



SCHEDULE

**2024 International Conference on
"Physics and Mechanics of New Materials and Their Applications"
(PHENMA 2024)
Indore, India, November 07-09, 2024**

**Devi Ahilya Vishwavidyalaya, Institute of Engineering & Technology (IET-DAVV),
Opp. Soyabean Research Centre, Khandwa Road, Indore 452001 (M.P.)**

6 November 2024 (Wednesday)

Arrival and registration of the PHENMA 2024 participants in IET-DAVV Indore

7 November 2024 (Thursday)

Venue:

1. Opening Ceremony : DAVV Auditorium, Takshshila Campus, Bhawarkunwa.
2. Oral Presentation : Dr. Manohar Chandwani Memorial Hall, M Block, IET-DAVV, Khandwa Road, Indore.
3. Video Presentation : M Block, IET DAVV, Platform: Zoom Meeting/Google Meeting/Webex
4. Poster Presentation : M Block, IET DAVV
5. Time : Indian Standard Time (IST), Indore, India IST (UTC +5:30)
<https://www.timeanddate.com/worldclock/converter.html?iso=20230910T050000&p1=1041>

Time (UTC+5:30)	Activity
09.00 AM – 10.00 AM	1. Registration of the PHENMA 2024 participants at REGISTRATION DESK (DAVV Auditorium) 2. Video Screening of DAVV, IET and PHENMA Photos
10.00 AM – 10.05 AM	Opening Ceremony
10.05 AM – 10.15 AM	Sing: DAVV Kulgeet
10.15 AM – 10.25 AM	Opening Speech 1: Dr. Nagendra Sohani Conference Chair, Devi Ahilya Vishwavidhyalaya, Indore.
10.25 AM – 10.35 AM	Opening Speech 2: Dr. Vijay K Gupta (Indian Institute of Information Technology, Design and Manufacturing, Jabalpur)
10.35 AM – 10.45 AM	Opening Speech 3: Dr Vrinda Tokekar, Director, Devi Ahilya Vishwavidhyalaya, Indore.

10.45 AM – 10.55 AM	Opening Speech 4: Dr. Rakesh Singhai Honorable Kulguru, Devi Ahilya Vishwavidhyalaya, Indore.
10.55 AM – 11.00 AM	Congrats Address : Dr Sc. Ivan A. Parinov (Southern Federal University, Russia).
11.00 AM – 11.05 AM	Congrats Address : Dr. Shun-Hsyung Chang (National Kaohsiung University of Science and Technology, Taiwan)
11.05 AM – 11.15 AM	Souvenir Exchange
11.15 AM – 11.25 AM	Group photo
11.25 AM – 11.40 AM	Tea/Coffee Break
11.40 AM – 12.20 PM	Plenary Report 1: Pankaj Koinkar, Development of the Graphene/Metal Oxide nanocomposites for enhancing the photocatalytic Efficiency for Degradation of Organic Pollutants. Graduate School of Technology, Industrial and Social Science, Tokushima University, Tokushima, Japan.
12.20 PM – 01.00 PM	Plenary Report 2: A. S. Kornievsky, A.V. Nasedkin, A. I. Volkov., Analysis of regular piezoceramic structures composed of symmetrical Gibson-Ashby cells under different polarization models. Institute of Mathematics, Mechanics and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia.
01.00 PM – 02.30 PM	Lunch
02.30 PM – 05.00 PM	Poster - Sessions A
02.30 PM – 04.00 PM	Oral, Video Presentation - Sessions A (Chandwani Memorial Hall, M Block)
02.30 PM – 04.00 PM	Oral, Video Presentation - Sessions B (Room No. F106, F Block)
04.00 PM – 04.15 PM	Tea/Coffee Break
04.15 PM – 05.00 PM	Video Presentation - Sessions C (Chandwani Memorial Hall, M Block)

ORAL/Online/Video PRESENTATION

07 November 2024 (Thursday)

Venue:

Dr. Manohar Chandwani Memorial Hall,
1st Floor M212, M Block, Institute of Engineering & Technology, Indore

