



Tata Institute of Fundamental Research

Homi Bhabha Road, Colaba, Mumbai, INDIA, 400005

Engineer's Day ASET Colloquium



Topic: High Speed Rotor Technology for gaseous separation

There is often a need to separate dissimilar constituents in a mixture or chemical compound or, in special cases, isotopes of an element. Chemical separation techniques are most commonly used in the chemical industry for the purpose. However, other means using electric/magnetic fields or physical/centrifugal means have been found to be very useful in certain applications. Use of gravity is common to achieve physical separation, centrifugal separation, achieved by rotation, is more effective. Ease of separation by centrifugal means is determined by the density difference between the constituents being separated and their extent of immiscibility. This technique has been successfully used even in isotopic separation, though the density difference is extremely small. This, however, requires the generation of very high centrifugal fields, achieved by rotor systems operating at several tens of thousands of revolutions per minute. This poses challenges in terms of choice of rotor materials, bearings supporting the rotor, suitable electric drive systems, all capable of operation at ultra-high speeds over very long periods of time. for large scale production.

Speaker: Dr. G. Gouthaman, Former Distinguished Scientist and Chairman, BARC Safety Council

Dr. G. Gouthaman graduated in Mechanical engineering from IIT Kharagpur and joined the Training School at Bhabha Atomic Research Centre. He then joined the Chemical Engineering Group at BARC and had been involved in the development of High-Speed Rotor Systems for nuclear material processing application. He has made several contributions in the successful development of high-speed rotor technology which are presently under successful operation at production level. His contribution has mainly been in the areas of Machine Design, Mechanical Vibrations and Rotor dynamics. After successful exploitation of the full potential offered by high strength steel, he was engaged in the development of carbon fibre-based rotor systems to achieve further enhancement of the system performance. These systems are presently under full-scale deployment. He obtained his doctoral degree in Chemical Technology from Institute of Chemical Technology, Mumbai.



Date & Time: Friday, 13th September 2019, 4pm
Venue: Main Lecture Theatre (AG-66), TIFR, Mumbai

This talk is open to all, no registration needed. Please carry your photo ID card. For further details, please email to 'aset@tifr.res.in' or call +91-9987537702.