5th International Conference on Micro/Nanoelectronics Devices, Circuits, & System (MNDCS-2025)

29-31 JAN | **Hybrid mode**

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.

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.

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

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)

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.

Dr. Kavicharan Mummaneni
Assistant Professor
NIT Silchar, Dept. of ECE
kavicharan@ece.nits.ac.in

Dr. Rajesh Saha
Assistant Professor
NIT Silchar, Dept. of ECE
rajesh@ece.nits.ac.in

Dr. Dipjyoti Das
Assistant Professor
NIT Silchar, Dept. of ECE
dipjyoti@ece.nits.ac.in

5th International Conference on Micro/Nanoelectronics Devices, Circuits, & System (MNDCS-2025)

Organizing Committee

Chief Patron
Prof. Dilip Kumar Baidya, Director, NIT Silchar

Patrons
Dr. Koushik Guha, HoD, ECE, NIT Silchar
Prof. F. A. Talukdar, NIT Silchar
Prof. S. Baishya, NIT Silchar
Prof. K. L. Baishnab, NIT Silchar

General Chair
Dr. Jacopo Iannacci, FBK, Italy

General Co-Chair
Dr. Trupti Ranjan Lenka, NIT Silchar

Organising Chair
Dr. Kavicharan Mummaneni, NIT Silchar

Organising Co-Chairs
Dr. Rajesh Saha, NIT Silchar
Dr. Dipjyoti Das, NIT Silchar

Technical Program Chairs
Prof. Brinda Bhowmick, NIT Silchar
Dr. Himanshu Karan, NIT Silchar

Publication Chairs
Dr. Bijit Choudhury, NIT Silchar
Dr. Arun Kumar, NIT Silchar

Hospitality Chairs
Dr. S. K. Tripathy, NIT Silchar
Dr. Ujjal Chakraborty, NIT Silchar

Publicity Chairs
Dr. S. Chakraborty, NIT Silchar
Dr. Partha Pakray, NIT Silchar

National Advisory Board

Prof. L. M. Patnaik, IISc Bangalore
Prof. N. C. Shivaprakash, IISc Bangalore
Prof. Yogesh S. Chauhan, IIT Kanpur
Prof. Roy Paily Palathinkal, IIT Guwahati
Prof. Sudeb Dasgupta, IIT Roorkee
Prof. Prof. M. Anbarasu, IIT Madras
Prof. Satyabrat Jit, IIT BHU
Prof. Satinder K. Sharma, IIT Mandi
Prof. Nihar R. Mohapatra, IIT Gandhi Nagar
Prof. Ajay Agarwal, IIT Jodhpur
Prof. Shree Prakash Tiwari, IIT Jodhpur
Prof. Emeritus N. S. Murthy, NIT Warangal
Prof. P. K. Sinha, DSPM-IIIT, Naya Raipur
Prof. N. S. Murthy, NIT Warangal
Prof. K. K. Mahapatra, NIT Rourkela
Prof. R. M. Patrikar, VNIT Nagpur
Prof. Mridula Gupta, DU, Delhi
Prof. Manoj Saxena, DU, Delhi
Prof. N. Bheema Rao, NIT Warangal
Prof. C. K. Sarkar, Jadavpur University
Prof. Rakesh Vaid, University of Jammu
Prof. A. K. Panda, ECoE, BBSR
Prof. G. N. Dash, Sambalpur University
Prof. Abhijit Biswas, University of Calcutta
Prof. Mohammad Hasan, AMU, Aligarh
Prof. Sanket Goel, BITS Pilani Hyderabad
Prof. A Sarkar, Kalyani University, WB
Prof. K. Srinivasa Rao, KL University, India
Dr. Vinod Belwanshi, CSIR-NML, Jamshedpur