Date	November 7, 2024
	General Presentation

Time (UTC+5:30)	Session A	
	Dr. Manohar Chandwani Memorial Hall, 1st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	ORAL	
	Chairperson: Prof. Min Yen Yeh Co- Chairperson:	Chandwani Memorial Hall, M Block
14.30 – 14.45	Prof. Min Yen Yeh <i>Department of Microelectronics Engineering, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan</i> minyen@nkust.edu.tw	Crystallization and Performance of a Perovskite Photovoltaic: Insights from Solution and Hydrothermal Syntheses
14.45 – 15.00	Dr. Kumar Abhishek <i>Department of Mechanical and Aerospace Engineering, Institute of Infrastructure, Technology, Research and Management (IITRAM), Ahmedabad, Gujarat, India</i> krabhishek1987@gmail.com	Utility Function Approach Integrated with Fuzzy for Optimization in Dry Turning of Nitinol 56
15.00 – 15.15	Dr. Rahul Shukla <i>Bundelkhand University, Jhansi, India</i> rahul_shukla97@yahoo.com	Optimization of Surface Grinding Parameters for M2 HSS Steel Using 2 ³ Factorial Design
15.15 – 15.30	Dr. Rounak R. Atram <i>Department of Physics, M.M College of Arts, N.M. Institute of Science and H. R. J College of Commerce, Bhavan's College (Autonomous), Andheri West, Mumbai (M.S), India</i> rounak.atram@bhavans.ac.in	Synthesis of Biomass Carbon derived from Corn Husk for Solid State Supercapacitors
	VIDEO	
15.30 – 15.45	Chintalacheruvu Sai Kishan Reddy <i>Educational and Scientific Cluster "Institute of High Technologies" Higher School of Nanotechnology and Engineering, Immanuel Kant Baltic Federal University, Kaliningrad, Russia</i> saikishanreddy.ch@gmail.com	A Study of The Use of Coconut Fiber in Fine-Grained Concrete For 3D – Printing

15.45 – 16.00	A.D. Kogai <i>Immanuel Kant Baltic Federal University, Kaliningrad, Russia</i> ad.kogai@yandex.ru	Evaluation of the Macrokinetics Parameters of Multicomponent Cement Systems Hydration
Time (UTC+5:30)	General Presentation Session B Dr. Manohar Chandwani Memorial Hall, 1 st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	Chairperson: Dr. A.V. Cherpakov Co-Chairperson:	Room No. F106, F Block
	ORAL	
14.30 – 14.45	Dr. A.V. Cherpakov <i>Southern Federal University, Rostov-on-Don, Russia; Don State Technical University, Rostov-on-Don, Russia</i> alex837@yandex.ru	Parametric modeling of modification of T-shaped energy generator
14.45 – 15.00	Dr. Anjali Pathak <i>Department of Mechanical Engineering Govt. Polytechnic College Pachore, Rajgarh (MP), India</i> pathak.anjali2207@gmail.com	A Review on Fundamentals and Applications of Rotational Triboelectric Nanogenerator (R-TENG)
15.00 – 15.15	Dr. Shubham Kumar Mishra <i>MEMS and Microfluidics Lab, Mechanical Engineering Discipline, PDPM-Indian Institute of Information Technology Design and Manufacturing, Jabalpur, MP, India</i> zahid@iiitdmj.ac.in	Optimization of PZT Patch Placement and Geometry for Enhanced Performance of Piezoelectric Cantilever Beams
15.15 – 15.30	Dr. Brijendra Singh Choudhary <i>Department of Mechanical Engineering, Rabindranath Tagore University, Raisen, MP, India</i> brijendra.1516@gmail.com	Assessment & Enhancement of the Performance of a Pot-in-Pot Cooling Systems (PIPES) Using Phase Change Materials (PCMs)
	VIDEO	

