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CONFERENCE PROGRAM

Third International Conference on Powder, Granule and Bulk Solids: Innovations and Applications

PGBSIA 2020

February 26-28, 2020

Thapar Institute of Engineering & Technology (TIET), Punjab-147004, Patiala, India

Organized by: Department of Mechanical Engineering, TIET

EXHIBITORS

Mercury Lab

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DAY 0: 26.02.20
PRE-CONFERENCE WORKSHOPS

WORKSHOP (9.30 AM TO 3.30 PM), LP 108, Learning Centre

Resolving Powder Flow Problems: Powder and Granular Material Handling Industries

SPEAKER: DR. NAVEEN MANI TRIPATHI

GRANUTOOLS, BELGIUM

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY, INDIA

Industry Relevance: Pharmaceutical, Food/Processing, Additive Manufacturing

On attending the workshop, the delegates will be able to:

- Appreciate the role of contact, cohesive, and hydrodynamic forces, macroscopic properties of the powders such as packing fraction, electrostatic charging, spreadability, segregation etc. towards affecting the flowability of powders
- Design/troubleshoot/improve quality control industrial powder handling systems based on the knowledge podwer characterization an flowability

Major attraction:

- The workshop will include visit to Powder Handling Laboratory (TIET) for practical demonstration of assessing powder floability
- Several industrial problem solving case studies will be discussed
- Workshop includes 1-hr troubleshooting session in the end where our experts will provide customized solutions for your industry and powders

WORKSHOP (9.30 AM TO 3.30 PM), LP 109, Learning Centre

Designing and Troubleshooting Industrial Pneumatic Conveying Systems

SPEAKERS: DR. PETER WYPYCH AND DR. S.S. MALLICK

UNIVERSITY OF WOLLONGONG, AUSTRALIA

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY, INDIA

Industry Relevance: Power, Pharmaceutical, Food/Processing, Cement, Limestone

On attending the workshop, the delegates will be able to:

- Use pneumatic conveying to design and troubleshoot pneumatic conveying systems and assess their performances
- Estimate pressure drop and minimum air flow requirement for pneumatic pressure and vacuum conveying systems
- Correctly size compressors, vacuum pumps, blow tanks/feeders, pipeline

Major attraction:

- The workshop will include visit to pneumatic conveying pilot plant at Powder Handling Laboratory (TIET) for practical conveying demonstration
- Several industrial problem solving case studies will be discussed
- Workshop includes 1-hr troubleshooting session in the end where our experts will provide customized solutions for your industry and powders

WORKSHOP (3.30 TO 4.30 PM), LP 109, Learning Centre

Rotary valve sizing: Use of a "filling factor" predictable from particle characteristics, in combination with bulk density and throughput requirement
Is it for me? How to decide whether to buy a pneumatic conveying system? How to buy one that works?

SPEAKER: DR. TONG DENG

UNIVERSITY OF GREENWICH, UK

DAY 0: 26.02.20
PGBSIA 2020 PRE-CONFERENCE REGISTRATION & NETWORKING MEET

Pre-Conference Registration (4.30 to 5 PM), Visitor Centre, Learning Centre

Welcome Message, LP 107, Learning Centre: Prof. T.P. Singh, Head, Mechanical Engineering Department, TIET, 5.00 to 5.25 PM

Advances in Bulk Material Handling Research at Thapar Institute: Dr. S.S.Mallick, 5.25 to 5.45 PM

Visit to Particle and Bulk Solids Laboratory, Mechanical Engineering Department (5.45 to 6.45 PM)

Networking Dinner (6.45 to 8.00 PM)

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DAY 1: 27.02.20

Breakfast at venue and registration, Visitor Centre, 8.00 to 8.30 AM

Conference Inauguration, LP 107, 8.30 to 9.00 AM

Session 1: Keynote Lecture Series, LP 107, 9.00 to 10.00 AM

1.1 Solving Industry's Dust Problems – A High-Tech Approach, Peter Wypych, University of Wollongong, Australia

1.2 Understanding the Micro-Meso-Macro Mechanics of Particulate Solids: from Theory to Applications, Stefan Luding, University of Twente, The Netherlands

Coffee Break + Poster Session, 10.00 to 10.25 AM

Session 2: Keynote Lecture Series, LP 108, 10.25 AM to 12.25 PM

2.1 The Finer Things in Life – Challenges and Advances in Powder Simulation using the Discrete Element Method, David Curry, EDEM, UK

2.2 Commonly Analyzing Particle-Gas and Particle-Liquid Flows by Using Archimedes Number, Haim Kalman, Ben Gurion University, Israel

