delhi

Publications

[1]. Gulshan Kumar, Santanu Ghosh, RP Yadav, Udai B Singh, AK Mittal, Pankaj Srivastava, *Materials Chemistry and Physics*, 267, 124647 (2021).

[2]. **Gulshan Kumar**, Harsh Gupta, Santanu Ghosh, Pankaj Srivastava**,** *Physica E: Low-dimensional Systems and Nanostructures,* 135, 114946 (2022).

[3] Krishna Yadav, **Gulshan Kumar**, Ankush Kumar, S Ghosh, Menka Jha, *Material Science and Engineering B*, 282, 115759 (2022)

[4]. Krishna Yadav K., Ankush, **Gulshan Kumar**, Aarushi Arora, Santanu Ghosh, Menka Jha, *Materials Chemistry and Physics*, 125694 (2022)

[5]. Krishna K Yadav, **Gulshan Kumar**, Supriya Rana, Sunaina, Santanu Ghosh, Menaka Jha, *Applied Surface Science*, 606, 2022 154816

Conferences, Workshops & Seminars

[1] **Poster presentation at "**1st International Conference on Thin Films and Nanotechnology: Knowledge, Leadership, & Commercialization (ICTN-KLC-2021)**", IIT Delhi, India.**

[2]**Poster presentation at "**6th International Conference on Nanoscience and Nanotechnology**''** SRM Institute of Science and Technology Kattankulathur – 603203, India

[3] **Poster presentation in "**Nano 2020@ IIT Delhi**'' on Carbon nanotube Based Field emitters** , IIT Delhi, Delhi, India.

[4] Attended workshop on "Advanced Characterization Workshop on 3D Atom Probe Tomography**"** organized By IIT Delhi, Delhi , India.

Research Skills

Hands-on-experience on various thin film & nanostructure deposition techniques:

- DC magnetron sputtering for deposition of oxide thin films
- Thermal evaporation technique for thin film deposition of materials
- Fabrication of metal/metal oxide thin films by Spin Coating and Dip Coating methods

Data analysis of various analytical characterization techniques:

- Scanning and transmission electron microscopic analysis
- X-ray diffraction analysis
- Field emission Analysis
- XPS data analysis
- UV-Vis analysis

Other Academic Skills & Experience

- Teaching Assistant for B. Tech. 3rd year Laboratory, for 2 years.
- MS Office, Basics in C, C++, DBMS and Web Technology.

- Graphing software: Origin Pro.

Major Accolades

Scholastic Achievements

- **Qualified and awarded "CSIR-UGC-Junior Research Fellowship (JRF)- June 2016**" to carry out advanced research in reputed institutes of India.
- **Qualified and awarded "Graduate Aptitude Test in Engineering (GATE)-2014 Fellowship**"

Declaration

I hereby declare that the information furnished above is correct to the best of my knowledge.

Place: Hardoi
Date: 18/03/2019

Gulshan Kumar