



**CSEMM – 2022**  
**June 17-19, 2022**



**Conference Programme Schedule**

**Challenges in Safety and Environmental Management in Mines**

Department of Mining Engineering, NIT Rourkela

Venue: Conference Hall, TIIR Building

<b>TIME</b>	<b>PROGRAMME</b>
<b>PRE-CONFERENCE</b>	
<b>Day-1: 17<sup>th</sup> June 2022, Friday</b>	
<b>08.30-09.30</b>	<b>REGISTRATION</b>
<b>09.00-09.15</b>	<b>Unveiling Mining Hall of Fame</b>
<b>CONFERENCE</b>	
<b>OPENING CEREMONY</b>	
<b>09.30-11.15</b>	<ul style="list-style-type: none"><li>• <b>Inauguration Ceremony</b></li><li>• <b>Welcome Address</b></li><li>• <b>Release of Conference Souvenir</b></li><li>• <b>Presentation of Citations for Mining Hall of Fame</b></li></ul>
<b>11.15-11.30</b>	<b>High Tea</b>
<b>11.30-12.15</b>	<b>Keynote Address 1</b> <i>Mining Engineering Education at the Cross roads</i> <i>Prof. K U Rao, Director, NITR</i>
<b>12.15-13.00</b>	<b>Keynote Address 2</b> <i>Sustainable and Responsible Mining by Tata Steel Limited</i> <i>D B Sundara Ramam, Vice President.Raw Materials, Tata Steel Ltd.</i>
<b>13.00-13.10</b>	<b>Inauguration of Exhibition</b>
<b>13.00-14.30</b>	<b>Lunch Break</b>

14.30 -14.50	<p><b>Guest Lecture</b>  <i>Environmental Management in SAIL Iron Ore Mines</i>  <i>M Srinivasu, RSP, SAIL</i></p>
14.50 -16.05	<p><b>Technical Session I-A (Room No 108)</b>  <b>Environmental and Operational Safety in Mines - I</b></p>
	<p><b>Chair: Prof. B K Pal, Prof. Rajesh Rai</b></p> <p>Fire combating techniques for improvement of safety in coal mines  <i>S K Ray, N K Mohalik, D Mishra, J Pandey, J K Pandey, CIMFR Dhanbad</i></p> <p>Effective utilisation of bulk emulsion explosives in the development face blasting of underground metalliferous mine for safer mining atmosphere  <i>A K Vishwakarma, V K Himanshu, D Gorain, S Singh, S Kumar, M P Roy, CIMFR, Dhanbad</i></p> <p>A blast damage predictive model for improving safety in surface mines  <i>Satyabrata Behera &amp; Kaushik Dey, IIT Kharagpur</i></p> <p>Comparative Study of Environmental &amp; Safety Hazards Generated from Rock Blasting, Machinery Operation and Transportation  <i>V K Himanshu, A K Vishwakarma, R. S. Yadav, M. P. Roy &amp; P. K. Singh, CIMFR, Dhanbad</i></p> <p>JSW – Odisha Mines Digitalization Outlook  <i>Biraja Kinkar Das, Rakesh Choudhary, JSW Steel Ltd – Mines Division, Barbil, Keonjhar</i></p>
16.05-16.15	<p><i>Presentation by Mine Magma</i></p>
14.50 -16.15	<p><b>Technical Session I-B (Room No. 120)</b>  <b>Mine Automation</b></p>
	<p><b>Chair: Prof. H. K. Naik &amp; Prof Sahendra Ram</b></p> <p>Verification of stress state monitoring in the surroundings of the roadway ahead of longwall mining based on the results of 3D scanning of roadway deformation, Bogdanka Mine, Poland  <i>Petr Waclawik, Radovan Kukutsch (Institute of Geonics)(online)</i></p> <p>A Comprehensive Review on Role of Internet of Things Technologies in Wireless Environmental Monitoring System for Underground Mining  <i>Anil S Naik ,Sandi Kumar Reddy (online)</i></p> <p>IIoT based Crack Detection and Rescue Action Support in Underground Mines  <i>Kasina J. Swaroop, Akshay Kr. Saunta</i></p> <p>A Cyber Physical System approach to design UGV for Safety Inspection &amp; Rescue Action Support in Underground Mine  <i>A Sonta, K J Swaroop, A Raj, S Singh, S Agarwal, L. K. Behera</i></p> <p>Scope of FBG based Sensors in Mining Engineering  <i>Sandi Kumar Reddy, Mandela Govindaraj, Rammohan Perumalla (online)</i></p> <p>Application of Unmanned Aerial Vehicles to get the vertical distribution of PM near an urban road at Kolkata, India.  <i>Ravish Dubey, Aditya Kumar Patra IIT KGP (online)</i></p>

