



International Conference on Powder, Granule and Bulk Solids: Innovations and Applications (PGBSIA 2013)

November 28-30, 2013
Thapar University, Patiala, India

LIST OF PAPERS (preliminary)

1. Bulk solids handling and dust hazards
 2. Fluidization, rheology, granular flow
 3. Particle mechanics and simulation
 4. Particle synthesis, properties, characterization
 5. Applications of particle technology
- + **WORKSHOPS: practical-case studies/troubleshooting**



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A	BULK SOLIDS HANDLING AND DUST HAZARDS
A1	Advances in bulk material handling technology – linking research and industry Peter Wypych University of Wollongong, Australia
A2	Using threshold velocities to determine flow regime maps for pneumatic conveying Haim Kalman Ben-Gurion University of the Negev, Israel
A3	Recent advances in long distance belt conveyors Gabriel Lodewijks Delft University of Technology, Netherlands
A4	Modelling milling processes Avy Levy Ben-Gurion University of the Negev, Israel
A5	Control of dust in particulate process industries C.R. Copeland and S. Komar Kawatra Michigan Technological University, USA
A6	Improved dense-phase pneumatic conveying of fly ash Renhu Pan Fujian Longking Company, China
A7	Energy saving pneumatic conveying of bulk solids Arika Rinoshika Yamagata University, Japan
A8	An investigation into friction forces of particulate plugs moving in vertical and horizontal pipes Semion Shaul and Haim Kalman Ben-Gurion University of the Negev, Israel
A9	Emerging bulk solids handling practices within Indian industry Pabak Mukherjee Larsen & Toubro, India
A10	Local mean velocity measurement of pneumatically conveyed particles using electrostatic sensor arrays and cross-correlation method Shengnan Wang, Chuanlong Xu, Shimin Wang and Yuezhu Wu Southeast University, Nanjing University, Nanjing, China
A11	Practical issues of coal handling plant operation in a thermal power plants I.K.Rajdeva National Thermal Power Corporation (NTPC), India
A12	A comparative study on gravity-induced flow and forced flow of pulverized coal Haifeng Lu, Xiaolei Guo, Fuyu Wu, Xiaolin Sun, Kai Liu and Xin Gong Shanghai Engineering Research Centre of Coal Gasification, Institute of Clean Coal Technology, East China University of Science and Technology, China
A13	Modelling dense-phase pneumatic conveying of bulk solids Chandana Ratnayake Tel-Tek Institute, Norway

A14	Design considerations for mass flow in hoppers A. Banerjee M.N.Dastur, Kolkata, India
A15	Coal blending for Indian power plants –a case study Dipta Sundar Mallick Development Consultants Private Limited, Kolkata, India
A16	Predicting pipe blockage condition for dense phase pneumatic conveying systems Gautam Setia and S.S.Mallick Thapar University, India
A17	Effect of dune formation on pressure drop in horizontal pneumatic conveying system Ajay B. Makwana, Ramjee Korada and Manaswita Bose Indian Institute of Technology, Bombay, India
A18	Blinded T-bends flow patterns in pneumatic conveying systems Nir Santo and Haim Kalman Ben-Gurion University of the Negev, Israel
A19	Study of pressure fluctuations during dense phase pneumatic conveying of powders Anu Mittal and S.S.Mallick Thapar University, India
A20	Modern bulk materials handling techniques and various logistics solutions relevant to fly ash Anil Seth Libran Engineering and Services, India
A21	An investigation on flow pattern and velocity fields in a two dimensional flat bottomed rectangular silo with central and off-centre discharge Sanjay K. Sardar, Ritwik Maiti, Prasanta K. Das and Gargi Das Indian Institute of Technology, Kharagpur, India
A22	Vibrological effects in rapid gravity flows of particulate solids on a rough chute Viktor N. Dolgunin, Andrew N. Kudy, Pavel A. Ivanov, Oleg O. Ivanov, Anatoliy M. Klimov and Vasilii A. Pronin Tambov State Technical University, Tambov, Russian Federation
A23	Combustible Dust Explosion Risk Management Felipe Ong BS&B Safety Systems, Singapore
A24	Present day scenario of handling bottom ash Debashish De Development Consultants Private Limited, Kolkata, India
A25	Latest developments in ash handling systems in Indian power plants Tirupati Rao Bharat Heavy Electricals Limited (BHEL), India
A26	Advances in pneumatic, slurry conveying within industry Sumantra Sen Tecpro Systems Limited, India.
A27	Effect of vortex finder diameter on flow field and collection efficiency of cyclone separators L.S. Brar, R.P. Sharma and R. Dwivedi BIT Mesra, Ranchi

