



INTERNATIONAL CONFERENCE
ON

ENGINEERED MATERIALS FOR SUSTAINABLE DEVELOPMENT

EMSD 2024

July 24-26, 2024

ORGANIZED BY

PUNJAB ENGINEERING COLLEGE (DEEMED TO BE UNIVERSITY), CHANDIGARH

AND

NATIONAL AGRI-FOOD BIOTECHNOLOGY INSTITUTE (NABI), MOHALI

Programme Schedule

Conference Venue: Punjab Engineering College (Deemed to be University), Sector 12, Chandigarh

DAY 01

Venue: Auditorium

Time	July 24, 2024
08:30 AM-09:30 AM	Registration
09:30 AM-10:15 AM	Inauguration ceremony
10:20 AM-11:05 AM	Plenary lecture-1 Dr. Reinhard Miller , TU Darmstadt, Germany Adsorption of surfactants at the water/air, water/alkane vapor and water/liquid alkane interfaces

High Tea

DST-SERB Session

Chairperson: Prof. Vasundhara Singh, Department of Chemistry, PEC Chandigarh

Rapporteur: Mr. Kamil Monga & Mr. Aman Kumar

Venue: Senate Hall

11:30 AM-12:15 PM	Plenary Lecture-2 Prof. Sudesh Kumar Yadav , Director, CSIR-IHBT, Palampur Plant and microbe-based materials for sustainable bioeconomy
12:20 PM-1:05 PM	Plenary Lecture-3 Prof. Aziz Amine , Hassan II University of Casablanca, Morocco. Recent advances in molecularly imprinted polymers combined with nanomaterials for various sensing applications.

Lunch

Frontiers Session

Chairperson: Prof. J. D. Sharma, Head, Department of Metallurgical & Materials Engineering, PEC Chandigarh

Rapporteur: Mrs. Bindu Rani & Ms. Nishi Mehak

Venue: Senate Hall

2:00 PM-2:30 PM	Keynote Lecture-1 Prof. Ajeet Kaushik , Florida Polytechnic University, Lakeland, FL-33810, US Intelligent sensing-to-sense for sustainable health and environment
2:35 PM-3:05 PM	Keynote Lecture-2 Prof. Dong-Kwon Lim , Korea University, South Korea Engineering of plasmonic nanostructures for bioanalytical sensing applications with SERS
3:10 PM-3:40 PM	Keynote Lecture 3 Prof. Sven Ingebrandt , RWTH Aachen University, Aachen, Germany Choice of electrode materials in microelectronic devices for cell-device coupling and neuroimplants

TEA & Poster Session 1: 3:30 PM-6:30 PM (P1-P50)

DBT Session

Chairperson: Prof. Vikas Rishi, Scientist G, NABI, Mohali

Rapporteur: Ms. Raman Duddi & Mr. Shubham Modgil

Venue: Senate Hall

4:00 PM-4:30 PM

Keynote Lecture-4

Prof. Federico Polo, Ca' Foscari University of Venice, Italy
Are synthetic receptors a valuable alternatives to antibodies when developing (bio-) sensing architectures for diagnostics and therapeutic drug monitoring in cancer research?

4:35 PM-5:00 PM

Invited Lecture-1

Dr. Vivek Pachauri, RWTH Aachen University, Germany
Application of metal-organic frameworks based devices in biosensors and emerging technologies

5:05 PM-5:30 PM

Invited Lecture-2

Prof. P. Gopinath, IIT Roorkee
Next-generation nanofibers: personalized drug delivery and improved tissue engineering solutions

5:35 PM-6:00 PM

Invited Lecture-3

Prof. Sonu Gandhi, DBT-NIAB, Hyderabad
Role of sensors in biomedical research

6:30 PM-8:00 PM

Cultural Program

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Programme Schedule

Conference Venue: Punjab Engineering College (Deemed to be University), Sector 12, Chandigarh

