

1st International Symposium on Mine Dust and Aerosol Research Conference Agenda



Monday, November 15, 2021

8:00am - 8:10am	Opening General Session - Welcome/Chapter Introductions <i>Dr. Liang Yuan and Conference Chair Shimin Liu</i>	
8:10am - 10:30am	Keynote Session	
8:10am - 8:40am	Occupational Health Challenges in China's Mining industry and Countermeasures <i>Liang Yuan, Professor, Academician of Chinese Academy of Engineering, President of Anhui University of Science and Technology</i>	
8:40am - 9:20am	Mine Dust Research Gaps Based on NASEM Report and Lessons Learned for Dust Characterization <i>Emily Sarver, Associate Professor, Virginia Tech</i>	
9:20am - 10:00 am	Characterization of Particulates in Australian Mines <i>Nikky LaBranche, Researcher, University of Queensland</i>	
10:00am - 10:30 am	Prevalence of Pneumoconiosis and Counter Measures in China Coal Mines <i>Jun Ma, Professor, Secretary General of China Occupational Safety & Health Association (COSHA)</i>	
10:30am - 10:50am	Break/ Breakroom Networking	
10:50am - 12:10pm	Technical Session 1 Dust and Aerosol Characterization I	
10:50am - 11:10am	Segregation Of Respirable Dust for Chemical and Toxicological Analyses <i>Teresa L. Barone, Chemical Engineer at Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Pittsburgh</i>	

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11:10am - 11:30am	Toxicity of Respirable Coal Mine Dust: Study of Metals Dissolution of RCMD in Lung Fluids <i>Pedram Roghanchi, Assistant Professor, New Mexico Tech University</i>	
11:30am - 11:50am	Air Quality Monitor and Control in Underground Coal Mines- A Case Study <i>ShengXue, Professor, Anhui University of Science and Technology</i>	
11:50am - 12:10 am	Study on Acceleration Characteristics of Compound Flame of Gas / Coal Dust Explosion <i>Pei Bei, Professor, Henan Polytechnic University</i>	
10:50am - 12:10pm	Technical Session 2 Best Practices for Dust Control I	
10:50am - 11:10am	Prevention and Control Technology of Typical Dust Sources in Metal Mines <i>Gang Li, Professor and Chief Engineer, SINOSTEEL</i>	
11:10am - 11:30am	Experimental Investigation on Highly Efficient Collection and Cleaning for Fine Coal Dust Particles by Dry-Wet Mixed Chemical Method <i>Gang Zhou, Professor, Shandong University of Science and Technology</i>	
11:30am - 11:50am	Coal Dust and Moisture Interactions and Its Implication on Water Uptake and Dust Control <i>Sikandar Azam, Graduate Researcher and Teaching Assistant, Penn State University</i>	
11:50am - 12:10 am	Water Injection into Coal Seam and Its Implication on Dust Control <i>Yanbin Yu, Associate Professor, Shandong University of Science and Technology</i>	
12:10pm - 1:00pm	Lunch Break	
1:00pm - 2:40pm	Technical Session 3 Dust and Aerosol Health Effects and Regulatory Policy	

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1:00pm - 1:20pm	Lung-Based Exosomal Inhibition Mediates Systemic Impacts Following Mine-Site Derived Particulate Matter Exposure <i>Katherine Zychowski, Assistant Professor, The University of New Mexico</i>	
1:20pm - 1:40pm	Improving Self-Efficacy in Care of Miners by Multidisciplinary Groups Via Virtual Community Partnerships <i>Kevin Vlahovich, MD, The University of New Mexico</i>	
1:40pm - 2:00pm	Particulate Matter: Fine and Ultrafine - How Emerging Data on Engineered Nanomaterials May Change How We Regulate Worker Exposures to Dust <i>Jeremy M. Gernand, Associate Professor, Penn State University</i>	
2:00pm - 2:20pm	Toxicity of the Respirable Dust - An Overview <i>Eskanolou Amir, Graduate Student, Penn State University</i>	
2:20pm - 2:40pm	An Investigation of RCMD and RCS in the U.S. Underground and Surface Coal Mines <i>Younes Shekarian, Graduate Student, Penn State University</i>	
2:40pm - 3:00pm	Break/ Breakroom Networking	
3:00pm - 5:00pm	Technical Session 4 Dust Generation and Transport	
3:00pm - 3:20pm	Dust in Mining Environment, Control Standards, and Research on Drilling Dust <i>Yi Luo, Professor, West Virginia University</i>	
3:20pm - 3:40pm	Improved Canopy Air Curtain Dust Protection Using A Novel Design Combining the Impinging Jet and A Two-Level Manifold <i>Guang Xu, Associate Professor, Missouri University of Science and Technology</i>	

