

## Dr. Ashish Kumar

Assistant Professor (Electronics: Semiconductor Technology)

Dept of Physics, DHSGVV (A central University), M.P.

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### Career Summary:

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- 8 years of experience in semiconductor device fabrication, characterization and analysis
- List of fabricated devices: Memristor, TFTs, Bio-FETs, FETs array, system on a chip (SoC), silicon nanostructures, and Schottky Diode
- Worked on ZnO, silicon, graphene, and carbon nanotubes technology
- Experience in electrical characterization: IV, CV, split CV, pulsed IV, hysteresis, endurance, retention, and temperature based IV and CV
- Parameter extraction of devices: threshold voltage, mobility, interface states and series resistance, barrier height, ideality factor
- TCAD (Silvaco) and multiphysics study of multidisciplinary semiconductor devices
- Automated electrical measurements, parameters extraction and analysis using python and MATLAB programming
- Interdisciplinary international team coordination and project management

### Research Interest

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- Nanomaterials and Nanoelectronics (TCAD, Memristor, TFT, & WBG devices)
- Bioelectronics (Smart surfaces, Microfluidic, SOCs and their electronics)
- Neuromorphic & emerging computing architectures towards AI hardware
- Policy Analysis (*Hobby*): Global tech & innovation strategies for societal impact

### Professional Experience

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- 1. Assistant Professor-Physics (Electronics)** **Feb 2025-Till date**  
Dr. H. S. Gour Vishwavidyalaya (a Central University), Sagar, MP, India
- 2. Assistant Professor-Semiconductor Manufacturing** **August 2024- Feb 2025**  
NAMTECH, IIT Gandhinagar Research Park, Gandhinagar, Gujarat, India
- 3. Visiting Scientist (Advanced FETs & System on Chip)** **Jan 2023-July 2024**  
Institute of Agricultural Engineering - Volcani Center, Rishon LeZion, Israel
- 4. Senior Application Engineer** **July' 2021-November' 2022**  
Mylab Discovery Solutions Pvt. Ltd. Mumbai, MH, India
- 5. Postdoc Research Scientist** **May' 2020-June' 2021**  
Zhejiang University, Hangzhou, Zhejiang, China
- 6. Quick Hire Scientist (Scientist Fellow)** **May' 2017-May' 2020**  
CSIR-Central Electronics Engineering Research Institute (CEERI), Pilani, RJ, India

## **Education**

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**PhD (Micro/Nano-electronics)**

**July' 2012-March' 2017**

Electrical Engineering, Indian Institute of Technology Indore, Madhya Pradesh, India

**M. Tech. (Microelectronics & VLSI Design)**

**July' 2010-June' 2012**

Electronic Science Dept. Kurukshetra University, Kurukshetra, Haryana, India

## **Achievements and Awards**

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- **Received ARO Postdoctoral Fellowship**, Ministry of Agriculture and Rural Development, State of Israel
- Doctorate MHRD Fellowship Govt of India
- **Qualified** CBSE-UGC National Eligibility Test for JRF and Assistant Professor.
- **International Travel Awards** from SERB, Delhi and Co-operation in Science (CICS), Tamil Nadu, India
- **Internship Research Award** IIT Bombay 2011-2012

## **Language(s)**

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- English (Professional Proficiency)
- Hindi (Professional Proficiency)
- German (Basic Understanding)