

ICBMH2023

The 14th International Conference on Bulk Materials Storage, Handling and Transportation

Venue: The Sage Hotel, Wollongong, NSW, Australia

Dates: 11-13 July 2023

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DRAFT PROGRAM V3

Organised By



Conference Sponsors



Monday 10-7-2023

18:00 - 20:00	Welcome Reception The Illawarra Brewery (Boardroom and Courtyard) Eastern Terrace, Win Entertainment Centre, Crown Street, Wollongong
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Tuesday 11-7-2023

8:30 - 9:00	Conference Registration
9:00 - 9:10	Welcome by Conference Chair
9:10 - 9:30	Welcome Address - TBA
9:30 - 10:05	KEYNOTE 1 - GRAND PACIFIC BALLROOM 140 Years of Developments in Bulk Solids Handling Focusing on Bin and Silo Loads Em/Prof Alan W. Roberts

10:05 -10:40	Morning tea
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SESSION 1	SESSION 1A - GRAND PACIFIC BALLROOM Belt Conveying Session Chair:	SESSION 1B - ESCARPMENT ROOM Simulation Session Chair:	SESSION 1C - FORESHORE ROOM Environmental Session Chair:
10:40 - 11:05	The Effect of Large Diameter Idler Rollers on the Indentation Rolling Resistance of Belt Conveying Systems Jayne O'Shea, <u>Peter Robinson</u> , Yusuf Badat, Craig Wheeler	Application of New DEM-SPH fully coupled approach in prediction of slurry-particle flow in a SAG mill Vinicius Daroz, Lucilla Almeida, Rahul Bharadwaj, Alexander Potapov and <u>Lewis Clark</u>	Investigations into Optimal Pulse Cleaning of Dust Filter Media <u>Richard Farnish</u> , Michael Bradley, Vivek Garg
11:05 - 11:30	Generalized Conveyor Design for In-Pit Crushing and Conveying (IPCC) <u>Nicholas S. Russell</u>	A Coupled Length Scale Parameter Study for SPH Simulations of a Fluid Flow Inside a Rotating Drum <u>Nam Tran</u> , Jon M. Roberts, David B. Hastie	Determination of the Percentage of Free Hydrogen After the Placement of Cemented Fly Ash Grout <u>Thomas Bunn</u> , Shaun Reid, Tim Gilroy, Marta De Sousa Felix
11:30 - 11:55	Closed Belt Conveyor Systems: An Update on Operational Performance <u>Gabriel Lodewijks</u>	DEM Modelling and Calibration of the Interlocking Behaviour of Compost and Validation using a Commercial Compost Turner (eWender) Mohsin Ajmal and <u>André Katterfeld</u>	Simulation of Dust Elimination during Hot Casting Residue Dumping Process <u>Ting Ye</u> , Haozhi Guo, Kejiang Zang, Shaozong Cai

12:00 - 13:30	Lunch
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SESSION 2	SESSION 2A - GRAND PACIFIC BALLROOM Environmental Session Chair:	SESSION 2B - ESCARPMENT ROOM Simulation Session Chair:	SESSION 2C - FORESHORE ROOM Flow Properties Session Chair:
13:30 - 13:55	Recommendations for the Design of Effective Water Spraying Airborne Dust Suppression Systems <u>Jon M. Roberts</u> , Rongfu Liao, Peter W. Wypych, Ming Qiao, and David B. Hastie	Workshop Panel Discussion on Simulation - DEM, CFD, FEA, MBD, SPH	The Influence of Drying Techniques on Bulk Material Flow Properties <u>Michael J. Carr</u> , Alan W. Roberts, Craig A. Wheeler, Peter W. Robinson and Ognjen Orozovic
13:55 - 14:20	Dust Monitoring and CFD Modelling for Dust Control in Development Gateroad Panels <u>Ting Ren</u> , Ming Qiao, Jon M. Roberts and Jennifer Hines		Determination of Cohesive Arching Characteristics in Ore Passes <u>Shaun C. Reid</u> , Alan W. Roberts, Jens Plinke
14:20 - 14:45	On the performance of an open channel in the settling of coal tailings Ognjen Orozovic, Peter Robinson, <u>Thomas Bunn</u> , Kevin Rowe, Peter Shumack, Craig Wheeler, Michael Carr and Tiago Cousseau		