A28	<p>Safe handling of industrial powders Philip Robinson Intertek Chemical & Pharmaceuticals, UK</p>
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WORKSHOPS: BULK SOLIDS HANDLING	
1	<p>Design, case-studies and troubleshooting of dense-phase pneumatic conveying systems Peter Wypych and S.S.Mallick University of Wollongong, Australia and Thapar University, India</p>
2	<p>Conveyor dynamics Gabriel Lodewijks Delft University of Technology, Netherlands</p>
3	<p>Bulk material storage facilities – design and management considerations Peter Wypych University of Wollongong, Australia</p>
4	<p>Ash handling systems in thermal power plants Renhu Pan Fujian Longking Company, China</p>

B	FLUIDIZATION, RHEOLOGY AND GRANULAR FLOW
B1	Some fundamental aspects of the rheology of dense granular materials Prabhu R. Nott Indian Institute of Science, Bangalore, India
B2	Re-interpretation of fluidization Xianfeng Fan University of Edinburgh, UK
B3	The porosity distribution in monodisperse and polydisperse fixed beds and its impact on the fluid flow Sebastian Schulze, Petr A. Nikrityuk, Bernd Meyer Institute of Energy Process Engineering and Chemical Engineering, Germany
B4	Cyclic loading of spherical elastic-plastic granules at diametrical compression Alexander Russell, Peter Müller and Jürgen Tomas Otto von Guericke University of Magdeburg, Germany
B5	Understanding powder caking as a consequence of a range of mechanisms by means of powder rheometry Tim Freeman, Nishil Malde and Yogin Chandorkar Freeman Technology, UK and Aimil India
B6	Material Behaviour of Spherical Elastic-Plastic Granules at Diametrical Compression Alexander Russell, Peter Müller and Jürgen Tomas Otto von Guericke University of Magdeburg, Germany
B7	Study of the dynamics of wet granulates under shear Jayati Sarkar and Dheerendra Dubey Indian Institute of Technology, Delhi, India
B8	Droplet spreading on micro-patterned and micro-porous granular beds Ananth Praveen Kumar, Venkatanarayana Prasad S, Tamal Banerjee and Dipankar Bandyopadhyay Indian Institute of Technology, Guwahati, India
B9	Pressure drop and gas holdup studies in a spout-fluid bed Sujan Kumar B and Venu Vinod A National Institute of Technology, Warangal, India
B10	An investigation into effect of particle size and mass fraction on mixing of particles in a gas-solid fluidized bed Vivek V. Buwa and Ritubhan Gautam Institute of Technology, Delhi, India
B11	Effects of physical and mechanical properties on fluidized bed drying of rajma seed S. Jena and A. Sahoo National Institute of Technology, Rourkela, India
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	EXPERTS INVITED

C	PARTICLE MECHANICS AND SIMULATION
C1	Discrete element simulation of granular and multiphase flows Navid Mostoufi University of Tehran, Iran
C2	Discrete element modeling of grain flow pattern in continuous cross-flow grain dryer R. P. Kingsly Ambrose, Josephine M. Boac, and Dirk Maier Kansas State University, U.S.A
C3	Micro and macro mechanics of particle breakage Ahad Bagherzadeh-Khalkhali ¹ and Sohrab Bagheri Moshanir Power Engineering Consultants, Zanjan Regional Water Co., Tehran, Iran
C4	Modeling of nano-suspension droplet drying by CFD-DEM approach Y.Ostrovski, A. Levy Ben-Gurion University of the Negev, Israel
C5	CFD analysis of bed voidage characteristic of three phase fluidized bed with distributor Sambhurisha Mishra and Hara Mohan Jena National Institute of Technology, Rourkela, India
C6	Experimental investigation of collision modes in particulate systems Praveen Kumar, Toni C. Veeramani Indian Institute of Technology, Roorkee, India
C7	A study of CFD modelling on variation of solid fraction in a batch fluidized bed G Srinivas and Y Pydi Setty National Institute of Technology, Warangal, India
C8	ASPEN Plus simulation and experimental study of different dry biomass solid waste gasification process using air–steam fluidized bed gasifier R. Tripathy and A. Sahoo National Institute of Technology, Rourkela, India
C9	CFD analysis of hydrodynamic behavior in FC crystallizer Anis Bakhsh and H. M. Jena National Institute of Technology, Rourkela, India
C10	CFD simulation of biomass-sand mixing in a bubbling fluidized bed Shadab Alam , Rohit G, S.Srinath, G.Venkat Reddy National Institute of Technology, Warangal, India
C11	CFD simulation for hydrodynamic behaviour of fine particles in a fluidized bed P. Sahoo and A. Sahoo National Institute of Technology, Rourkela, India
C12	Collision methodology for resolution of particulate interaction in three dimensional framework C. Veeramani Indian Institute of Technology, Roorkee, India