DAY 02

Venue: Senate Hall

Time

July 25, 2024

DRDO Session

Chairperson: Prof. Uma Batra, Department of Metallurgical & Materials Engineering, PEC Chandigarh
Rapporteur: Ms. Nishi Mehak & Dr. Deepti Rana

9:30 AM-10:15 AM

Plenary lecture-4
Dr. Reinhard Miller, TU Darmstadt, Germany
Achieving publications in high-impact factor journals

10:20 AM-10:50 AM

Keynote Lecture-5
Prof. David B. Amabilino, Director, ICMA, Barcelona
From natural products to sustainable materials: Gels and synthetic organic metals

10:55 AM-11:25 AM

Keynote Lecture-6
Prof. Lluís Pérez-García, University of Barcelona, Spain
Supramolecular nanomaterials and their interaction with living cells

TEA & Poster Session 2: 11:30 AM -2:30 PM (P51-P100)

JEOL Session

Chairperson: Prof. Rajat Sandhir, Department of Biochemistry, Panjab University, Chandigarh,
Rapporteur: Dr. Balwinder Kaur & Ms. Anjali
Venue: Senate Hall

11:30 AM-12:00 PM

Keynote Lecture-7
Prof. César Rodríguez-Emmenegger, IBEC & ICREA, Barcelona
Harnessing nature's blueprints to design interactive biointerfaces and synthetic cells

JEOL Session

Venue: Senate Hall

Chairperson: Prof. Rajat Sandhir, Department of Biochemistry
Panjab University, Chandigarh,
Rapporteur: Dr. Balwinder Kaur & Ms. Anjali

Waters Session

Venue: CDGC Seminar Hall
Chairperson: Dr Kanthi Kiran
Kondepudi, Scientist E, NABI Mohali,
Rapporteur: Ms. Shivani & Mr.
Mukul Kumar

12:05 PM-12:30 PM

Invited Lecture-4
Prof. Sameer Sapra, IIT Delhi,
New Delhi
Understanding self-trapped
excitons in halide perovskites

Invited Lecture-5

Dr. Arindam Malakar, University of
Nebraska, Lincoln, USA
Natural engineering of biochar
surfaces to enhance sustainable
agro-ecosystems

12:35 PM-1:00 PM

Invited Lecture-6
Prof. Pawan K. Kulriya, JNU,
New Delhi, Engineering the
structural and mechanical
properties of high entropy alloys
via energetic ion irradiation

Invited Lecture-7

Prof. Vijay Kumar, NIT Srinagar
Synthesis and photoluminescence
properties of rare-earth-doped
ternary oxide phosphors for
solid-state lighting applications

1:05 PM-1:30 PM	Invited Lecture-8 Prof. Shobha Shukla , IIT Bombay, Mumbai, Carbon-based nanomaterials for water quality sensing and purification	Invited lecture-9 Dr. Vishvanath Tiwari , Central University of Rajasthan, Ajmer, Targeted nanomaterial against AdeABC efflux pump as a potent antibacterial molecule against MDR <i>Acinetobacter baumannii</i>
Lunch		
NanoTemper Session Chairperson: Prof Sanjay Bhadada, Endocrinologist at Department of Endocrinology and Diabetes Center, PGIMER, Chandigarh Rapporteur: Navneet Kaur & Sarthak Sharma		ThermoFisher Session Chairperson: Dr Koushik Mazumdar, Scientist E, NABI Mohali, Rapporteur: Mukul Kumar & Raman Duddi
2:15 PM-2:40 PM	Invited Lecture-10 Prof. Amit Jaiswal , IIT Mandi, HP Gold-based plasmonic nanostructures for sensing and biomedical applications	OT01 Neeru Bala Inhibited Hexagonal Phase Transition in Ga Doped $\text{Ge}_2\text{Sb}_2\text{Te}_5$ Films: Advancing Power-Efficient Phase Change Memories OT02 Dr. Manju Investigating the photoluminescence and local electronic structure of Ce-Dy codoped SrZnO_2 system for solid state lighting OT03 Manpreet Kaur Morphology, Electro-optical and dielectric properties of graphene oxide doped polymer dispersed liquid crystal
2:45 PM-3:10PM	Invited Lecture-11 Prof. Tarun Kumar Sharma , GBU , Gandhinagar Harnessing functional nucleic acids for biomedical diagnostics	OT10 Dr. Jagat Rathod Unravelling the organo-mineral- microbes interactions in the biochar functional matrix for agro-environmental sustainability OT15 Dr. Neha Bhardwaj MOF-based fluorescent aptasensor for detection of mycotoxins OT 17 Dr. Navpreet Kamboj Ultrafine mix-phase SnO-SnO_2 nanoparticles anchored on reduced graphene oxide boost reversible Li-ion storage capacity beyond theoretical limit
3:15 PM-3:40 PM	Invited Lecture-12 Prof. Neetu Singh , IIT Delhi Employing nanoparticle-based approaches for sustainable plant disease management and genetic advancements	OT18 Dr.Preetismita Borah A Novel method for detection and removal of inorganic selenium by the application of Ion chromatography OT19 Dr. Kamaljeet Kaur Phone camera nano-biosensor using mighty sensitive transparent reusable upconversion paper OT 20 Rahul kumar A smart and innovative approach to recover phosphorus from water using engineered (nano)biochar and simultaneously using it as slow-release fertilizer