16.15-16.20	<b>Tea/Coffee Break</b>
16.20-18.05	<b>Technical Session II</b> <b>Environmental and Operational Safety in Mines -II</b>
	<b>Chair: Prof. M. K. Mishra &amp; Prof. D.S. Nimaje</b>
	Enhancing the Safety and Productivity of UG Coal Mines through Strata Behaviour Monitoring using Innovative Approaches J Pramanik, A K Sahoo, S Jayanthu, A Kumar Samal, S K Dogra; <i>Centurian University, Bhubaneswar; NIT Rourkela</i>
	Impact on Environment and Safety due to Blasting in Indian Opencast Mines: Strategies for Prevention <i>Sunil Kumar Bisoyi, Prof. F. Sarkar; NIT Rourkela</i>
	The impact of mechanical shock due to heavy machinery on elbow and shoulder joints: a theoretical study <i>Yugesh Ramdhun, Ravi Kant Avvari, Singam Jayantu, NIT Rourkela</i>
	Characterization of airborne respirable dust particles emitted from an opencast coal mine. <i>Abinash Chirosantosh Sahoo, Patitapaban Sahu; IIT ISM Dhanbad</i>
	Environmental Management Best Practices in MCL <i>P K Mohanty, MCL</i>
	Particulate Matter Variability over Talcher Coal Fields for 2019-2021 <i>Anuj Shrivastava, Bhishma Tyagi; H. B. Sahu NIT Rourkela</i>
	Stability Study of Natural Supports During Development and Depillaring Workings at Different Depths <i>Abhishek K Singh, Sahendra Ram, Petr Waclawik, Ashok K, Birendra K. Thakur; NIT Rourkela</i>
18.05-18.15	Presentation by Hexagon
18.15-18.25	Presentation by Unite Traders & Technology
<b>Day-2: 18<sup>th</sup> June 2022, Saturday</b>	
09.00-09.30	<b>Keynote Address 3</b> Association of some factors to whole-body vibration exposure of dumper operators in iron ore mines <i>Prof Ashish Bhattacharjee, Department of Mining Engineering, IIT Kharagpur</i>
09.30-10.00	<b>Keynote Address 4</b> Best Practices in Safety Management across Coal Mining Projects of NTPC <i>Amit Kumar Dubey, Head of Mine Safety and Planning, Coal Mining Headquarters, Ranchi, NTPC</i>
10.00-11.15	<b>Technical Session III</b> <b>Environmental Monitoring and Management in Mines I</b>
	<b>Chairs: Prof. Md. Equieenuddin &amp; Dr. Niroj K. Mohalik</b>
	A study on airborne dust generation in fully mechanised underground metalliferous mines <i>B. Paluchamy and Devi Prasad Mishra, IIT ISM Dhanbad</i>

