

# International Conference on “Mine Ventilation and Environment for Green Mining – MVEGM 2024”

20-22 December 2024

Swosti Premium Beach Resorts, Puri, New Marine Drive, Odisha – 752001

## SCHEDULE OF EVENTS

### Day 1: Friday, 20 December 2024

8.30 AM – 10:00 AM	Registration
9.30 AM – 11.00 AM	Inaugural Session
Inaugural High Tea (11.00 AM – 11.30 AM)	

Keynote Session (11.30 am- 1.30 pm)	
11:30 AM – 12:00 PM	Design and Implementation of Ventilation Systems of Some Large and Complex Zinc Lead-Silver Mines in India: Benefits Accrued to the Country <i>Prof D. C. Panigrahi</i>
12:00 PM – 12:30 PM	Ventilation Priorities <i>Mr. Duncan Chalmers</i>
12:30 PM – 1:00 PM	Application of Tracer Gas – A Versatile Technology for Mine Ventilation Systems Study <i>Prof. N.C. Karmakar</i>
1:00 PM – 1:30 PM	The Disruptive Evolution and Influence of Graphical Ventilation Modelling Software <i>Dr. Craig Stewart</i>
Conference Lunch (1.30 PM – 2.30 PM)	
Technical Session: I (2.30 PM- 4.00 PM) Mine Ventilation Planning and Design Heat and Mine Refrigeration	
Session Chair: Mr. Duncan Chalmers Session Co-Chair: Prof. G.K. Pradhan	
1.	Design of an efficient ventilation system for operating shallow-depth underground coal mines with multiple working seams and fans - a systematic approach <i>N. K. Mohalik, Debashish Mishra, S. K. Ray, J. K. Pandey</i>
2.	Design of ventilation system and contribution of multi-zonal ventilation in an amalgamated large underground coal mine- A case study <i>S. K. Ray, D. Mishra, N. K. Mohalik, J. Pandey, Aditya Kumar, J. K. Pandey</i>
3.	A Novel Approach to Energy Saving in Mine Ventilation Using a Nonlinear-based Chaotic Harris Hawks Optimizer

	<i>V. Mukherjee, Santosh Kumar, Ranjeet Kumar</i>
4.	Optimization of air flow and design parameters in mine ventilation <i>Veerappa Savakar, Somesh Bhambi</i>
5.	Factors Effecting Thermal Environment in Indian Mass Production Panels and its remedial measures- An appraisal <i>Achyut Ghatak, Dr. Kunal Das</i>
6.	Prediction of Face Temperatures and Humidity in Deep Underground Coal Mines with Multi-seam Workings - Practical Approach <i>Debashish Mishra, N. K. Mohalik, Aditya Kumar, S. K. Ray, J. K. Pandey</i>
7.	Assessment of Different Indices for Evaluating Heat Stress Conditions in Underground Mines <i>Durga Nookaraju Gadhi and Mahesh Kumar Shriwas</i>
8.	Leveraging MERRA-2 for Shallow Mine Ventilation: Integrating Satellite Data in Underground Climate Modelling <i>Aditya Pandey, Tanmay Das Gupta and Chinmay Mondal</i>
<b>Technical Session: II (4:15 PM- 5.45 PM)</b> <b>Spontaneous Heating, Mine Fire &amp; Explosion, and Mine Gases</b>	
<b>Session Chair: Prof. D.C. Panigrahi</b> <b>Session Co-Chair: Dr. Kunal Das</b>	
1.	Study on possibility of fire /spontaneous heating during air drilling of CBM well-A case study <i>Jitendra Pandey, S. K. Ray, A. Khalkho, Aditya Kumar, N. K. Mohalik and J. K. Pandey</i>
2.	Preventive measurement from Spontaneous Heating in Coal Mines <i>Vivek Kumar Kashi &amp; Atma Ram Sahu</i>
3.	Prediction and Prevention of Coal Spontaneous Combustion <i>Ashish Kumar Ghosh, Suraj Kumar, Saurabh Singh, Neeraj Kumar Sharma, Dhananjoy Roy, Amit S Tiwary</i>
4.	Assessment of status of mine fire in sealed off area of an underground coal mine <i>Dinesh Babu T, Devi Prasad Mishra</i>
5.	Explosion Flame Propagation Behavior of Coal Dust Clouds Under Different Experimental Conditions <i>Aashish Sahu and Devi Prasad Mishra</i>
6.	Released of radon from Jaduguda Uranium mine Exhaust: A case study <i>N. K. Sethy, R.L. Patnaik, M. K. Singh, V N Jha, Gopal Verma &amp; S K Jha</i>
<b>Conference Dinner &amp; Cultural Program @Attached Lawn, Swosti Premium Beach Resorts</b> <b>7.00 PM onwards</b>	

