



## **FACULTY PROFILE**

|                           |                               |                                                                                     |
|---------------------------|-------------------------------|-------------------------------------------------------------------------------------|
| Faculty Name              | Dr. Mandar Jatkar             |  |
| Academic Designation      | Associate Professor           |                                                                                     |
| Educational Qualification | M.Tech. Ph.D.                 |                                                                                     |
| Experience in Teaching    | 11Y                           |                                                                                     |
| Date of Joining           | 07-03-2022                    |                                                                                     |
| Official Email ID         | mandarjatkar-ece@dsatm.edu.in |                                                                                     |
| Employee ID               | 180561                        |                                                                                     |

### **Educational Details**

- PG-Certificate: Block Chain and Data Science-Indian Institute of Technology, Patna
- Ph.D. – (VLSI) Indian Institute of Information Technology Vadodara.
- M.Tech in Digital Electronics and Communication System, VTU Belagavi.
- B.E in Electronics and Communication Engineering, VTU Belagavi.

### **Professional Experience**

- Worked as Teaching Assistant in Indian Institute of Information Technology Vadodara from 01/08/2018 to 01/03/2022.
- Worked as Assistant Professor in NMIMS University Mumbai, Maharashtra from 01/06/ 2017 to 24/07/2018.
- Worked as Assistant Professor in Vivekanand Education Society's Institute of Technology Mumbai, Maharashtra from 22/07/2015 to 30/04/2017.
- Worked as Assistant Professor in S S Jondhale College of Engineering Mumbai, Maharashtra from 01/01/ 2015 to 31/05/2015.

## Publications

### 1. FTIR Spectroscopy and Machine Learning for Detection of Sudan I Dye as a Hazardous Contaminant in Turmeric Powder

- **Journal:** Journal of Environmental Chemical Engineering
- **Quality:** Q1
- **Date:** 22 June 2026
- **Issue / DOI:** Volume 14, Issue 5, October 2026, 123709

### 2. Thallium Nitride Nanosensors for Selective Detection of CO<sub>2</sub>, CO, NO, and BF<sub>3</sub> Gases: Insights from Ab Initio Molecular Dynamics

- **Journal:** Advanced Theory and Simulations
- **Quality:** Q1
- **Date:** 2026/1
- **Issue / DOI:** Volume 9, Issue 1, Pages e01198

### 3. Fluorine-passivated aluminum phosphide nanoribbons: A promising alternative for Sub-10 nm CMOS interconnects

- **Journal:** Journal of Physics and Chemistry of Solids
- **Quality:** Q1
- **Date:** 2026/01
- **Issue / DOI:** Volume 208, Part 1, January 2026, 113043

### 4. Ab-initio investigation on aluminum nitride nanoribbons for reconfigurable logic gates

- **Journal:** Diamond and Related Materials (Elsevier)
- **Quality:** Q1
- **Date:** 2025/02/07
- **Issue / DOI:** Volume 152, No.111966

### 5. Modeling and performance analysis of F-functionalized AGNR reconfigurable logic gates

- **Journal:** Diamond and Related Materials (Elsevier)
- **Quality:** Q1
- **Date:** 2024/01/3
- **Issue / DOI:** Volume 141, No. 110679

### 6. Optimized Cu/Fe doped Boron Nitride Nanoribbons as nanoscale interconnect: DFT Investigation

- **Journal:** Materials Science in Semiconductor Processing (Elsevier)
- **Quality:** Q1
- **Date:** 2024/10/9
- **Issue / DOI:** Volume 186, 109050

### 7. Detection of Gas Molecules (CO, CO<sub>2</sub>, NO and NO<sub>2</sub>) using Indium Nitride Nanoribbons for Sensing Device Applications

- **Journal:** IEEE Sensors Journal
- **Quality:** Q1

- **Date:** 2023/08/28
- **Issue / DOI:** Volume 23, No. 19

#### **8. First Principle Investigations on Gas Molecules (CO, CO<sub>2</sub>, NO, NO<sub>2</sub> and O<sub>2</sub>) Using Armchair GaN Nanoribbons for Nano Sensor Applications**

- **Journal:** IEEE Sensors Journal
- **Quality:** Q1
- **Date:** 2022/01/03
- **Issue / DOI:** Volume 22, Issue 5, Page 3896-3902

#### **9. Fermi Velocity and Effective Mass Variations in ZGaN Ribbons: Influence of Li-Passivation**

- **Journal:** IEEE Access
- **Quality:** Q1
- **Date:** 2021/11/15
- **Issue / DOI:** Volume 9, Page 154857–154863

#### **10. First principle investigation of NO<sub>2</sub> gas molecule on PtSe<sub>2</sub> nanoribbons for nanosensor applications: Insights from DFT and AIMD study**

- **Journal:** Solid State Communications
- **Quality:** Q2
- **Date:** 7 April 2026
- **Issue / DOI:** 10.1016/j.ssc.2026.116421

#### **11. Atomistic Insights into Aluminium–Boron Nitride Nanolayered Interconnects for High-Performance VLSI Systems**

- **Journal:** Computers, Materials & Continua
- **Quality:** Q2
- **Date:** 2026/3/1
- **Issue / DOI:** Volume 86, Issue 3

#### **12. DFT based study to sense harmful gases (NH<sub>3</sub>, AsH<sub>3</sub>, BF<sub>3</sub>, BCl<sub>3</sub>) using Scandium Nitride monolayer for sensing device applications**

- **Journal:** Micro and Nanostructures (Elsevier)
- **Quality:** Q2
- **Date:** 2025/02/18
- **Issue / DOI:** 208100

