



Call for papers

Papers are invited in the area of Micro/Nanoelectronics, Semiconductor Materials, Devices, Circuits and Systems focused on the emerging areas such as: Advanced Logic Technology; Emerging Devices & Compute Technology; Memory Technology; Microwave, Millimeter Wave & Analog Technology; Modeling and Simulation; Optoelectronics, Displays, and Imaging Systems; Power Devices and Systems; Reliability of Systems and Devices; Sensors, MEMS, and Bioelectronics; Analog, Digital, Mixed-Signal IC Design; Embedded and FPGA based Systems design, etc. in the following conference tracks:

Micro/Nanoelectronics Devices: Device Physics, Quantum Electronics, Quantum Transport, Compact Device Modelling, LED, MOSFET, MESFET, FinFET, TFET, Beyond CMOS, III-V HEMT, Ga2O3 HEMT, SET, UWB Semiconductor Materials and Devices, 2D Materials: Graphene, Spintronics, Carbon Nanotubes.

Nanotechnology: Nanowires, Nanostructures, Flexible Electronics, High Efficiency Solar Cells, Novel Photovoltaic Concepts, Energy Storage, Advanced Energy Materials, Advanced Electronic Devices, Advanced Interconnects, Optoelectronics and Photonics etc.

Micro/Nanoelectronics Circuits: Analog VLSI Circuits, Digital VLSI Circuits, Mixed-mode VLSI Circuits, System on Chip (SoC), Bio-electronics Circuits, Circuit Optimization Techniques, Reconfigurable Circuits, HDL based FPGA Design, Testing and Verification, Packaging, Circuit Reliability, DSP based VLSI etc.

Micro/Nano Systems: MEMS/NEMS, Sensors, Actuators, Nanogenerator, Energy Harvester, Micromachining, Microfluidics, Lab-on-Chip, Health Care Systems, Embedded System Design, Biomedical Systems, IoT/IoE and Smart Systems, Robotics and Mechatronics, MEMS Packaging, System Reliability, Semiconductor Memories etc.

Important dates

Full Paper Submission in Springer LNEE Proceedings: Oct. 15, 2024
Format available online at:

<https://www.springer.com/us/authors-editors/conference-proceedings>

Notification of Acceptance: Dec. 31, 2024

Revised Paper Submission: Jan. 15, 2025

Highlights

- Keynote Talks (12+) From International/ National Experts and peer networking.
- Oral Presentations and Posters (50+).
- Industry Sessions and Industry Exhibition.
- Accepted & presented papers to be published in Springer LNEE.

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5th International Conference on

Micro/Nanoelectronics Devices, Circuits, & System (MNDCS-2025)

29-31 JAN

Hybrid mode

About the Conference

The 5th edition of Micro/Nanoelectronics Devices, Circuits, and Systems MNDCS-2025 is scheduled during **29-31 Jan, 2025** in Hybrid Mode at *National Institute of Technology (NIT) Silchar, Department of Electronics and Communication (ECE), Silchar, Assam, India* in association with **IEEE EDS NIT Silchar Student Branch Chapter** and **IEEE Nanotechnology Council Chapter**. The objective of MNDCS 2025 is to promote advanced research and developments in the areas of Micro/Nanoelectronics, Semiconductor Materials and Devices, VLSI Circuits and Systems. The conference aims to foster the theme through keynotes, invited talks, and oral/poster presentations of research articles in the most relevant areas allied to the theme of the conference. It'll also create an international platform to share research ideas, scientific thoughts and research problems among academicians, researchers, technologists and scientists.

Submission Guidelines

- Papers submission link:
<https://cmt3.research.microsoft.com/MNDCS2025>
- The peer-reviewed and selected papers of the conference would be published in Scopus indexed Springer conference proceedings in "Lecture Notes in Electrical Engineering (LNEE)" series:
<https://www.springer.com/series/7818>.
- Top quality papers will be published in MDPI Sensors Journal (SCI) and Microsystem Technologies Journal (SCI)





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Saurabhi Biswas <saurabhibiswas21@gmail.com>

Fwd: Invitation to register for Micro/Nanoelectronics Devices, Circuits, & Systems

Saurabhi Biswas <saurabhibiswas21@gmail.com>
To: Aman Jha <amanjha2410@gmail.com>

Wed, Feb 19, 2025 at 11:08 AM

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To: Dr. INDRANIL MAITY <indrnilmait026@gmail.com>

Greetings from NIT Silchar.

We congratulate you on the acceptance of your paper ID: 56 with title "DFT Based Comparative Study on Adsorption of Toxic Aromatic VOCs on Molybdenum Disulfide" for oral presentation at MNDCS-2025 and possible inclusion in the conference proceedings.

Kindly follow the instructions given below carefully:

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DFT Based Comparative Study on Adsorption of Toxic Aromatic VOCs on Molybdenum Disulfide Nanosheet

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Abstract. This study aims to examine the sensing capabilities of pristine transition metal dichalcogenide (TMD), i.e., molybdenite (MoS_2), towards benzene and toluene gas/vapor using the Gaussian 09W, GaussView 6.0, and Material Studio packages. Benzene and toluene were adsorbed on pristine MoS_2 forming benzene-adsorbed and toluene-adsorbed pristine MoS_2 sheet. Several electro-chemical properties were evaluated to determine the sensing capabilities, which includes the highest occupied molecular orbital (HOMO), lowest unoccupied molecular orbital (LUMO), electrostatic potential (ESP), projected density of states (PDOS), band structure, infrared (IR) spectra, and electron localization function (ELF) for each case. Upon analyzing the IR spectra, it was observed that the benzene-adsorbed pristine MoS_2 configuration demonstrated an enhanced symmetry. Benzene was found to adsorb with a binding distance of 1.81 Å as compared to 3.54 Å for toluene. Molecular orbital energy gap, ESP, band structure and ELF verified strong adsorption characteristics of benzene as compared to toluene. Our analysis inferred that benzene displays stronger interaction compared to toluene with pristine MoS_2 . Thus, bare MoS_2 based sensors can be used for benzene detection.

Keywords: HOMO-LUMO, ESP, PDOS, Band structure, IR spectra, ELF

1 Introduction

Over the years, there has been a significant spike in the development of gas sensors for precise detection and monitoring, adhering to the growing concerns about the detrimental impact of pollutants on the overall health of humans. Benzene and toluene are two popular compounds, which are colorless, highly flammable and are categorized as aromatic volatile organic compounds (VOCs). These gases find diverse applications in various industries, including factories producing plastics, resins, acrylic paints, thinners, etc. [1]. Being a highly volatile compound, humans can get easily exposed to

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