

# PROFESSOR JAGADISHWAR MAHANTY DISTINGUISHED LECTURE SERIES IN PHYSICS



**Prof. Jagadishwar Mahanty** was born on 20th July 1932 in Puri, Orissa. After his M. Sc. in Physics from Calcutta University, he worked for several years at the National Physical Laboratory. In 1956, he went to the University of Maryland, USA for his doctoral degree. After completing his Ph.D. in 1960 he joined Panjab University, Chandigarh and subsequently joined the Physics department of IIT Kanpur in 1961. He was instrumental in shaping the Physics department during its infancy. He was the Head of the Physics department from 1967 to 1972. In 1971, Prof. Mahanty decided to concentrate on his own research and gave up the administrative responsibility. In 1972, he joined the prestigious Australian National University and superannuated from there in July 1995 due to ill health.

Prof. Mahanty was an excellent physicist with a very modest and kind personality. His helpful nature to both students and colleagues was a great asset of his character. He was a warm and caring person who is greatly missed by his family and friends.



IIT  
Kanpur

## Extreme Light, Extreme States

Date: 5th February, 2016 (Friday)

Time: 6:00 PM (Tea@5:30 PM)

Venue: Outreach Auditorium

**Abstract:** High intensity, ultrashort light pulses are revolutionizing science in exciting ways, as they can excite matter to high temperature at high density. This feature of ultrashort pulses provides a great opportunity for doing experiments in the lab that help us understand the behaviour of matter pushed to extreme conditions pervading most of the universe! Research in this area bridges diverse areas - from astrophysics to accelerator physics and from condensed matter science to biology. This talk will first introduce the subject and then dwell on two basic themes - one dealing with how light couples to such plasmas and another that deals with the consequence of such coupling, namely the production and behaviour of 'hot' electrons (ranging up to MeV). I will present some results of experiments performed at TIFR - creation of gigantic magnetic fields, ultrafast plasma dynamics, passage of relativistic particles through dense, hot matter and interesting consequences in terms of electron and ion acceleration, ultrafast hard x-ray emission, laser fusion, laboratory astrophysics etc.

## Speaker: Prof. G. Ravindra Kumar

Professor G. Ravindra Kumar did his MSc (Hons) in physics from the Birla Institute of Technology and Science, Pilani, in Rajasthan, India. He obtained his PhD from the Department of Physics at IIT Kanpur in 1990. After a year of postdoctoral work there, he joined the Tata Institute of Fundamental Research, in Mumbai, in 1992, in the group now known as UPHILL (Ultra-short Laser Pulse High Intensity Laser Laboratory) in the Department of Nuclear and Atomic Physics. He is now a senior professor there. He is a Fellow of the Indian Academy of Sciences and the Indian National Science Academy and a recipient SS Bhatnagar Prize for Physics in 2003 and Infosys Prize in Physics in 2015.



Prof. G. Ravindra Kumar is well known for his pioneering experimental contributions to the physics of high intensity laser matter interactions with an aim to probe matter at extreme densities and temperature. His significant contributions include the first measurement of mega-gauss turbulent magnetic fields in laser plasma interactions; experimental demonstration of large distance electron beam transport in the carbon nanotube system; discovery of a terahertz hydrodynamic mode in a hot laser plasma, to name a few. His results are immensely relevant to laboratory testing of astrophysical scenarios like supernova explosions and high energy particle production.