International Advisory Board

Prof. Samar Saha, Santa Clara Uni, CA, USA
Prof. Durgamadhab Misra, NJIT, USA
Prof. Lei Zuo, Virginia Tech, USA
Prof. Hieu P. T. Nguyen, NJIT, USA
Dr. Fuccio CRISTIANO, LAAS-CNRS, France
Prof. Jacopo Iannacci, FBK, Italy
Prof. Luisa Petti, Uni. of Bolzano, Italy
Prof. C. Jagadish, ANU, Australia
Prof. Lan FU, ANU, Australia
Prof. Yaowen Yang, NTU, Singapore
Prof. Xing Zhou, NTU, Singapore
Prof. Armin G. Aberle, NUS, Singapore
Prof. Sanjib Ku Sahoo, NUS, Singapore
Dr. Shuji Ikeda, Tei Solutions Inc., Japan
Prof. P. Susthitha Menon, UKM, Malaysia
Prof. Jan Linnros, RIT-KTH, Sweden
Prof. Ilya Sychugov, RIT-KTH, Sweden
Prof. Nguyen Truong Khang, TDTU
Prof. Pham Tan Thi, HCMUT, Vietnam
Prof. José Machado da Silva, Univer of Porto
Prof. Zoran Jaksic, Uni. of Belgrade, Serbia
Dr. Olga Jaksic, Uni. of Belgrade, Serbia
Prof. Z. Brankovic, Uni. of Belgrade, Serbia
Prof. Sergey Selischev, MIET, Russia
Dr. Betiana Lerner, NTU, Argentina
Dr. Maximilano Perez, NTU, Argentina
Dr. Massimo Donelli, Univ. of Trento, Italy
Dr. Mohamed Sultan, Qatar University

Technical Program Committee

Prof. Nihar R. Mohapatra, IIT Gandhi Nagar
Prof. Shree Prakash Tiwari, IIT Jodhpur
Prof. S. K. Vishvakarma, IIT Indore
Prof. Gaurav Trivedi, IIT Guwahati
Prof. Jawar Singh, IIT Patna
Dr. Ankush Bag, IIT Guwahati
Dr. Satyanarayana Patel, IIT Indore
Prof. Manoj Saxena, DU, Delhi
Prof. Sanjay Agrawal, IGNOU, New Delhi
Prof. Santosh K. Gupta, MNNIT, Allahabad
Dr. K. Prasannjit Pradhan, IIITDM, TN
Dr. Kavindra Kandpal, IIIT Allahabad
Dr. Deepak Bharti, MNIT Jaipur
Dr. Sumit Saha, NIT Rourkela
Prof. Santosh K. Gupta, MNNIT, Allahabad
Dr. Balwinder Raj, NIT Jalandhar
Dr. Preetisudha Meher, NIT ArunaPradesh
Dr. Gaurav. S. Baghel, NIT Silchar
Dr. K. Prasannjit Pradhan, IIITDM, TN
Dr. Balwinder Singh, C-DAC Mohali
Dr. Richik Kashyap, Assam Uni., Silchar
Dr. Rupam Goswami, Tezpur Uni., Assam
Dr. Kanjalochan Jena, LNMIIT, Jaipur
Dr. M. Krishnasamy, VIT-AP University
Dr. Arindam Biswas, Kazi Nazrul Uni., WB
Dr. Vilas H Gaidhane, BITS Pilani, Dubai
Dr. V. Narender, NIT Warangal
Dr. Ghanapriya Singh, NIT Kurukshetra
Prof. Danijel Danković, University of Nis, Serbia
Prof. Vojkan Davidović, University of Nis, Serbia
Prof. Dragana S. Krstic, University of Nis, Serbia
Prof. Zlatica Marinkovic, University of Nis, Serbia
Prof. Giovanni Crupi, University of Messina, Italy
Prof. Nour El I Boukortt, Ghent University, Belgium
Prof. Janez Krc, University of Ljubljana, Slovenia
Prof. Milos Krstic, IHP, Germany
Prof. Albena Paskaleva, ISSP, BAS, Bulgaria
Prof. Zdravko Stanimirovic, NIRS, Serbia
Prof. Ivanka Stanimirovic, NIRS, Serbia
Dr. W Vandana Devi , NIT Manipur

	Early Bird Registration		Late Registration	
Registration Fees	Indian Authors	International Authors	Indian Authors	International Authors
Academician/ Scientists	INR 7000	USD 200	INR 7500	USD 250
Industrial	INR 9000	USD 300	INR 9500	USD 350
Student	INR 5000	USD 100	INR 5500	USD 150

Bank Details

Bank name: STATE BANK OF INDIA
Address: NIT SILCHAR, ASSAM, 788010
Account name : IEEE EDS NIT SILCHAR
Bank account number: 35530045530
Swift Number: SBININBB481
IFSC code: SBIN0007061
MICR code: 788002004

- Payment to be made after acceptance of paper during registration.