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D	PARTICLE SYNTHESIS, PROPERTIES AND CHARACTERIZATION
D1	The significant parameter for the production of nanoparticles by stirred media milling B. Pitchumani Institute of Technology, New Delhi, India
D2	Nucleophile induced reversible dissolution of metal in aqueous surfactant solution: an astounding conclusion Tarasankar Pal Indian Institute of Technology, Kharagpur, India
D3	Effect of aggregation and dispersion of nanoparticle on tensile strength of polymer/fullerene(C₆₀) nanocomposite: molecular dynamics simulation Sunil Kumar and Sudip K. Pattanayek Indian Institute of Technology, New Delhi, India
D4	Synthesis of zinc oxide nano particles by high energy ball milling S. Purnachandra Rao and R. Nagarajan Indian Institute of Technology, Madras, India
D5	Control of nanoparticle agglomeration: role of synthesis technique & surfactant Chandni Khurana, O.P Pandey and Bhupendra Chudasama Thapar University, India
D6	Facile synthesis of anisotropic Au nanostructures by laser irradiation and study their optical and electro-kinetic properties Bonamali Pal and Rupinder Kaur Thapar University, India
D7	IR spectrum of the wet very fine particulate material Tomas Sverak, Christopher G. J. Baker and Katerina Sikorova Brno University of Technology, Czech Republic
D8	Magnetic properties of nano-structured Co and Ni synthesized by modified NaBH₄ reduction route Shankar B. Dalavi and Rabi N. Panda BITS Pilani, Goa, India
D9	Study of wettability and surface energy characteristics of nano-coated pharmaceutical excipient powders Vikram Karde and Chinmay Ghoroi Indian Institute of Technology Gandhinagar, India
D10	Influence of pH on the stability of alumina and silica nanosuspensions produced by stirred media milling Chetan M. Patel, Mousumi Chakraborty and Z. V. P. Murthy National Institute of Technology, Surat, India
D11	Experimental analysis on influence of temperature and concentration of nanofluids on thermophysical properties Mahesh Juneja and D. Gangacharyulu Thapar University, India
D12	Effect of processing variables on WC nanoparticles synthesized by solvothermal route Gourav Singla, K. Singh and O. P. Pandey Thapar University, India

D13	A simple aqueous solution based chemical methodology for preparation of mesoporous alumina: efficient adsorbent for defluoridation of water Desagani Dayananda, Venkateswara Rao Sarva, Sivankutty Vadakkethonippurathu Prasad, Jayaraman Arunachalam, Narendra Nath Ghosh BITS Pilani, Goa, Bhabha Atomic Research Centre, Hyderabad, India, National Institute for Interdisciplinary Science and Technology (NIIST-CSIR), Kerala, India
D14	SERS activities of green synthesized silver nanoparticles: size effect M.R.Bindhu, V.G. Sathe and M. Umadevi Mother Teresa Women's University, Kodaikanal; UGC-DAE Consortium for Scientific Research, University Campus, India
D15	Processing and characterization of plasma spray coatings of glass micro-spheres premixed with Al₂O₃ particles Gaurav Gupta and Alok Satapathy National Institute of Technology, Rourkela, India
D16	Enhanced stability, conductance and catalytic activity of gold nanoparticles via oxidative dissolution by KMnO₄ Anila Monga and Bonamali Pal Thapar University, India
D17	Morphological study of carbon nanoparticles synthesized at high temperature and pressure Mani Mahajan, K. Singh and O. P. Pandey Thapar University, India
D18	A Scientific approach to evaluate normal class room chalk and imported dustless chalk: an application of instrumentation and control engineering Manish Thakker, Dinesh O.Shah, Premal Shukla Dharmsinh Desai University, Nadiad, India, University of Florida, USA
D19	Effect of pH on Size of ZnS nanoparticles and its application for dye degradation Jagdeep Kaur, Manoj Sharma and O. P. Pandey Thapar University, India
D20	Role of size and shape on optical properties of Eu³⁺ and Li⁺ co-doped Y₂O₃ nanophosphors Deepak Kumar, Manoj Sharma and O.P. Pandey Thapar University, India
D21	Synthesis, Characterisation and antimicrobial activity of tri-phenyltin (IV) Complexes of azo-imino-para-benzoate derived from substituted anilines Sanasam Sachika Devia, Keisham Surjit Singha, Manojit Royb and W.Radhapiyari Devib National Institute of Technology Agartala, Tripura; Institute of Bioresources and Sustainable Development, Manipur, India
D22	Photocatalytic degradation of Janus Green B using TiO₂ nanoparticles synthesized by sol gel method Pooja Singla, Manoj Sharma, O.P. Pandey and K. Singh Sri Guru Granth Sahib World University, Thapar University, India
D23	Effect of pH on synthesis of single phase Titania (TiO₂) nanoparticles and its characterization G. Sarala Devi K. Shanth Kumar Indian Institute of Chemical Technology, Hyderabad, India
D24	Green synthesis of Al₂O₃ nanoparticles under different reaction conditions Prasant Sutradhar and Mitali Saha National Institute of Technology, Agartala, India