14:45 - 15:20	Afternoon tea
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SESSION 3	SESSION 3A - GRAND PACIFIC BALLROOM Belt Conveying Session Chair:	SESSION 3B - ESCARPMENT ROOM Simulation Session Chair:	SESSION 3C - FORESHORE ROOM Segregation Session Chair:
15:20 - 15:45	Identification of Conveyor Drive Pulley Lagging Friction <u>Jason T. Willis</u> , Peter W. Robinson, Michael J. Carr, Jayne O'Shea, Ashleigh Kirkland, Craig A. Wheeler and Mariana Ballestrin	A Review of Multibody Dynamics Method for Pouch Belt Conveyor System <u>Jingye Tian</u> , David B. Hastie, Jon M. Roberts, Peter W. Wypych and Renhu Pan	Cross Flow Turbine to Reduce Size Segregation Effects in Storage Processes Michael Prenner, <u>Michael Denzel</u> and Nikolaus A. Sifferlinger
15:45 - 16:10	Analysing Impact Forces & Overcoming Speed, Heat and Pressure Issues in High Capacity Belt Support Applications <u>Cameron Portelli</u>	DEM Modelling of the HIP Canister Filling <u>Simon Chung</u> , Peter W. Wypych, David B. Hastie, Andrew P. Grima, Sam Moricca	Calibration of DEM parameters for multi-component segregation <u>Ahmed Hadi</u> , Yusong Pang and Dingena L. Schott

Wednesday 12-7-2023

9:00 - 9:05	Welcome and Notices		
9:05 - 9:40	KEYNOTE 2 - GRAND PACIFIC BALLROOM Advances in Pneumatic Conveying Technology – an Australian Perspective Prof Peter W. Wypych		
SESSION 4	SESSION 4A - GRAND PACIFIC BALLROOM Bins and Hoppers Session Chair:	SESSION 4B - ESCARPMENT ROOM Segregation Session Chair:	SESSION 4C - FORESHORE ROOM Belt Conveying Session Chair: Dr Jayne O'Shea
	9:45 - 10:10	Frequency Domain Analysis to Identify Main Segregation Contributors in a Chain of Material Handling Processes Susantha Dissanayake, Michael Bradley, Hamid Salehi, Stefan Zigan, Tong Deng	WORKSHOP Discussion on updates and additions to AS1333 - Conveyor Belting of Elastomeric and Steel Cord Construction
	10:10 - 10:35	Application of a Cellular Automata Modelling to Dynamic Simulation of Industrial Stockpiles and Bins Marko Hilden, Ziming Ye, Mohsen Yahyaei	
10:35 - 11:10	Morning tea		
SESSION 5	SESSION 5A - GRAND PACIFIC BALLROOM Belt Conveying Session Chair:	SESSION 5B - ESCARPMENT ROOM Wear Session Chair:	
	11:10 - 11:35	Evaluation and Calibration of Wood Pellets Degradation Using a Rotary Impact Tester against Single-Bend Attrition Tester Gulab Singh, Tong Deng, Mike Bradley, Richard Ellis	
	11:35 - 12:00	Improvements in Wear Liner Technology David Molesworth, Mariana Ballestrin, Justin Minto, Cameron Dodd	
12:00 - 12:25	The Research and Application of Pouch Belt Conveyor – Case Study Jingye Tian, David B. Hastie, Jon M. Roberts, Peter W. Wypych and Renhu Pan	Calibrated and Validated Wear Prediction for Bulk Material Handling Equipment using DEM Simulations Thomas Roessler and André Katterfeld	
12:30 - 14:00	Lunch		
SESSION 6	SESSION 6A - GRAND PACIFIC BALLROOM Simulation Session Chair:	SESSION 6B - ESCARPMENT ROOM Belt Conveying Session Chair:	
	13:45 - 14:10	Use of Composite Rollers to Improve Belt Conveyor Performance Peter Copley, Ahmad Fleyfel and Anna Lisboa	
	14:10-14:35	Pulley Lagging Selection and Performance Optimisation Tarun Srivastava, Mariana Ballestrin, Bradley Lawson, Peter Robinson, Jason Willis	
14:35- 15:00	Predicting the Dust Suppression Efficiency of Spray Systems using CFD-DPM Approach Rongfu Liao, Jon M. Roberts, Peter W. Wypych, Renhu Pan	Study on Coal/Ash Two way Transportation Technology of Belt Conveyor from Open pit Mine to Power Plant Liang Cao, Huimin Shen, Guanting Song, Weigang Song	
15:00 - 15:30	Afternoon Tea		
SESSION 7	SESSION 7A - GRAND PACIFIC BALLROOM		
	15:30 - 16:30	Session Chair: Em/Prof Mark Jones Australian Society for Bulk Solids Handling Meeting	
17:30	Courtesy Bus Transportation from Sage Hotel, Wollongong		
18:00 - 22:00	Conference Dinner - Panorama House, 811 Princes Highway, Maddens Plains		