	<p>Responsible and Eco-friendly Mining Initiative by Adani Enterprises Limited: A Case Study <i>Suryanshu Choudhury, Shanto Mukherjee, Satish K. Sinha; Adani Enterprises Ltd., Ahmedabad.</i></p> <p>A comparative evaluation of object-based classification and pixel-based classification of satellite image for LULC study of mining regions <i>Ajay Kumar and Amit Kumar Gorai; NIT Rourkela</i></p> <p>Assessment of Impact of Iron and Manganese Mining on Human Health <i>Simanchala Dash, H. B. Sahu, Ashusosh Das, B N Mohapatra; SPCB Bhubbaneswar and NIT Rourkela</i></p> <p>Sustainable Development for Coal Sector in India <i>Pritam Kumar Sinha, Hemant Kumar; NLCIL, India</i></p>
11.15-11.25	Presentation by Datoms
11.25-11.35	Presentation by Orbit Technologies Pvt. Ltd
11.35-11.45	<b>Tea/Coffee Break</b>
11.45-13.30	<p><b><i>Technical Session IV</i></b> <b><i>Environmental Monitoring and Management in Mines II</i></b></p>
	<p><b><i>Chair: Amit Kumar Dubey &amp; Prof. D. P. Mishra</i></b></p> <p>Water Pollution Arising due to Coal Mining activities in Northeast India and its Impact on Environment <i>Shivani Rawat, Jaydev Kumar Mahato and Sunil Kumar Gupta, IIT BHU Varanasi</i></p> <p>Mine Discharge water – A review of phytoremediation techniques practiced across the world <i>S. Shyamala, Kaushik Dey, IIT Kharagpur</i></p> <p>Environmental &amp; Human Health Impact of Particulate Matter from Open Cast Mining Operations <i>Pratik Gedam, Nitin Kumar, Sunil Kumar Gupta IIT (ISM) Dhanbad</i></p> <p>Removal of Hexavalent Chromium by Phytoremediation Using Water Hyacinth in the Aqueous Phase <i>Pallavi Behera, H. B. Sahu, Rakesh Roshan Dash, NIT Rourkela and VSSUT Burla</i></p> <p>Development of a Failsafe Brake Management System (FBMS) for underground passenger vehicles: an integration of STPA and FMEA <i>Falguni Sarkar, Sudip Das, B.K.Pal, NIT Rourkela</i></p> <p>Modified Coal Mine Waste as an Adsorbent for Fluoride Removal <i>Bidyutprava Behera, H. B. Sahu NIT Rourkela</i></p> <p>Sustainable Development Framework: Redefining The Indicators <i>Suraj Ranjan Prasanjit, Manoj Kumar Pati, OMC Bhubaneswar</i></p>
13.30-14.30	<b>Lunch Break</b>

14.30-15.00	<p><b>Keynote 5</b></p> <p>Innovation &amp; use of Technology in Health &amp; Safety in Mining Operation  <i>Sabyasachi Mohanty, Director Technical (Operations), OMC</i></p>
15.00 – 16.15	<p><b>Technical Session V</b></p> <p><b>Modelling and Simulation for Decision Making in Mines I</b></p>
	<p><i>Chairs: Prof. Ashok Jaiswal &amp; Suryanshu Choudhury</i></p> <p>Modelling Diesel particulate matter (DPM) dispersion in underground metalliferous mines  <i>Kaustuv Ray, Tushar Gupta, Falguni Sarkar, NIT Rourkela</i></p> <p>Application of Numerical Modelling for Rock Reinforcement  <i>Ankita, Raghav Prasad Dubey, Ashok Jaiswal and Rajesh Rai, IIT BHU Varanasi</i></p> <p>Prediction of Slope Failure Susceptibility of a Mine using PCA and K-means Clustering  <i>Virendra Kumar, Suryajyoti Nanda, Shantanu Kumar Patel, IIT Kharagpur</i></p> <p>Understanding the Science of Longwall Face Spalling: Field Observation and Numerical Modelling Study  <i>B. Behera, A. Yadav, G.S.P. Singh and S.K. Sharma, IIT BHU Varanasi</i></p> <p>Ultimate Pit Design in Open Cast Workings: A Numerical Simulation Approach  <i>Rizwan Hasim · R. S. Munda · Birendra Tudu Prakash Kumar Mahato; IIT ISM Dhanbad</i></p>
16.15-16.25	<p>Presentation by EDS Technologies</p>
16.25-17.10	<p><b>Keynote 6</b></p> <p>Connected Worker for Mining and Underground Environments  <i>Saikat Dey, Co-founder and CEO, and Sarah Kolharn, CMO; Guardhart Inc, USA (Online)</i></p>
17.10-18.25	<p><b>Technical Session VI</b></p> <p><b>Modelling and Simulation for Decision Making in Mines II</b></p>
	<p><i>Chairs: Paramananda Guin &amp; Dr Sahendra Ram</i></p> <p>Geological Modelling of a Coal Deposit using MINEX Software- A Case Study  <i>A K Singh , S K Reddy, NIT Surathkal (Online)</i></p> <p>Surface Monitoring Analysis of High Wall Slope in India By using Numerical Modelling Approach  <i>Mohammed Asif , Ram Manohar Bishwal</i></p> <p>Iron ore mapping using band rationing technique of Landsat-8 data  <i>Manasa. P, Sandeeptha Sahoo, A. K. Ranjan, A. K. Gorai</i></p> <p>Evaluation of Blasting Mechanism by Developing an Empirical Relation Using Kuz-Ram Model-A Case Study  <i>Abinash Parida, Soumya Ranjan Mallick, GCE KEonjhar</i></p> <p>Thermal Remote Sensing based Monitoring of Mine Fire using Google Earth Engine  <i>Nikhil Prakash, Colorado School of Mines (online)</i></p>