2.3 Powder Flow Properties at Process Conditions and the Role of Inter-particle Forces, Massimo Poletto, University of Salerno, Italy

2.4 On signed distance function based wall boundary model in the DEM simulation, Mikio Sakai, University of Tokyo, Japan

Lunch Break, 12.25 to 1.00 PM

Session 3: Flow Properties and Characterization LP 108, 1.00 to 3.00 PM	**Session 4: Pneumatic Transport LP 109, 1.00 to 3.00 PM**	**Session 5: Powder Simulation and Modelling Visitor Centre, 1.00 to 3.00 PM**
3.1 The effect of temperature on the flowability of polymeric powders, Massimo Poletto, University of Salerno, Italy	*4.1 Experimental study for modification and validation of Plug-3 pressure drop model,* Haim Kalman, Ben Gurion University, Israel	*5.1 Numerical study on mixing mechanism of a ribbon mixer using the DEM,* Yoshiharu Tsugeno, University of Tokyo, Japan
3.2 High and low temperature ring shear testing, Denis Schütz, Anton Paar GmbH, Austria	*4.2 Erosive Wear of pipe bends in pneumatic conveying Systems and Wear Life Prediction*, Tong Deng, University of Greenwich, UK	*5.2 DEM simulation of the powder layer formation in the Selective Laser Sintering Process,* M. Lupo, University of Salerno, Italy
3.3 Predict powder flowability from milligram powder samples– early formulation stage, Vivek Garg, University of Greenwich, UK	*4.3 Fluidized dense-phase pneumatic conveying of powders – recent developments and challenges ahead*, S.S.Mallick, Thapar Institute, India	*5.3 DEM-CFD simulation for powder filling in a multi cavity die*, Rinako Yokoyama, University of Tokyo, Japan
3.4 Investigation to infer mechanical energy of cohesive powders, Vivek Garg, University of Greenwich, UK	*4.4 New Approach for Investigation on Slug Porosity of Plastic Pellet Conveyed Pneumatically,* Yassin Alkassar, IIT Delhi, India	*5.4 Particle-fluid coupling for wide size-distributions: Towards modeling air entrapment during die-filling*, Mitchel Post, University of Twente, Netherlands
3.5 Influence of metallic powder characteristics on spreadability, triboelectricity and packing dynamics in Additive Manufacturing processes, Naveen Mani Tripathi, GranuTools, Belgium	*4.5 Numerical investigations of cyclone separators with different cylinder-to-cone ratios,* Lakhbir Singh Brar, Birla Institute of Technology, India	*5.5 Multi-Scale Simulation of the Pellet Rounding in a Spheronization Process with Different Friction Plates* Dominik Weis, Technische Universität Kaiserslautern, Germany
3.6 Modelling powder cohesion and flowability of fine powders under upon cooling and time consolidation, Gaurav Saluja, Thapar Institute, India	*4.6 Improved bend loss model for pneumatic conveying of powders,* Atul Sharma, Thapar Institute, India	*5.6 Powder-based Simulations for Selective Laser Sintering and Selective Laser Melting*, Alvaro A. Estupinan, University of Luxembourg, Luxembourg
3.7 Shear yield stress measurement of coal ash pastes from modified slump tests, Vighnesh Prasad, *IIT, Gandhinagar, India*	*4.7 On developing improved solids friction for dense-phase pneumatic conveying of powders considering the effects of collision,* Kapil Sharma, Thapar Institute, India	*5.7 On developing particle-fluid coupled heat transfer model at nanoscale, Kundan Lal, Thapar Institute, Patiala, India*

Coffee Break + Poster Session, 3.00 to 3.25 PM

Session 6: Technical Address by Platinum Sponsor:, L108, 3.25 to 4.00 PM

6.1 Next Generation DEM Technology: Crossing New Frontiers with Rocky DEM, Rocky DEM Business Unit

Session 7: WORKSHOP: Powder Characterization and Reliable Powder Flow, L108, 4.00 to 6.30 PM

7.1 Powder flow characterization methods, Massimo Poletto, University of Salerno, Italy

7.2 Cohesive powder characterization, Stefan Luding, University of Twente & MercuryLab, Netherlands

7.3 Measurements of powder flow properties and their application, Abdallah Rady, GranuTools, Belgium

Conference Dinner, 8.15 to 10 PM

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DAY 2: 28.02.20

Breakfast at venue and registration: 8.00 to 8.30 AM

Session 8: Keynote Lecture Series, LP 108, 8.30 to 10.30 AM

8.1 Cohesion and its Impact on Bulk Properties and Enhancements through Surface Modification, Rajesh Dave, New Jersey Institute of Technology, USA

