

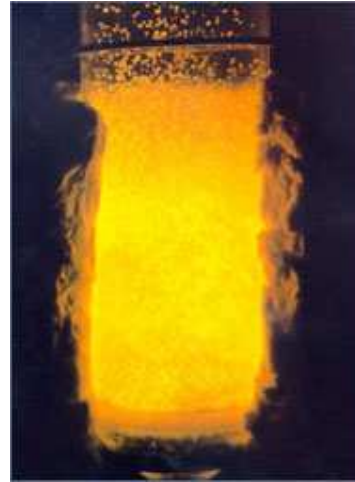
Materials science and manufacturing

Conference on fluidisation highlights efficiency and flexibility

The triennial Industrial Fluidisation South Africa (IFSA 2008) conference will be held on 19 and 20 November 2008 at the Glenburn Lodge, Gauteng, at the Cradle of Humankind. The core focus of the conference is the industrial application of fluidised-bed technology in fields such as treatment of minerals, energy generation/conversion and petrochemicals.

According to the CSIR's Brian North, chairperson of IFSA 2008, a key element of the conference is the interaction between academia and industry and exploring how fundamental research and modelling of fluidisation can contribute to the design and operation of industrial plants - spanning the entire research, development and implementation chain. Topics that will be highlighted at the conference include:

- Clean coal and renewable energy
- Fundamentals of fluidisation
- Chemical and metallurgical applications
- Modelling and computational fluid dynamics
- Auxiliary equipment and novel applications.



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Through IFSA 2008 a forum is provided for academics and industrialists from across the world to share knowledge and experience and to promote the exchange of information on engineering principles in multi-phase contacting systems, on emerging technologies and new ideas.

IFSA is supported by the CSIR, Mintek, Sasol Technology, Eskom, Exxaro Resources, Anglo Research, the South African Institute of Mining and Metallurgy (SAIMM) and the universities of Pretoria and KwaZulu-Natal.

Those interested in sharing research or practical experience with peers are invited to submit abstracts before 11 April 2008. For further information on the conference, dates, registration and organising committee, visit www.ifs2008.com.

Fluidisation - a definition

Fluidisation converts a packed bed of particles into an expanded, suspended bed that possesses many of the properties of a fluid: the bed has zero angle of repose, seeks its own level and assumes the shape of the containing vessel.

Fluidisation is an interdisciplinary field of inquiry and after more than 50 years of research process, chemical and mechanical engineering, physics and mathematics it

still offers challenging problems to address. Fluidised beds are used successfully in many processes, catalytic and noncatalytic. Despite its apparent simplicity, fluidisation encompasses a variety of patterns (bubbling, fast, turbulent, spouted three-phase, fixed or circulating). It is affected by such operations as mass and heat transfer, erosion and attrition, entrainment and elutriation, and separation. It finds application in power generation, the chemical industry (e.g. phthalic anhydride and acrylonitrile production), the petrochemical industry (e.g. hydrocarbon cracking and production of synfuels via the Fischer-Tropsch reaction), in the incineration of hazardous waste, coal and biomass gasification, the processing of minerals (alumina, limestone and phosphate rocks), and in the biochemical, pharmaceutical and food industries. These processes and applications make fluidisation a challenging field for fundamental and applied research.

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