15.30 – 15.45	<p>Yu. E. Drobotov</p> <p><i>I. I. Vorovich Institute of Mathematics, Mechanics, and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia; North-Caucasus Center for Mathematical Research of the Vladikavkaz Scientific Centre of the Russian Academy of Sciences, Vladikavkaz, Russia; ³Don State Technical University, Rostov-on-Don, Russia</i></p> <p>yu.e.drobotov@yandex.ru</p>	The Analytical Properties of Generalized Fractional Poisson-Type Equations on a Sphere and Their Solutions
15.45 – 16.00	<p>M. Yu. Narubin</p> <p><i>The Institute of Advanced Technologies "School X", Don State Technical University, Rostov-on-Don, Russia</i></p> <p>yu.e.drobotov@yandex.ru</p>	The Experience of Developing a Robotic Cooking System
Time (UTC+5:30)	<p>General Presentation Session C Dr. Manohar Chandwani Memorial Hall, 1st Floor M212, M Block, Institute of Engineering & Technology, Indore</p>	
	VIDEO	
	Chandwani Memorial Hall, M Block	
16.15 – 16.30	<p>Prof. V. Yu. Topolov</p> <p><i>Department of Physics, Southern Federal University, Rostov-on-Don, Russia</i></p> <p>vutopolov@sfedu.ru</p>	Alternative Model of a 1–1–3 Composite, Its Piezoelectric Properties and Figures of Merit
16.30 – 16.45	<p>Dr. G. A. Geguzina</p> <p><i>Research Institute of Physics, Southern Federal University, Rostov-on-Don, Russia</i></p> <p>geguzina@sfedu.ru</p>	Phase Transition Temperatures of Ternary Multiferroics and Interatomic Bond A-O Strains in Their Perovskite Structures
16.45 – 17.00	<p>Anastasia Chekhova</p> <p><i>Research Institute of Physics, Southern Federal University, Rostov-on-Don, Russia</i></p> <p>tchehova.anastasia@yandex.ru</p>	The influence of BiFeO ₃ on the structure and dielectric properties in Na _{0.5} Bi _{0.5} TiO ₃ – Na _{0.5} K _{0.5} NbO ₃ ceramics

8 November 2024 (Friday)

Time (UTC+5:30)	Activity
09.00 AM – 10.00 AM	Registration of the PHENMA 2024 participants at REGISTRATION DESK (IET DAVV)
10.00 AM – 10.40 AM	Plenary Report 1: Subhash B. Kondawar, One Dimensional Rare Earth Doped Strontium Yttrate Nanofibers for Flexible Display Devices. Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, India.
10.40 AM – 11.20 AM	Plenary Report 2: Dr Ajay Gupta, Dept of Physics, University of Petroleum and Energy Studies, Dehradun
11.20 AM – 11.30 AM	Tea/Coffee Break
11.30 AM – 05.00 PM	Poster - Sessions A
11.30 AM – 01.00 PM	Oral, Video Presentation - Sessions A (Chandwani Memorial Hall, M Block)
01.00 PM – 02.00 PM	Lunch
02.00 PM – 03.30 PM	Oral, Video Presentation - Sessions B (Chandwani Memorial Hall, M Block)
03.30 PM – 03.45 PM	Tea/Coffee Break
03.45 PM – 04.30 PM	Video Presentation - Sessions C (Chandwani Memorial Hall, M Block)

ORAL/Online/Video PRESENTATION

08 November 2024 (Friday)

Venue:

Dr. Manohar Chandwani Memorial Hall,
1st Floor M212, M Block, Institute of Engineering & Technology, Indore

Date	November 8, 2024	
Time (UTC+5:30)	General Presentation	
	Session A	
	Dr. Manohar Chandwani Memorial Hall, 1st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	ORAL	
	Chairperson: Dr. A.S. Kornievsky	Chandwani Memorial Hall, M Block
	Co- Chairperson:	

11.30 – 11.45	<p>Dr. A.S. Kornievsky</p> <p><i>Laboratory of Multiscale Model Reduction, North-Eastern Federal University, Yakutsk, Russia</i></p> <p>kornievskiy@sfedu.ru</p>	Finite Element Modeling and Comparison of Effective Properties of Highly Porous Regular Structures Based on Various Cell Types
11.45 – 12.00	<p>S.A. Egorova</p> <p><i>Southern Federal University, Rostov-on-Don, Russia</i></p> <p>sofegorova@sfedu.ru</p>	Parameter identification for the nonlinear-elastic Murnaghan model based on uniaxial tension, torsion and bending
12.00 – 12.15	<p>Dr. Ruchir Shrivastava</p> <p><i>Department of Mechanical Engineering, Indian Institute of Technology, Dhanbad, India; Department of Mechanical Engineering, Hyderabad Institute of Technology and Management, India</i></p> <p>ruchirpanduka@gmail.com</p>	An Investigation of Role of Varying Weight Percentage of MWCNT on Mechanical Strength of Glass/Epoxy Composites
12.15 – 12.30	<p>Dr. Kirtan Kumar Sahu</p> <p><i>Department of Mechanical Engineering, PDPM Indian Institute of Information Technology Design and Manufacturing, Jabalpur, India</i></p> <p>1913615@iiitdmj.ac.in</p>	Effect of material and geometry nonlinearity on buckling load capacity of two-stage hydraulic cylinder
VIDEO		
12.30 – 12.45	<p>Dr. V.A. Chebanenko</p> <p><i>I. I. Vorovich Mathematics, Mechanics and Computer Science Institute, Southern Federal University, Rostov-on-Don, Russia; Federal Research Center "Southern Scientific Center of the Russian Academy of Sciences", Rostov-on-Don, Russia</i></p> <p>valera.chebanenko@yandex.ru</p>	Optimization of Functionally Graded Piezoelectric Bimorph
12.45 – 13.00	<p>Dr. M.E. Nassar</p> <p><i>Department of Physics and Engineering Mathematics, Faculty of Electronic Engineering, Menoufia University, Menouf, Egypt</i></p> <p>mohammed.alsayed75@el-eng.menofia.edu.eg</p>	Effects of Incorporating Inhomogeneous Polarization Models and Random Representative Volume Elements on the Performance of PZT-Ni-Air and PZT-Air Piezocomposites and Analysis of their Effectiveness in Piezoelectric Devices