D25	An investigation into the stability and thermal conductivity of silver/water nanofluids Apoorva Singh, B.Pal and S.S. Mallick Thapar University, India
D26	A method for the determination of the particulate size distribution of multi-sized coal particulates Arunanshu Chakravarty, Satish Kumar and S.K.Mohapatra Thapar University, India
D27	Synthesis, characterization and antimicrobial activity of tri-n-butyltin(IV) complexes azo-imino carboxylate derived from para-amino benzoic acids Manojit Roy, Keisham Surjit Singha and W.Radhapriyari National Institute of Technology, Agartala, India
D28	Effect of thermal treatment on morphology and photocatalytic activity of Fe-impregnated sodium titanate nanotubes Inderpreet S. Grover, Satnam Singh and Bonamali Pal Thapar University, India

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E	APPLICATIONS OF PARTICLE TECHNOLOGY
E1	<p>Improving lubrication of EDM oil at higher shear rate and temperature with carbon nanotubes Balram Tripathi and B. Ravindra and Y.M. Joshi Indian Institute of Technology, Jodhpur, India</p>
E2	<p>A comparative study on physic-chemical characteristics and synthesis of typical nanofluids Ajay Vasishth, K.S.R. Murthy and Gagan Anand University of Petroleum and Energy Studies, Dehradun, India</p>
E3	<p>A novel multipurpose powder/small particle composition for detection of fingerprints on a legion of crime scenes G.S. Sodhi and Jasjeet Kaur S.G.T.B. Khalsa College, Shaheed Rajguru College of Applied Sciences for Women, Delhi, India</p>
E4	<p>Development of closed-cell aluminum composite foams Suresh Kumar, Ranvir Singh Panwar and O. P. Pandey Thapar University, India</p>
E5	<p>An anisotropic constitutive equation for the stress tensor of blood Mehrdad Massoudi Carnegie Mellon University, Pittsburgh, USA</p>
E6	<p>Powder mixed dielectric: an approach for improved process performance in EDM Ajay Batish, Anirban Bhattacharya and Naveen Kumar Thapar University, India</p>
E7	<p>Effect of different ceramic particle on the sliding wear behavior of Al-Si alloy composites Ranvir Singh Panwar, Suresh Kumar, O.P. Pandey Thapar University, India</p>
E8	<p>Role of different range of particle size on wear characteristics of Al-Rutile composites Rama Arora, Suresh Kumar, Gurmel Singh and O.P. Pandey Punjabi University, Thapar University, India</p>
E9	<p>Sol gel derived hierarchially porous granular ceramics and aerogels for multifunctional applications Linsha Vazayal, K.V. Mahesh and S. Ananthakumar National Institute for Interdisciplinary Science and Technology, Kerala, India</p>
E10	<p>AC and DC conductivity studies on lead free ceramics: Sr_{1-x}Ca_xBi₄Ti₄O₁₅ (x=0, 0.2, 0.4, 0.6, 0.8) Gagan Anand, Ajay Vasishth, Piyush Kuchhal and P. Sarah University of Petroleum and Energy Studies, Dehradun, India</p>
E11	<p>Mineralogical studies of fly ash that acts as a soil ameliorant in agriculture Rajinder Kaur and Dinesh Goyal Thapar University, India</p>
E12	<p>Material transfer mechanism during ED-machining of MMC's with powder Sarabjeet Singh Sidhu, Ajay Batish and Sanjeev Kumar Thapar University, India</p>
E13	<p>Hot deformation behaviour of Aluminium composite produced through powder metallurgy route</p>