Thursday 13-7-2023

9:00 - 9:05	Welcome and Notices		
9:05 - 9:40	KEYNOTE 3 - GRAND PACIFIC BALLROOM Flow of Bulk Solids; Sixty Years of Progress (?) and Where Has it Got Us? Prof Michael S.A. Bradley		
SESSION 8	SESSION 8A - GRAND PACIFIC BALLROOM Belt Conveying Session Chair:	SESSION 8B - FORESHORE ROOM Pneumatic Conveying Session Chair:	
9:45 - 10:10	Monitoring System for Belt Conveyors <u>Michael Prenner</u> , Jakob Müller, Michael Denzel	Application of Recurrence Quantification Analysis to Electrostatic Measurements of Horizontal Gas-solid Flow in Pneumatic Conveying of Plastic Pellets <u>Osamh S. Alshahed</u> , Baldeep Kaur, Michael S.A. Bradley	
10:10 - 10:35	Polymeric Idler Roll Abrasion Resistance Evaluation <u>Tiago Cousseau</u> , Daniel E. Pacholok, Fernanda Kouketsu, Carlos H. da Silva, Peter W. Robinson and Craig Wheeler	Investigations into Development of AI Technology for Prediction of Pneumatic Conveying Performance <u>Nan Dang</u> , Peter W. Wypych, Jon M. Roberts and Renhu Pan	
10:35 - 11:10	Morning tea		
SESSION 9	SESSION 9A - GRAND PACIFIC BALLROOM Ports Session Chair:	SESSION 9B - ESCARPMENT ROOM Pneumatic Conveying Session Chair:	SESSION 9C - FORESHORE ROOM Bin Loads Session Chair:
11:10 - 11:35	Towards Hydrogen-Fuelled Marine Vessels using Solid Hydrogen Carriers <u>M.C. van Bente</u> , J.T. Padding, D.L. Schott	System Identification and Stability Analysis of a Pneumatic Conveying Pipeline Based on Blower Input Voltage and Particle Velocity: Preliminary Study Chanaka Prasad Premarathna, Baldeep Kaur, Hamid Salehi Kahrizangi, Richard Ellis, Michael S.A. Bradley	WORKSHOP Discussion on AS3774 - Loads on Bulk Solids Containers (Standard currently withdrawn)
11:35 - 12:00	Failure of Shiploader Trimmer Flap due to Thermal Loads <u>Kannon Ford</u> , Michael Carr, Peter Robinson and David Bradney	A Review of Energy-Saving Technologies for Pneumatic Conveying <u>Nan Dang</u> , Peter W. Wypych, Jon M. Roberts and Renhu Pan	
12:00 - 12:25	Advancements in Bulk Storage Vessel Design Utilising Finite Element Analysis and Discrete Element Method Modelling <u>Luke Stone</u>	Application of Chaos Analysis to Electrostatic Measurements of Horizontal Gas-solid Flow in Pneumatic Conveying of Plastic Pellets <u>Osamh S. Alshahed</u> , Baldeep Kaur, and Michael S.A. Bradley	
12:30 - 14:00	Lunch		
SESSION 10	SESSION 10A - GRAND PACIFIC BALLROOM Bins and Hoppers Session Chair:	SESSION 10B - ESCARPMENT ROOM Belt Conveying Session Chair:	
14:00 - 14:25	Handling Dewatered Tailings: The Three Root Causes of Poor Material Discharge and Bin Hang-ups <u>Jamil Bundalli</u>	Analyzing Conveyor Idler Replacement Causes: Insights From Idler Type And Position I.E.E. Loureiro, D.E. Pacholok, C.H. da Silva, <u>T. Cousseau</u> , Peter W. Robinson, Craig Wheeler and Felipe Fraga	
14:25 - 14:50	Structural Failure of Silos: Learning Lessons from Failure <u>Prof Mike Bradley</u>	Research on the Modeling and Drawing Method of Belt Conveyor Truss Yong Gao, Hailiang Hu, Kumpeng Xu, Weigang Song	
14:50-15:10	Conference Close		
15:10-15:50	Afternoon Tea and Goodbyes		