Time (UTC+5:30)	General Presentation	
	Session B	
	Dr. Manohar Chandwani Memorial Hall, 1st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	Chairperson: Prof. Hung-Yu Hung Co-Chairperson:	Chandwani Memorial Hall, M Block
	ORAL	
11.30 – 11.45	Akshay Khorate <i>Graduate School of Sciences and Technology for Innovation, Tokushima University, Tokushima, Japan; Institute of Post-LED Photonics, Tokushima University, Tokushima, Japan</i> koinkar@tokushima-u.ac.jp	Effect of Reducing Agent on the Synthesis of Black TiO _{2-x} Photocatalyst and its Enhanced Photocatalytic Activity via In-situ Hydrothermal Technique
11.45 – 12.00	Youhei Ohira <i>Graduate School of Sciences and Technology for Innovation, Tokushima University, Tokushima, Japan; Institute of Post-LED Photonics, Tokushima University, Tokushima, Japan</i> koinkar@tokushima-u.ac.jp	Surfactant-assisted Hydrothermal Synthesis of SnS Quantum Dots
12.00 – 12.15	Dr. Vijay Choyal <i>¹National Institute of Technology Warangal, India</i> vijaychoyal@nitw.ac.in	Machine-learned Interatomic Potentials for Lithium Based Disordered Rocksalts
12.15 – 12.30	Dr. Arpana Agrawal <i>Department of Physics, Prime Minister College of Excellence, Shri Neelkantheshwar Government Post- Graduate College, Khandwa, (M.P.) India</i> agrawal.arpana01@gmail.com	SCAPS Simulation of CdTe/CdS/SnO ₂ Solar Cell and Impact of CdTe Layer Thickness
12.30 – 12.45	Dr. R. Sunder <i>BISS Labs, ITW India (P) Ltd, Bangalore, India</i> rs@biss.in	On the Significance of Intrinsic Threshold Stress Intensity Range

12.45 – 13.00	Dr. RA. Retno Hastijanti, ST., MT. <i>Department of Architecture, Universitas 17 Agustus 1945 Surabaya, Indonesia</i> retnohasti@untag-sby.ac.id	The Challenges of Preserving Bricks in Indonesian Heritage Buildings
Time (UTC+5:30)	General Presentation Session C Dr. Manohar Chandwani Memorial Hall, 1 st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	VIDEO	
	Chandwani Memorial Hall, M Block	
15.45 – 16.00	Dr. Erni Puspanantasari Putri <i>Department of Industrial Engineering, Faculty of Engineering, Universitas 17 Agustus 1945 Surabaya, Indonesia</i> erniputri@untag-sby.ac.id	Development of MSMEs Based on a Circular Economic Management System
16.00 – 16.15	Dr. Erni Puspanantasari Putri <i>Department of Industrial Engineering, Faculty of Engineering, Universitas 17 Agustus 1945 Surabaya, Indonesia</i> erniputri@untag-sby.ac.id	Performance Evaluation Using PCA-DEA: A Case Study of the Fisheries Sector in East Java Province, Indonesia
16.15 – 16.30	Dr. Erni Puspanantasari Putri <i>Department of Industrial Engineering, Faculty of Engineering, Universitas 17 Agustus 1945 Surabaya, Indonesia</i> erniputri@untag-sby.ac.id	The influence of BiFeO ₃ on the structure and dielectric properties in Na _{0.5} Bi _{0.5} TiO ₃ – Na _{0.5} K _{0.5} NbO ₃ ceramics