Invitation to review submission for Micro/Nanoelectronics Devices, Circuits, & Systems

2 messages

Microsoft CMT <email@msr-cmt.org> Tue, Jan 7, 2025 at 6:40 PM
Reply-To: "Dr. Kavicharan Mummaneni" <kavicharan@ece.nits.ac.in>
To: Souvik Bhanja <souvik.bhanja23@gmail.com>
Cc: kavicharan.phd@gmail.com

Greetings from NIT Silchar.
We congratulate you on the acceptance of your paper ID: 52 of title: Exploring the Sensing Ability of Pristine and Ag-Doped WS_2 for Colon Cancer Biomarkers: A First-Principles Study for oral presentation at MNDCS-2025 and possible inclusion in the conference proceedings.
The instruction related to camera-ready paper and copyright form will be circulated to you after successful registration of your paper.
Kindly follow the instructions given below carefully:
1) The details for online registration with fee details are available as follows. At least one author registration per paper is mandatory.

Academician/ Scientists	INR 7000
Industrial	INR 9000
Student	INR 5000

Bank Account Details:
Bank Name: STATE BANK OF INDIA
Bank Address: (07061) – NIT SILCHAR, ASSAM, 788010
Bank Account Name: IEEE EDS NIT SILCHAR
Bank Account Number: 35530045530
Swift Number: SBININBB481
IFSC Code: SBIN0007061
MICR Code: 788002004

2) During the fee payment, please add PAPER ID_Registering Author Name in the transaction/payment remarks/description column. It will help us to track your payment easily. For e.g., if your paper id is 103, and your name is S Ganguly then you need to write 103_SGanguly in the remarks/description column during the payment.
3) Find the below mentioned registration link for your ready reference. You are instructed to complete the registration of your paper latest by 15 January 2025.
https://forms.gle/FvnQX5ZHJ2ynRY2N8

4) You are instructed to login to the Microsoft CMT portal and see the review comments of your paper. You are required to address the reviewer's comments while preparing the camera-ready paper failing which may lead to rejection of your paper.
5) The plagiarism score of your paper should be strictly less than 20% (excluding references) failing which the paper will not be considered for publication. Prepare the camera-ready final manuscript as per Spinger LNEE format given in the below link and submit the same through the CMT portal on or before 20 Jan 2025.
https://www.springer.com/us/authors-editors/conference-proceedings/conference-proceedings-guidelines

6) Please note the paper length strictly should not exceed 12 pages in the Springer format.
7) Please check thoroughly for any typographical and grammatical errors in your manuscript while preparing the camera-ready paper.

We now consider you/your co-authors committed to present the paper at the conference. We reserve the right to discard the paper from the proceedings if none of the authors/co-authors registers and presents the paper at the conference.

Please visit the conference website for program updates and registration regularly:
http://mndcs.nits.ac.in/

Souvik Bhanja <souvik.bhanja23@gmail.com> Tue, Jan 7, 2025 at 6:51 PM
To: soubarnochatterjee2002@gmail.com

[Quoted text hidden]

Exploring the Sensing Ability of Pristine and Ag-Doped WS_2 for Detection of Colon Cancer Biomarkers: A First-Principles Study

Indranil Maity[1[0000-0002-4919-3072]], Soubarno Chatterjee[1[0009-0007-2682-1535]] and Souvik Bhanja[1[0009-0005-2428-783X]]