<b>Day 3: 19<sup>th</sup> June 2022, Sunday</b>	
<b>9.00 -10.15</b>	<p><b>Technical Session VII</b> <b>General Environment and other Issues</b></p>
	<p><i>Chairs: Prof. S. Bhowmik &amp; Prof. Falguni Sarkar</i></p>
	<p>Improving The Performance Curve of a Centrifugal Dewatering Pump Used in Mine – A <i>Rohit Kumar, D. S. Nimaje, NIT Rourkela</i></p> <p>Evaluation and Laboratory Investigation on the Impact of Dust Deposition on Solar Photovoltaic Panels in the Mining Industry. <i>Ganti Praful Kumar, Hrushikesh Naik, NIT Rourkela</i></p> <p>Characterization of Talcher Coal for Gasification Study <i>Mahima Panda, Sk. Md. Equeenuddin, Debadutta Mohanty, NIT Rourkela</i></p> <p>Ambient Air Quality Monitoring along Highway in Dhanbad India <i>D.K. Patel, M.K. Jain, IIT (ISM) Dhanbad</i></p> <p>Water Management in Opencast metal mines: A Case Study <i>H. B. Sahu, Sk. Md. Equeenuddin, Nikhil Prakash, Satish Chandra Bhuyan; NIT Rourkela</i></p>
<b>10.15-10.30</b>	<b>Tea Break</b>
<b>10:30-11:00</b>	<p><b>Guest Lecture</b> <i>Dr. Bibhuti B. Panda, Sr. Geotechnical Engineer, AECOM, USA</i></p>
<b>11.00-12.15</b>	<p><b>Technical Session VIII</b> <b>General Environment and Other Issues</b></p>
	<p><i>Chairs: Prof. B K Pal &amp; Dr. B. B. Panda</i></p>
	<p>Application of Blast Free Mining Technology by Using Xcentric Ripper for Effective Removal of Hard Over Burden in Blasting Prohibited Area for Coal Exposure at Hingula Open Cast Mine of M/S- Mahanadi Coalfields Limited- A Case Study <i>Paramananda Guin, CCL</i></p> <p>Reinforcement: A way forward for strengthening paste fills and its necessity to underground coal mines <i>Kanhaiya Mishra, S. K. Behera, Prashant, Sujit K Mandal, Ritesh Kumar, Phanil K Mandal, Surajit Dey</i></p> <p>Strength Evaluation of RBI Stabilized Mine Overburden Composites as an Alternative Haul Road Construction Material <i>S R Mallick, A K Verma, K U M Rao</i></p> <p>Success Story of Roof Fall Prediction During Pillar Extraction in A Trialed Panel of Tawa-Ii Mine Using Continuous Miner Technology <i>Ashok Kumar, Arun Kumar Singh, Dheeraj Kumar, Sahendra Ram, Rakesh Kumar, Amit Kumar Singh, CIMFR, NIT Rourkela</i></p> <p>Sustainable development project for ecological restoration of mined out areas, waste dumps, and mine void at Purnapani Limestone and Dolomite Quarry Mining Lease, Purnapani Odisha <i>Aindrila Chanda, SAIL</i></p>

12.15-12.25	Presentation by AIMIL
12.25-12.35	Presentation by Unicore Emergency Equipment Pvt. Ltd.
12.35-12.45	<b>Break</b>
12.45-13.30	<b>Valedictory Session</b>
	<ul style="list-style-type: none"> <li>• Summary of the Conference</li> <li>• Feedback from Participant</li> <li>• Vote of Thanks</li> </ul>
13.30 –14.30	<b>Lunch</b>

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