9 November 2024 (Saturday)

Time (UTC+5:30)	Activity
09.00 AM – 10.00 AM	Registration of the PHENMA 2024 participants at REGISTRATION DESK (IET DAVV)
10.00 AM – 10.30 AM	Invited Talk 1 Dr Tapas Ganguly, RRCAT Indore
10.30 AM – 11.00 AM	Invited Talk 2 Dr Mukul Gupta, UGC-DAE CSR, Indore

11.00 AM – 11.15 AM	Tea/Coffee Break
11.15 AM – 11.45 AM	Invited Talk 3 Dr Ajay Kushwaha, IIT, Indore
11.45 AM – 01.00 PM	Oral, and Poster - Sessions A (Chandwani Memorial Hall, M Block)
01.00 PM – 02.00 PM	Lunch
02.00 PM – 03.30 PM	Closing Ceremony
04.00 PM – 06.30 PM	Visit to historical Monuments of Indore (Rajwada and Gandhi Hall)

ORAL PRESENTATION

09 November 2024 (Saturday)

Venue:

Dr. Manohar Chandwani Memorial Hall,
1st Floor M212, M Block, Institute of Engineering & Technology, Indore

Date	November 9, 2024	
Time (UTC+5:30)	General Presentation Session A Dr. Manohar Chandwani Memorial Hall, 1st Floor M212, M Block, Institute of Engineering & Technology, Indore	
	ORAL	
	Chairperson: Dr. Mithilesh K. Dixhit Co- Chairperson:	Chandwani Memorial Hall, M Block
11.45 – 12.00	Dr. Mithilesh K. Dixhit <i>Department of Mechanical and Aerospace Engineering, Institute of Infrastructure Technology Research and Management, Ahmedabad, Gujarat, India</i> dixit.mithilesh@gmail.com	Investigation of Mechanical Properties of h-BNNS Reinforced Polyurethane Nanocomposite using Molecular Dynamics Simulation
12.00 – 12.15	Dr. Prateek Upadhyay <i>Discipline of Mechanical Engineering, PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India</i> prateeku959@gmail.com	Design and analysis of piezoaeroelastic energy harvester for mid-range wind velocity applications subjected to random excitations

12.15 – 12.30	Dr. Rakesh Kumar Haldkar <i>Mechanical Engineering Department, St. Aloysius Institute of Technology, Jabalpur, India</i> rakeshhaldkar@gmail.com	Numerical Modelling and Analysis of a Novel Axial-Type Piezoelectric Energy Generator for Variable Load Conditions
12.30 – 12.45	Dr. P.K. Kankar <i>System Dynamics Lab, Department of Mechanical Engineering, Indian Institute of Technology Indore, Indore, India</i> pkankar@iiti.ac.in	Deep Learning and Wavelet Transform Synergy for Hydraulic System Fault Diagnosis
12.45 – 13.00	Dr. Akanksha Chaudhari <i>Department of Mechanical Engineering, Sitamarhi Institute of Technology, Sitamarhi, Bihar, India</i> chaudharyakanksha913@gmail.com	Vibration-Based Monitoring of Milling Tool Wear Using Advanced Neural Networks

10 November 2024 (Sunday)

Cultural Trip – Mandu/Omkareshwar & Departure of Participants

11 November 2024 (Monday)

Departure of Participants

POSTER PRESENTATION

7 November 2024 (Thursday): Poster Presentation Session A

M-210, 2nd Floor, M Block, IET DAVV, Khandwa Road, Indore
Time (UTC+5:30) : 02.30 PM – 05.00 PM

Chairperson :		
Co-Chairperson :		
Venue : M-210, 2 nd Floor, M Block, IET DAVV, Khandwa Road, Indore		
Time (UTC+5:30) : 02.30 PM – 05.00 PM		
No.	Authors - Affiliation	Report Title
P001	Abeer Alshoekh ¹ , Zhengyou Li ¹ , Kamaludin Abdulvakhidov ^{1*} , Bashir Abdulvakhidov ² . ¹ <i>Southern Federal University, Rostov-on-Don Russia;</i> ² <i>Dagestan State University, Makhachkala, Russia</i>	Law of approach to saturation (LAS) for (1-x)SmFeO _{3-x} NaNbO ₃ composites.