## Day 2: Saturday, 21 December 2024

<b>Technical Session: I (9:00 AM – 10:30 AM)</b> <b>Mine Environmental Monitoring and Control System</b>	
<b>Session Chair: Prof. N.C. Karmakar</b> <b>Session Co-Chair: Dr Ashish Kumar Ghosh</b>	
1.	Real-Time IoT Monitoring for Improved Air Quality Management in Mines <i>Kulshresth Singh, Ritik Agarwal, Sudipta Mukhopadhyay and Indrajit Banerjee</i>
2.	Control of ground vibration and insitu dust while blasting in the highly fractured limestone strata Vivek Kumar Himanshu, Ashish Kumar Vishwakarma, Saket Kumar, Sumit Prakash, Vikash Kumar, Sujit Rajak
3.	Recent Developments & Strategies in the Controlled Blasting Technology for the Stone Quarries Towards a Safe Environment <i>Dr. Bhanwar Singh Choudhary</i>
4.	Design and Development of Cryptophane-A cladded Micro Optical Ring Resonator based Methane Sensor for Underground Coal Mine Applications Aman Shekhar and Sanjoy Mandal
5.	Fugitive Greenhouse Gas Emissions in Coal Mining: Methane (CH <sub>4</sub> ) and carbon dioxide (CO <sub>2</sub> ) emission assessment in selected underground mines in Jharia Coalfield, India <i>Jaywardhan Kumar</i>
6.	Assessment of Fugitive Methane Emissions from Coal mining: From Global Inventories to High-Resolution Basin-Level Inversions Kushal Tibrewal, Philippe Ciais, Xin Lin, Marielle Saunois, Antoine Benoit, Clement Giron
7.	Application of Activated Red Mud for Efficient Removal of Sulfate from Acid mine drainage Satish Chandra Bhuyan, Pallavi Behera, Himanshu Bhushan Sahu
Tea Break (10:30 AM – 10:45 AM)	
<b>Technical Session: II (10:45 AM – 12:15 PM)</b> <b>Mine Safety, Health, and Ergonomics</b>	
<b>Session Chair: Prof. B.S. Choudhary</b> <b>Session Co-Chair: Dr. S.K. Chaulya</b>	
1.	Prevalence and Risk Factors of Work-Related Musculoskeletal Disorders among Machinery Operators in Underground Coal Mines: A Cross-sectional Study Ali Murtoja Shaikh and Bibhuti Bhusan Mandal
2.	Detection and Monitoring of Mine Slope Instabilities using Spaceborne Differential SAR Interferometry (DInSAR) Technique – Rajapur OCP, Jharia Coalfield, India <i>Sagar Ramteke and Mohammad Soyeb Alam</i>
3.	Analysis of the influence of mining induced subsidence on environment based on numerical simulation <i>Avinash Singh, Md Soyeb Alam and Dheeraj Kumar</i>
4.	Influence of resin coating on rock fracture patterns: A novel approach to enhance safety in underground mines <i>Sanjeev Kumar and Rashmi Ranjan Das</i>
5.	Efficient Contact-Less Power Transmission for Underground Mining Operations <i>Pradip Kumar Sadhu, Anik Goswami, Sagar Bhushan, Sagnik Bhattacharya, Nimesh Kumar Singh</i>
6.	Evaluating Ergonomic Hazards in the Mining Environment Under Industry 4.0: A Study on Occupational Health and Safety Challenges <i>Vikram Sakinala and P. S. Paul</i>
7.	Hazard identification by using analytical techniques <i>Pratish Sahu and Prof. Bhatu Kumar Pal</i>