8.2 Detection, identification & classification of asbestos fibers & asbestos containing materials (ACM) by innovative optical sensing devices, G. Bonifazi, University of Rome, Italy

8.3 Dust explosions and venting protection, Álvaro Ramírez-Gómez, Technical University of Madrid, Spain

8.4 Fast, flexible particles simulations: An introduction to MercuryDPM, Anthony Thorton, University of Twente, The Netherlands

Coffee Break, 10.30 to 10.55 AM

Session 9: Granular Flow LP 108, 10.55 AM to 12.40 PM	Session 10: Powder Processing LP 109, 10.55 AM to 12.40 PM	Session 11: Powder Simulation and Modelling Visitor Centre, 10.55 AM to 12.40 PM
9.1 A revised coarse-graining approach for simulation of highly poly-disperse granular flows, Suranita Kanjilal, Johannes Kepler Universität, Austria	*10.1 Laser sintering of binary mixtures of ceramic powders*, Daniele Sofia, Department of Industrial Engineering, University of Salerno, Italy	*11.1 Implementation of Cohesive DEM to Study Agglomeration of Nanoparticles*, Alok Tiwari, IIT Bombay, India
9.2 Modelling and prediction of segregation, fines distributions in bulk powder, Tong Deng, University of Greenwich, UK	*10.2 New Development in Process Engineering of Dispersion of Pigment Tinters,* Nilesh P. Badgujara, Institute of Chemical Technology, India	*11.2 Effect of the contact force model on the bulk flow behavior of granular materials in DEM simulations*, Satyabrata Patro, IIT Kanpur, India
9.3 Velocity scaling in the region of orifice influence in the silo discharging under gravity, Ashish Bhateja, IIT Goa	*10.3 The influence of pigment particles morphological and morphometrical characteristics on polychrome artifacts restoration,* G. Bonifazi, University of Rome, Italy	*11.3 DEM simulation of packing spherical particles in to slender prismatic containers,* Sujith Reddy Jaggannagari, IIT Madras, India
9.4 Fabric-Conductivity characteristics of cohesive periodic granular assemblies, Akhil Vijayan, IIT Madras	*10.4 Effective preparation of curcumin nanoparticles by stirred media mills,* Chetan M. Patel, NIT Surat, India	*11.4 Measurement of the Rolling Friction of Iron ore Pellets for usage in DEM simulation, Arpit Agarwal, IIT Kanpur, India*
9.5 Experimental Investigation of segregation of granular materials in a simplified model of blast furnace, Sandip H. Gharat, Institute of Chemical Technology, India	*10.5 Mixing Behavior of Binary Mixtures in a Spout-Fluid Bed: Design of Experiments Approach,* Sujan Kumar Bhashapaka, NIT, Warangal	*11.5 Design and analysis of a self-dispersing twisted pipe for fast settling suspensions using CFD approach,* Harmanpreet Singh, Thapar Institute, India
9.6 An Experimental Study of Segregation of Non-Spherical Particles in a Vibrated Bed System, Jeetram Yogi, IIT Roorkee, India	*10.6 Micro and Nano Particle Composite Machining: Fractional Order Control of Surface Roughness,* Ravi Sekhar, Symbiosis International University, India	*11.6 Numerical simulation of one dimensional consolidation test of montmorillonite/kaolinite mixtures using discrete element method,* A.A.Mirghasemi, University of Tehran, Iran

Lunch Break, 12.40 to 1.15 PM

Session 12: Keynote Lecture Series, LP 108, 1.15 to 3.15 PM

12.1 Non-Linear Breakage and Insights from DEM–PBM Simulations, Ecevit Bilgili, New Jersey Institute of Technology, USA

12.2 Pneumatic conveying in lean and dense phase: variation in conveying properties of different materials, both similar and dissimilar, Tong Deng, University of Greenwich, UK

12.3 Ash transport system in thermal power plants – challenges and solutions, Bhanu Samanta, NTPC, India

12.4 Reliable ash utilization and transportation technologies for fly ash in thermal power stations, Arijit Ghosal, MHC Conveying Systems, India

