ICTS FOUNDATION DAY LECTURE

ICTS | International Centre for Theoretical Sciences
TATA INSTITUTE OF FUNDAMENTAL RESEARCH

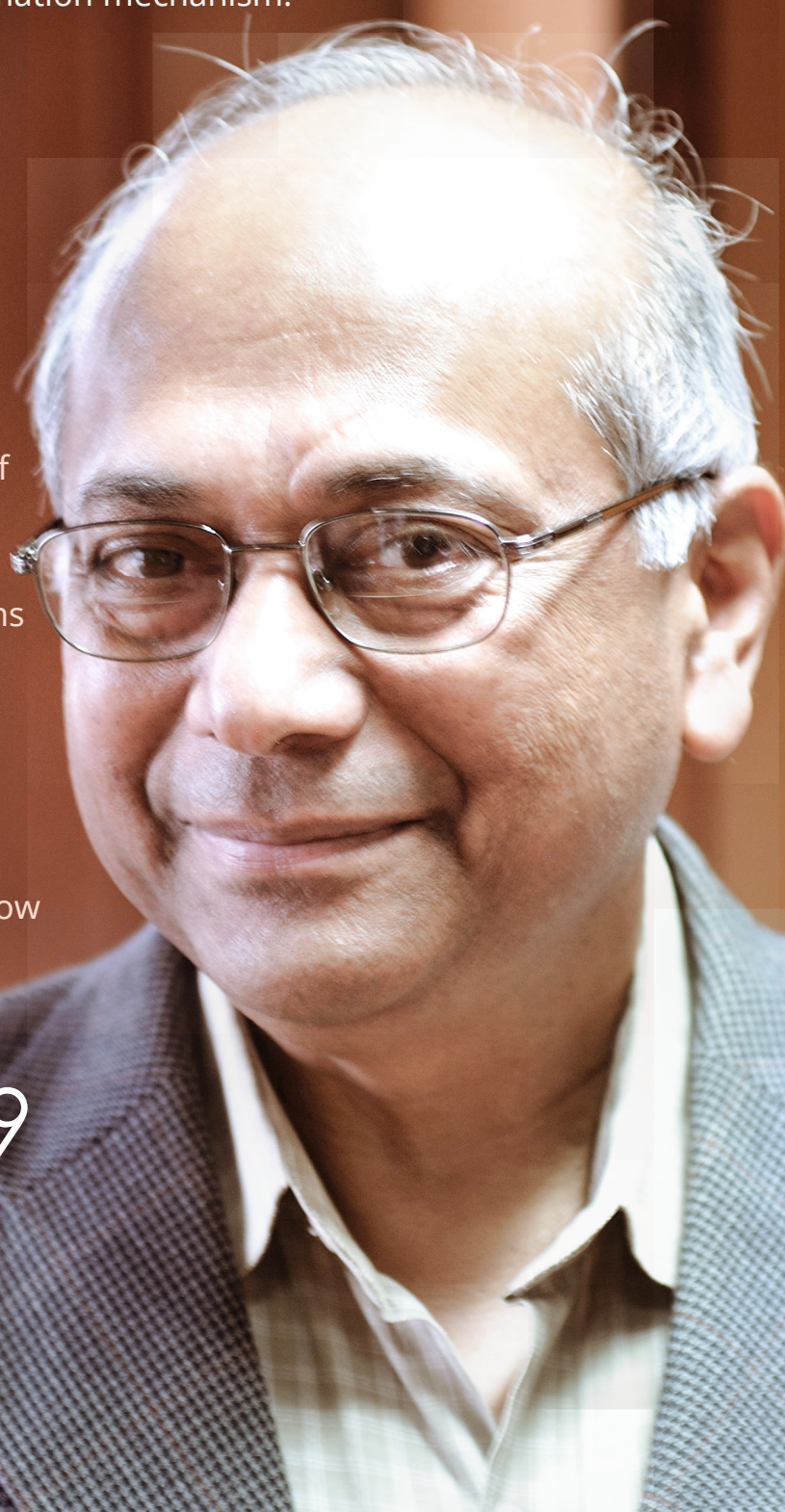
The Beta (bcc) to Omega (hexagonal) Phase Transition: A Unique Example of Displacement Ordering

The omega phase, which is an equilibrium phase in Group 4 metals at high pressures, forms in several alloys of Ti, Zr and Hf and in many other bcc alloys as a metastable phase. The beta (bcc) to omega (hexagonal) transformation can be accomplished by introducing a periodic displacement of {222} planes of the parent bcc structure. In spite of being a first order transition, strong pre-transition effects, including phonon softening to a limited extent are observed in this case. Recent high-resolution electron microscopy work has revealed a number of interesting features which provide a clearer picture of the transformation mechanism.

Srikumar Banerjee

Homi Bhabha National Institute, Mumbai

Srikumar Banerjee is the Chancellor, Homi Bhabha National Institute, Mumbai. He has previously served as the Chairman, Atomic Energy Commission and Secretary to the Government of India, Department of Atomic Energy and as Director, BARC. He also holds the position of a Distinguished Visiting Professor position at Indian Institute of Technology, Kharagpur and University of Delhi.Banerjee's contributions are in the areas of phase transformations in zirconium and titanium alloys, effect of radiation on order – disorder transitions and tailoring microstructure and texture of nuclear structural materials through thermo-mechanical processing. Banerjee list of honours include the Bhatnagar prize in Engineering Sciences (1989), Humboldt Research Award (2003) and the Padmashri (2005) among many others. He is fellow of all Indian academies of science and engineering as well as TWAS.



5 pm, 26 December 2019
RamanujanHall,
ICTS Bengaluru