Klorofil Session

Chairperson: Prof. Akash Deep, Scientist G,
INST Mohali,
Rapporteur: Mr. Varun Kamboj & Ms. Twinkle

Anton Paar Session

Chairperson: Rupam Bhunia Scientist E,
NABI Mohali
Rapporteur: Ms. Shivani & Mr. Mukul Kumar

4:00 PM-4:25 PM

Invited Lecture-13
Prof. Ateet Dutt, UNAM,
Mexico
Nanotechnology Opportunities
and its scope in the Energy
and Health Sector

OT24 Dr. Vaishali Pathak Londhe
Enhanced performance of organic light
emitting diode (OLED) with dual organic
hole transport layers

OT25 Dr. Divya Gupta
Preferential sputtering driven tailoring of
structural, optical and electrical
characteristics
of oblique Ar^+ sputtered Polyethylene
(PE) surfaces

OT26 Ashwani Chauhan
A novel solution combustion method
for tertiary Cu and Zn doped NiO
nanocomposite for evaluation of its
photocatalytic activities of methylene
blue dye degradation.

OT27 Vivek Gupta
Thermoelectric materials: State of the Art

OT28 Shiwani Randhawa
Beta-amyloid oligomer targeted
dopamine-conjugated gold
nanoparticles to attenuate toxicity
in alzheimer's disease via dopadelic
boost of synaptic function

OT29 Sandharbh kumar
A personalized 3D printed device for
electrostimuli driven delivery of a
hydrophobic drug niclosamide
for oncotherapy

OT30 Piyush kumar
Melanoma diagnosis through
affordable and reliable multiplexed
electrochemical biosensor

OT31 Harish G S
Fabrication of BioPatch for
the management of xerostomial

OT32 Parth Kapil
Development of reduced graphene oxide
hydrogel based electrochemical
immunosensor for diagnosis
of oral cancer

OT33 Kanika
Leveraging Thiol functionalized
biomucoadhesive hybrid
nanoliposome for local therapy
of Ulcerative colitis

OT34 Sakshi Gumber
Development of biodegradable
antimicrobial nano-composite
packaging material for shelf-life
extension of perishable commodities

4:30 PM-4:55 PM

Invited Lecture-14
Dr. Gurwinder Singh, GICAN,
University of Newcastle,
Australia
Engineered nanoporous
carbon materials for energy
and environmental
applications

5:00 PM-5: 25 PM

Invited lecture-15
Prof. Małgorzata Kujawska,
Poznan University of Medical
Sciences, Poland
 α -Synuclein anti-aggregation
activity of samarium
functionalized few-layer
nanographene oxide

Gala Dinner in Hotel Mountview

7:00 PM-10:00 PM

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Programme Schedule

Conference Venue: Punjab Engineering College (Deemed to be University), Sector 12, Chandigarh