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3:40pm - 4:00pm	Airborne Dust Generation and Dispersion Due to Remote LHD Mucking in An Open Stope of A Mechanized Underground Metalliferous Mine <i>Paluchamy B., Indian Institute of Technology (Indian School of Mines) Dhanbad</i>	
4:00pm - 4:20pm	The Fate of Inhaled Uranium-Containing Dust Upon Clearance to Human GI Tract <i>Milton Chandra Das, Graduate Student, New Mexico Institute of Mining and Technology</i>	
4:20pm - 4:40pm	Simulation Study on Multi-phase Coupling Law of Airflow-Droplet-Dust in Fully Mechanized Mining Face <i>Haiming Yu, Lecture, Shandong University of Science and Technology</i>	
4:40pm - 5:00pm	A Systematic Review of Occupational Exposure to Respirable Coal Mine Dust (RCMD) in the Mining Industry <i>Younes Shekarian, Graduate Student, Penn State University</i>	

Tuesday, November 16, 2021

8:00am - 10:20am	Keynote Session	
8:00am - 8:30am	Dust Control Theory and Technical Equipment System of Difficult Wetting Coal Seam in Mining Face <i>Weimin Cheng, Professor, Shandong University of Science and Technology</i>	
8:30am - 9:10am	Overview of Respirable Crystalline Silica (RCS) Air Sampling and Laboratory Analysis <i>Keith Rickabaugh, CIH, Technical Director at RJ Lee Group</i>	
9:10am - 9:50am	NIOSH Mining Research for Respirable Coal and Silica Dust <i>Randy Reed, Office of Mine Safety and Health Research, NIOSH</i>	

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9:50am - 10:20am	New Respirator Fit Test Panels Representing the Current Chinese Civilian Workers <i>Weihong Chen, Professor, Huazhong University of Science and Technology</i>	
10:20am - 10:40am	Break/ Breakroom Networking	
10:40am - 12:00pm	Technical Session 5 Dust and Aerosol Characterization II	
10:40am - 11:00am	IJCS&T, Special Issue of Dust Control <i>Wanjie Wang, Managing Editor of IJCS&T</i>	
11:00am - 11:20am	Study on the Dust Control Technology of Surfactant-Magnetized Water in the Underground Coal Mine <i>Botao Qin, Professor, China University of Mining and Technology</i>	
11:20am - 11:40am	Characterization of Nano-to-Micron Sized Respirable Coal Dust: Particle Surface Alteration and the Health Impact <i>Shimin Liu, Associate Professor, Penn State University</i>	
11:40am - 12:00pm	Characterization of Mine Dust Using Automate SEM Techniques <i>Gary Casuccio, Senior Scientist & Vice President, RJ Lee Group</i>	
10:40am - 12:00pm	Technical Session 6 Best Practices for Dust Control II	
10:40am - 11:00am	Shot-Crete Technology and Dust Control: Research and Application <i>Lianjun Chen, Professor, Shandong University of Science and Technology</i>	
11:00am - 11:20am	Study on the Law of Dust Pollution and High Efficient Control Technology in Fully mechanized Excavation Face of Coal Mine <i>Wen Nie, Professor, Shandong University of Science and Technology</i>	

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11:20am - 11:40am	Dust Generation Mechanism During Coal Cutting by Roadheader Hetang Wang , Professor, China University of Mining and Technology	
11:40am - 12:00pm	Effects of Solid Inertants on the Dispersion and Deflagration of Combustible Dust Clouds Chunmiao Yuan , Associate Professor, Northeastern University, China	
12:00pm - 1:00pm	Lunch Break	
1:00pm - 3:00pm	Technical Session 7 Best Practices for Dust Control III	
1:00pm - 1:20pm	Effectiveness of Filtering Facepiece Respirators and Elastomeric Half-mask Respirators against Nanoparticles Xinjian He , Professor, China University of Mining and Technology, China	
1:20pm - 1:40pm	Wireless Measurement of Respirable Dust Using Inexpensive Sensors in Surface Mines William A. Groves , Associate Professor, Penn State University	
1:40pm - 2:00pm	Development of a Roof Bolter Drilling Control Process to Reduce the Generation of Respirable Dust Hua Jiang , Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Pittsburgh	
2:00pm - 2:20pm	Mine Dust Exposure Monitoring and Control of the Future Belle Bharath , Technical Manager of Anglo American Group's Coal Business; Adjunct Professor of Mining Engineering at the University of New South Wales, University of Queensland and the University of Pretoria	
2:20pm - 2:40pm	Calibration Of Low-Cost PM Sensors for Coal Dust Monitoring Guang Xu , Associate Professor, Missouri University of Science and Technology	
2:40pm - 3:30pm	Break/ Breakroom Networking	

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3:30pm - 5:30pm	Roundtable Discussion
	Location (in-person): <i>Room C213, Energy Institute</i> Participants: • <i>Joseph Sbaffoni, Retired PA DEPA</i> • <i>Barb Arnold, Professor in Practice, Penn State</i> • <i>Shimin Liu, Associate Professor, Penn State</i> • <i>William Groves, Associate Professor, Penn State</i> • <i>Randy Reed, NIOSH</i> • <i>Sam Baker, Rosebud Mining</i> • <i>Teresa L. Barone, NIOSH</i> • <i>William Hudak, Pennsylvania Department of Environmental Protection</i> • <i>Tom Richard, Director of IEE, Penny State</i> • <i>Cheryl Spellman, Pennsy Supply Inc</i> • <i>Belle Bharath, Technical Manager of Anglo American Group's Coal Business</i> • <i>xxx</i>