	A. Rajeshkannan University of the South Pacific, Laucala Campus, Fiji
E14	Effect of extended milling of scheelite ore with activated charcoal on direct synthesis of nano tungsten carbide Harjinder Singh and O. P. Pandey Thapar University, India
E15	Oil agglomeration of coal fines in continuous Mode of Operation Ankush Gupta, H.V.C. Chary Guntupalli, M.G. Dastidar Indian Institute of Technology, Delhi, Central Pollution Control Board, Delhi, India
E16	Experimental investigation of magnetic field assisted EDM with powders mixed in dielectric Geeta Bhatt, Ajay Batish, Anirban Bhattacharya Thapar University, India
E17	Influence of Au photodeposition and doping in cds nanorods: optical and photocatalytic study Rohit Singh and Bonamali Pal Thapar University, India
E18	Square wave and linear sweep studies for the non enzymatic detection of glucose Soma Das and Mitali Saha National Institute of Technology, Tripura, India
E19	Crystallization and glass transition kinetics of Na₂S-P₂S₅ based super-ionic glasses Paramjyot Kumar Jha, O. P. Pandey and K. Singh Thapar University, India
E20	A study on titanium oxide micro-particles filled epoxy with enhanced heat conductivity for microelectronic packaging applications Madhusmita Sahu and Alok Satapathy National Institute of Technology, Rourkela, India
E21	Study of broken glass granules to find cause of failure of windshield automobiles glass Bhupinder Kaur and O.P. Pandey Thapar University, India
E22	An experimental investigation into the thermal properties of nanofluids Amit Kumar, Nikhilesh Bhargava, Tushar Sinha and S. S.Mallick Thapar University, India
E23	Epoxy composites filled with micro-sized AlN particles for microelectronic applications Alok Agrawal, Alok Satapathy National Institute of Technology, Rourkela, India
E24	Photoetching of SiO₂(shell) at CdS(core) nanostructure: An effect of CdS core size on photodecomposition of methyl orange under visible light irradiation NidhiGupta and Bonamali Pal Thapar University, India
E25	Effect of plaster of paris on bending strength of polypropylene composites Mubbasher Ali Khan and M. Arif Siddiqui Z.H.E.T, AMU, Aligarh, India

E26	Structural, thermal and electrical study of Bi_{0.5}Sr_{0.5}MnO₃ for SOFC applications Samita Thakur, O.P.Pandey and K. Singh Thapar University, India
E27	Conductivity and dielectric relaxation studies of La_{0.9}Ba_{0.1}GaO_{3-d} system synthesized through P/M Route Kapil Sood, K. Singh, O.P. Pandey Thapar University, Bhai Gurdas Institute of Engineering & Technology, India
E28	Effect of Dispersion parameters on thermal conductivity of Alumina (Al₂O₃) and Copper Oxide (CuO) based nanofluids Kundan Lal and S. S. Mallick, Thapar University, India
E29	High sensitivity and selective response of ZnO: Nb₂O₅ nanocomposite based hydrogen gas sensor G.Sarala Devi, P. Siva Prasad Reddy and K. Ramya Indian Institute of Chemical Technology, Hyderabad, India
E30	Influence of CuO nanostructures on the thermal conductivity of DI water and ethylene glycol based nanofluids Bhupender Pal, S.S. Mallick and Bonamali Pal Thapar University, India
E31	Improvement of aerated discharge rate of cohesive powders by nano-coating Sanat Chandra Maiti, Vikram Karde and Chinmay Ghoroi Indian Institute of Technology, Gandhinagar, India
E32	Development of plasma spray coatings using Linz-Donawitz (LD) slag particles Pravat Ranjan Pati and Alok Satapathy National Institute of Technology, Rourkela, India
E33	Effect of particle size on wear behaviour of Al-garnet composite Anju Sharma, Suresh Kumar, Gurmel Singh and O.P. Pandey Punjabi University, Thapar University, Patiala, India
E34	Development of gypsum powder admixture for exterior wall plaster Sudhir K. Singh Thapar University, Patiala, India

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