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## Noninvasive Radiation Based Densitometry and Velocimetric Monitoring of Fluidization of Coal and Bottom Ash Mixtures

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Utilization of noninvasive radiation based techniques has become widespread in several industrial applications. Of particular importance is its deployment in systems involving two or more phases. Such systems are ubiquitously found in areas concerning from the processing of fuels and chemicals to the production of feed, food, pharmaceuticals, and specialty materials. In spite of extensive presence of multiphase systems, lack of knowledge on complex local flow structure have rendered non-availability of any single established methodology for their design. Nonetheless, two classes of radiation based measurements –tomographic and velocimetry (commonly referred to Radioactive Particle Tracking) have emerged as attractive strategies for providing dynamic information on phase distribution and flow pattern of phases of interest respectively. In this work application of such measurement techniques are being reported for fluidization of coal and bottom ash mixtures.

The talk will present details of this work and how radiation based non-invasive tool proves to be a great benefit in fundamental analysis, design and scale-up of coal fluidized bed gasifiers.

### Country/Organization invited to participate

India

**Primary author:** Mr ROY, Shantanu (Indian Institute of Technology - Delhi, India)

**Co-authors:** Mr PANT, Harish Jagat (Bhabha Atomic Research Centre, Trombay, Mumbai, India); Mr ROY, Sangram (Indian Institute of Technology - Delhi, India)

**Presenter:** Mr ROY, Shantanu (Indian Institute of Technology - Delhi, India)

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