<b>Technical Session: III (12:15 PM – 1:30 PM)</b> <b>Mine Dust and Control</b>	
<b>Session Chair: Prof. B.K. Pal</b> <b>Session Co-Chair: Dr. N.K. Mohalik</b>	
<b>Keynote Address:</b> Ensuring miner health and safety at the face – A design and regulate approach focused on respirable dust mitigation? <i>Prof. Sekhar Bhattacharyya</i>	
1.	Road Dust Collection and Briquetting System for Air Quality Control in Opencast Coal Mines <i>Swades Kumar Chaulya and Surajit Dey</i>
2.	Mining Dust Generation, Dispersion, and its Control: An Overview <i>Sujit Kumar Dash, Devi Prasad Mishra</i>
3.	Airborne Dust Simulation in a Mechanised Underground Metalliferous Mine Decline <i>Paluchamy B and Devi Prasad Mishra</i>
4.	Monitoring and Measurement of Airborne Respirable Dust in Opencast Coal Mines: A Case study <i>Patitapaban Sahu, Abinash Chirosantosh Sahoo, Kunal Rungta</i>
<b>Conference Lunch</b> <b>(1.30 PM – 2.30 PM)</b>	
<b>Technical Session: IV (2:30 PM – 3:30 PM)</b> <b>Underground coal gasification (UCG), CO<sub>2</sub> sequestration and carbon footprint reduction</b>	
<b>Session Chair: Prof. Sekhar Bhattacharyya</b> <b>Session Co-Chair: Prof. P.S. Paul</b>	
1.	Coal Gasification & Coal Bed Methane- Sustainable Alternatives for Utilization of Coal Resources in India <i>S. Dasgupta</i>
2.	Adsorption of CO <sub>2</sub> on Damodar Valley and Upper Assam Basin Shales – Application for Geological Sequestration <i>Basanta Kumar Prusty, Dheeraj Kumar Yarlagadda, Venkata Yaraswly Turlapati and Tuli Bakshi</i>
3.	Gravity Battery: A Scalable Solution for Renewable Energy Storage in Mining Applications <i>Pankaj Sarkar, Arnab Ghosh, Nitai Pal, Sudipta Chakraborty, Faizan A Khan</i>
4.	Review on Energy Recovery and Efficiency Enhancement in Power Hydraulic Systems Used in Off-Road Vehicles <i>Jitendra K Vishwakarma and Jayanta Das</i>
5.	COAL treads the path of CO <sub>2</sub> reduction on its journey of climate transition risk mitigation: ‘Green’ is the new ‘Black’. <i>Dr. Anindya Sinha and Smt. Suchandra Sinha</i>
<b>Technical Session: V (3:30 PM – 5:00 PM)</b> <b>Net-Zero Mining, Mine Waste Management, and Miscellaneous Topics</b>	
<b>Session Chair: Prof. Anindya Sinha</b> <b>Session Co-Chair: Prof. B.K. Prusty</b>	
1.	Paving the Way to Sustainability: Achieving Net-Zero in the Mining Industry <i>Manoj Kumar Pati</i>
2.	Pilot scale paste backfilling in underground coal mine: A case study <i>S. K. Behera, Prashant Singh, S. K. Mandal, Veerendra Singh, Narendra K. Gupta, Dev Kishan Sharma, Rahul K Singh, Rishu K. Singh, P. K. Rana</i>
3.	Synergetic interaction between natural-synthetic mixed surfactant systems for transportation of iron ore slurry <i>Umakanta Behera, Debadutta Das</i>

4.	Optimization of Selenium Removal from Aqueous Solution using Aluminium Modified Dolochar: A Response Surface Methodology <i>Pallavi Behera, Satish Chandra Bhuyan, Himanshu Bhushan Sahu</i>
5.	Enhancing Low-Grade Iron Ore Beneficiation through Magnetic Separation and Machine Learning: A Pathway to Efficiency and Sustainability in Mining <i>Rakesh Behera, Bijay Mihir Kumar and Subhendu Sekhar Sahoo</i>
6.	A Comprehensive Review of Performance Analysis of a Hydraulic Actuator-Under Different Control Strategies: Model Predictive Control (MPC) and Linear Quadratic Regulator (LQR) <i>Priyanshu Kumar, Jayanta Das and Teresa Zielinska</i>
7.	Numerical Investigation on Adoption of Savonius Vertical Axis Wind Turbine - Case Study of a Mine <i>Yashwant Kumar Singh, Subrata Kumar Ghosh, Tanmoy Maity</i>
8.	Portable Rock Drilling Mechanism for Small Size Low Depth Holes <i>Dhiraj Bajpai and Vivek Bajpai</i>

5.00 PM – 5.45 PM	Valedictory Session
5.45 pm – 6:15 PM	High Tea
Conference Gala Dinner & Musical Night @Attached Lawn, Swosti Premium Beach Resorts 7.15 PM onwards	

**Day 3: Sunday, 22 December 2024**

**Technical Tour and Sightseeing**

**9:30 AM onwards from hotel @Swosti Premium Beach Resorts**