DAY 03

Venue: Senate Hall		CDGC Seminar Hall
Time	July 26, 2024	
	DAE-BRNS Session Chairperson: Dr Asif khan Shanavas, Scientist D, INST Mohali Rapporteur: Mr. Varun Kamboj & Ms. Twinkle	DST-RE CHD Session Chairperson: Dr Sanjeev Soni, Sr. Principal Scientist, Biomedical Applications CSIO Chandigarh Rapporteur: Mr. Kamil Monga & Mr. Aman
09:30 AM-09:55 AM	Invited Lecture-17 Prof. Narinder Singh , IIT Ropar Innovative chemosensor development for monitoring	Invited lecture-18 Dr. Hardik Gohel , University of Houston, Victoria, Visual recognition network classifier for interpretable pneumonia prediction and sustainable healthcare
10:00 AM-10:25 AM	Invited Lecture-19 Prof. Padmaja Prasad Mishra , SINP, Kokata Direct observation of adsorption, desorption and hybridization of DNA using Graphene based sensors	Invited Lecture-20 Prof. Yashveer Singh , IIT Ropar Biomaterials for wound healing and tissue regeneration
10:30 AM-10:55 AM	Invited Lecture-21 Dr. Manoj Munde , JNU, New Delhi Protein-capping as an inimitable strategy to switch DNA-Cu based 'dark' clusters to fluorescent ones	Invited lecture-22 Dr. Vinay Sharma , IIT Jammu Nanomaterials as emerging tools for modern healthcare
Tea		
	LABINDIA Session Chairperson: Prof. Sonal Singhal, Department of Chemistry, Panjab University, Chandigarh Rapporteur: Mr.Kamil Monga & Mr. Aman	Toshniwal Session Chairperson: Prof. Neeraj Khatri Senior Principal Scientist, IMTECH Chandigarh, Rapporteur: Mrs. Bindu Rani & Ms. Nishi Mehak
11:15 AM-11:40 AM	Invited Lecture-23 Prof. Praveen Kumar , IACS Kolkata, Spin-modulated photoelectrochemical hydrogen generation using quantum materials	Invited Lecture-24 Prof. Abhijit Dan , MAKAUT, West Bengal Thermoresponsive microgel- stabilized pickering liquid crystal-in-water emulsions for optical detection of chemical and biological analyte

11:45 AM-12:10 PM	Invited Lecture-25 Dr. Amitabha , CSIR-IHBT, Palampur, Understanding protein corona formation at the nano-bio interfaces and assessment of their biological implications	Invited Lecture-26 Dr Vishal Chaudhary , University of Delhi, India, Nano biosensing Sniffers for disease diagnosis
12:15 PM-12:40 PM	Invited Lecture-27 Dr. Kamil Reza Khondakar , Woxsen University, Hyderabad SERS interfaced with AI and IoMT: Next generation smart sensing tool	Invited Lecture-28 Prof. Sanjeev K. Sharma , CCS University, Meerut, Metal Oxide-CNTs enhanced the removal rate of pharma and textile discharged systems
12:45 PM-1:10 PM	Invited lecture-29 Dr. Ankit Saneja , CSIR-IHBT, Palampur Exploring sustainable food packaging: incorporating nanomaterials into chitosan-alginate films for mushroom preservation	

Lunch

Metrohm Session

Chairperson: Prof G R Chaudhary, Director SAIF/CIL,
Panjab University, Chandigarh, Rapporteur: Ms. Shivani & Mr. Mukul Kumar

2:30 PM-3:15 PM	Plenary Lecture-5 Prof. Avinash Chandra Pandey Director, Inter-University Accelerator Center, New Delhi, Accelerator based solutions for sustainable development
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3:20 PM-4:15 PM

Valedictory and prize distribution

High Tea

Organizing Committee

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Director, PEC, Chandigarh

Prof. Ashwani Pareek
Executive Director, NABI, Mohali, Punjab

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Head, Department of Physics, PEC, CHD

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