#### **13. DFT investigation on targeted gas molecules based on zigzag GaN nanoribbons for nano sensors**

- **Journal:** IEEE Journal of the Electron Devices Society
- **Quality:** Q2
- **Date:** 2022/01/18
- **Issue / DOI:** Volume 10, Page 139-145

#### **14. Fe-functionalized zigzag GaN nanoribbon for nanoscale spintronic/interconnect applications**

- **Journal:** Applied Physics A (Springer)
- **Quality:** Q2

- **Date:** 2021/05/14
- **Issue / DOI:** Volume 127, No 418

**15. Transition metal doping effects on scandium nitride nanoribbons for optimized VLSI interconnect modeling**

- **Journal:** Journal of Computational Electronics (Springer)
- **Quality:** Q3
- **Date:** 2026/4
- **Issue / DOI:** Volume 25, Issue 2, Pages 60

**16. First-principles investigation of F-functionalized ZGNR/AGNR for nanoscale interconnect applications**

- **Journal:** Journal of Computational Electronics (Springer)
- **Quality:** Q3
- **Date:** 2021/05/21
- **Issue / DOI:** Volume 20, Pages 1461–1470

**17. Design of FinFET Based Op-Amp Using High-K Device 22 nm Technology**

- **Journal:** Applied Mathematics, Modeling and Computer Simulation
- **Quality:** Q3
- **Date:** 2023/08/01
- **Issue / DOI:** Pages 928-939, DOI: 10.3233/ATDE2310133

**18. Design of OPAMP Based on 22 nm FinFET Technology**

- **Journal:** Lecture Notes in Networks and Systems
- **Quality:** Q4
- **Date:** 2025/03/06
- **Issue / DOI:** Volume 1208, pp 371–382

**19. Data-Analysis for Fertilizer Selection and Cost Reduction for Smart Farming**

- **Journal:** Lecture Notes in Networks and Systems
- **Quality:** Q4
- **Date:** 02 August 2026
- **Issue / DOI:** [https://doi.org/10.1007/978-3-032-27154-9\\_7](https://doi.org/10.1007/978-3-032-27154-9_7)

**29. A Hardware-Aware Trust Framework for Multi-Robot Collaboration Using Fault-Based Cryptographic Identity**

- **Journal:** Studies in Systems, Decision and Control
- **Quality:** Q4
- **Date:** 02 July 2026
- **Issue / DOI:** [https://doi.org/10.1007/978-3-032-21150-7\\_10](https://doi.org/10.1007/978-3-032-21150-7_10)

**30. Integrating Digital Twins with Multi-robot Simulation Platforms for Predictive Maintenance and Performance Optimization**

- **Journal:** Studies in Systems, Decision and Control
- **Quality:** Q4
- **Date:** 02 July 2026

- **Issue / DOI:** [https://doi.org/10.1007/978-3-032-21150-7\\_12](https://doi.org/10.1007/978-3-032-21150-7_12)

### **31. Improving the sensor capability of zigzag silicon carbide nanoribbon for the detection of harmful gases**

- **Journal:** Discover Electronics, Springer Nature
- **Quality: Peer Reviewed**
- **Date:** 2025/02/17
- **Issue / DOI:** Volume 2, Article number 7

### **32. LC Oscillator Frequency Prediction Using Machine Learning Linear Regression Algorithm**

- **Journal:** Discover Electronics, Springer Nature
- **Quality: Peer Reviewed**
- **Date:** 2025/06/25
- **Issue / DOI:** Volume 2, article number 52 (2025)

### **33. An Effective Synchronisation of ERP in Textile Industries**

- **Journal:** IEEE International Conference (ICECA)
- **Quality: Scopus**
- **Date:** 2018
- **Issue / DOI:** 969-973, 2018

### **34. Military Grade FPV Drone for Enemy Recognition: Precision**

- **Journal:** 2024 International Conference on Emerging Technologies and Innovation for Sustainability (EmergIN)
- **Quality: Scopus**
- **Date:** 2024/12/20
- **Issue / DOI:** DOI: 10.1109/EmergIN63207.2024.10961345

### **35. Design of High Performance Operational Transconductance Amplifier**

- **Journal:** ACS Journal for Science and Engineering
- **Quality:** –
- **Date:** 2023/9/1
- **Issue / DOI:** 3 (2), 21-30

### **36. Optimized Test Vector Generation and Detection of Bridging Faults in Reversible Circuits with Cryptographic Validation**

- **Journal:** 2025 International Conference on NexGen Networks and Cybernetics (IC2NC), Erode, India
- **Quality: Scopus**
- **Date:** 17 February 2026
- **Issue / DOI:** DOI: 10.1109/IC2NC67409.2025.11376017

### **37. Design and Implementation of a Voice-Assisted Mobile Robot for Elderly**

- **Journal:** 2025 International Conference on Robotics and Mechatronics (ICRM)
- **Quality: Scopus**
- **Date:** 07-08 November 2025
- **Issue / DOI:** DOI: 10.1109/ICRM66809.2025.11349010

### Conference Attended

- Participated in National Conference on Communication and Image Processing
- Participated in National Conference held by Sri Bhagawan Mahaveer Jain College of Engineering Bangalore.
- Participated in National Conference “Antenna and its applications” held by Visvesvaraya Technological University.

### Academic Activity

- Coordinator for the preparation and maintenance of NAAC Criterion 2 and NBA Criterion 5 documentation.
- Coordinator for NIRF.
- Coordinator for Website

### Faculty Development Activity/Workshops

- Completed AICTE Training And Learning (ATAL) Academy Online FDP on "Novel Materials" from 2020-11-2 to 2020-11-6.
- Completed AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Machine Learning Applications in Micro-Nano VLSI Technologies" from 2021- 06-21 to 2021-06-25.
- Attended Faculty improvement program in VESIT faculty held between 4th July to 9th July 2016.

### Contact Details

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