

State-of-the Art of Gas Solids Flow – an Industrial Perspective

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In this presentation, the present knowledge and capabilities with regard to solids flow will be discussed in the following areas:

- 1) pneumatic conveying (both dilute- and dense-phase) including risers
- 2) Circulation Systems consisting of standpipes, risers, cyclones, valves and cyclone diplegs
- 3) Feed and Discharge systems (low pressure and high pressure)
- 4) Nonmechanical vs. Mechanical control of solids flow

The systems above will be discussed for larger solids, but also with respect to cohesive solids/agglomeration of particles due to interparticle forces, pulsing and high-shear distributors to enable feeding of problematic materials. In addition, gaps in modeling/troubleshooting of solids materials (especially in packed-bed and hopper flow) will be addressed.