Coffee Break + Poster Session, 3.15 to 3.40 PM

Session 13: Dust and Air Pollution Control LP 108, 3.40 to 4.55 PM	Session 14: Powder Processing LP 109, 3.40 to 4.55 PM	Session 15: Powder Simulation and Modelling Visitor Centre, 3.40 to 4.55 PM
13.1 Modelling of Dust Suppression for the Loading of Bulk Carrier Ships, Peter Wypych, University of Wollongong, Australia	*14.1 Multifarious Powder Compositions for Detecting Fingerprints on Crime Scene Evidence,* Gurvinder S. Sodhi, Forensic Science Unit, S.G.T.B. Khalsa College, University of Delhi, India	*15.1 Experimental investigation of segregation of non-spherical particles in a fluidized bed solids-mixer,* Sanjay Kumar Verma, IIT Roorkee, India
13.2 Computational Prediction of Dust Suppression Efficiency of Spray Systems – A Review, Peter Wypych, University of Wollongong, Australia	*14.2 Facile immobilization of iron on carbon nanospheres using organometallic-complex for supercapacitor applications*, Aashima Mahajan, Thapar Institute, India	*15.2 Particle Breakage Modelling of Granular Materials in Direct Shear Test Using DEM-XFEM,* A.A. Mirghasemi, University of Tehran, Iran

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13.3 An Investigation into Utilization of FGD Gypsum for GFRG (Glass Fiber Reinforced Gypsum) panel Manufacturing, Vinay Kumar, NTPC Ltd., India	*14.3 Multi Input System Modeling and Fractional Order Control of Cutting Forces in Machining Nanocomposites,* Ravi Sekhar, Symbiosis International University, India	*15.3 Numerical Analysis of the Drag Coefficient of Sphere Falling in Newtonian Fluid while Surrounded by Other Spherical Particles,* Basudeb Munshi, NIT Rourkela, India
13.4 Characterisation of the dust emission properties of different bulk solids, and evaluating the effectiveness of control by "dry fogging", Tong Deng, University of Greenwich, UK	*14.4 Role of spreading solution solvent in determining the morphology of PVDF films deposited by Langmuir-Blodgett method,* Ajit Seth, Thapar Institute, India.	*15.4 CFD Simulation of Pressure drop in slurry pipeline for flow of sand water suspension,* Varinder Singh, Thapar Institute, India
Coffee Break + Poster Session, 4.55 to 5.20 PM		
Session 16: WORKSHOP: Simulation of Bulk Solids, L108, 5.20 to 7.20 PM		
16.1 Application of DEM Simulation in Industry to address Bulk Material Handling issues, David Curry, EDEM, UK		
16.2 Why Simulate?: An introduction to particle simulations for industrial processes, Anthony Thorton, University of Twente & MercuryLab, Netherlands		
Conference Closure with best paper and poster award, LP 108, 7.20 to 7.45 PM		
Closing Dinner, 7.45 to 8.45 PM		

Optional day trips to Patiala & Chandigarh will arranged on 27th February & 28th February for any accompanying persons/spouse of delegates
Contact Registration Desk on 26th February (4.15 to 4.45 PM) to confirm spot registration

Optional 1-day or 2-day trips to Amritsar or Shimla will be arranged on 29th February
Contact Registration Desk on 26th February (4.15 to 4.45 PM) to confirm spot registration

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REGISTRATION TO PRE-CONFERENCE WORKSHOPS & PGBSIA 2020 CONFERENCE

26 to 28th February, 2020

Thapar Institute of Engineering & Technology, Patiala, Punjab, India

CATEGORY OF REGISTRATION	UNIT	REGISTRATION FEES		
		Any 1 Day	Any 2 Days	All 3 Days
INDUSTRY (INDIA)	Rs.	5000	10000	12000
FACULTY AND RESEARCHER (INDIA)	Rs.			10000
STUDENT (INDIA)	Rs.			8000
FACULTY AND RESEARCHER (INTERNATIONAL)	USD			600
STUDENT (INTERNATIONAL)	USD			500
INDUSTRY (INTERNATIONAL)	USD			700
NOTE: We offer a group discount of 20% off on the registration fee for 4 or more delegates from the same organization.				

DETAILS OF PAYMENT:

BANK TRANSFER PAYMENT

Please make payment to the following account:

Name of Beneficiary: THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY
A/c No: 02630020000237
Type of A/C: Saving
IFSC Code: KKBK0000263
Swift Code : KKBKINBB
Bank Name and address:
Kotak Mahindra Bank Ltd.
Leela Bhawan, Patiala, Punjab, India

After paying the registration fees, please send an email to ssmallick@thapar.edu mentioning the transaction details

For any clarification required, please contact prior to registration to:

Dr. S.S.Mallick (Conference Organizing Secretary)
Department of Mechanical Engineering
Thapar Institute, Patiala, Punjab-147004, INDIA
Tel: +91 9592697176
Email: ssmallick@thapar.edu

Get yourself registered by February 15, 2020 for a confirmed entry to the workshops/conference.

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