[1] Department of Electronics and Communication Engineering (ECE), Institute of Engineering and Management (IEM), Kolkata, West Bengal, India

indrasanu026@gmail.com

Abstract. Colon cancer is one of the most common causes for cancer-related deaths all over the world. This fact alone highlights the necessity for the early detection of colon cancer in order to reduce the mortality rate. This research work explored the detection ability of pristine tungsten disulfide (WS_2) and Ag-doped tungsten disulfide (WS_2) towards cyclohexanone, which is one of the major biomarkers of colon cancer (present in a human exhaled breath), via first-principles-based calculations. Gaussian 09W and GaussView 6.0 software packages have been employed to obtain different adsorption properties. After the geometry optimization of both pristine WS_2 and Ag-doped WS_2, cyclohexanone was introduced to observe the sensing performance and mechanism of the cyclohexanone-adsorbed pristine WS_2 (P-WS_2), and the cyclohexanone-adsorbed Ag-doped WS_2 (Ag-WS_2) system. Different sensing parameters were obtained from the structures, e.g., ESP (Electrostatic Potential), Mulliken charges, DOS (Density of States), PDOS (Partial Density of States), band structure, adsorption energy, and binding distance. Electrostatic potential indicates the possible sites for nucleophilic attack (electrophilic reactivity), and electrophilic attack (nucleophilic reactivity). The band structure plots revealed that the Ag-doped WS_2 was more semi-metallic than pristine WS_2. The binding distance and adsorption energy values also helped to figure out, which sensing material is more efficient. The entropy and Gibbs free energy values were calculated with respect to different temperatures, and it was observed that Ag-doped WS_2 is more favorable for sensing of cyclohexanone. Overall, studies of these physiochemical parameters provided clear understanding about the underlying sensing mechanism and improved the quality of the potential gas/vapor sensor.

Keywords: Colon Cancer, Exhaled Breath Analysis, Tungsten Disulfide, Cyclohexanone Adsorption, Thermodynamic Study.

1 Introduction

Colon cancer, also known as colorectal cancer, is one of the most frequently occurring cancer, which causes a significant number of deaths. The risk of getting affected by this cancer gets higher as one's age crosses forties [1]. It is also known that family history

map, Mulliken atomic charges, NBO and NLO properties of benzofuran derivative. Results in Chemistry. 6, 101046 (2023).
23. Miura, K., Yokoo, S., Kimata, F.: Interaction between electric dipoles on co-adsorption energy of CO molecules and O atoms on Rh surface. Surface Science. 740, 122411 (2023).
24. Maity, I., Nagasawa, H., Tsuru, T., Bhattacharyya, P.: Correlation between ammonia selectivity and temperature dependent functional group tuning of GO. IEEE Transactions on Nanotechnology. 20, 129–136 (2020).
25. Maity, I., Bhattacharyya, P.: Room Temperature acetone sensing performance of rGO-ZnO Nanotubes Binary Hybrid Structure. Sensor Letters. 17, 417–422 (2019).
26. Kumar, V., Teotia, J., Yadav, A.K.: Vibrational (FT-Raman and FTIR) spectroscopic study, molecular structure, thermodynamic properties and non-linear optical properties of benzyl-3-oxopyperazine-1-carboxylate by density functional theory. Materials Today Proceedings. 62, 7137–7141 (2022).
27. Balachandran, V., Karpagam, V., Revathi, B., Kavimani, M., Ilango, G.: Conformational stability, spectroscopic and computational studies, HOMO–LUMO, NBO, ESP analysis, thermodynamic parameters of natural bioactive compound with anticancer potential of 2-(hydroxymethyl)anthraquinone. Spectrochimica Acta Part a Molecular and Biomolecular Spectroscopy. 150, 631–640 (2015).

5th International Conference on Micro/Nanoelectronics Devices, Circuits, & System, (Hybrid Mode), 29-31 Jan 2025
Department of Electronics and Communication Engineering, NIT Silchar, India-788010

CERTIFICATE

FOR YOUR PARTICIPATION

This certificate is proudly presented to

Indranil Maity, Soubarno Chatterjee, Souvik Bhanja

For presenting the paper entitled,

"Paper ID 52: Exploring the Sensing Ability of Pristine and Ag-Doped WS_2 for Detection of Colon Cancer Biomarkers: A First Principles Study"

MNDCS-2025

Dr. K. Guha	Prof. F. A. Talukdar	Dr. K. Mummaneni
Patron & HoD, ECE	Patron & Chair, IEEE Sub-Section	Organizing Chair