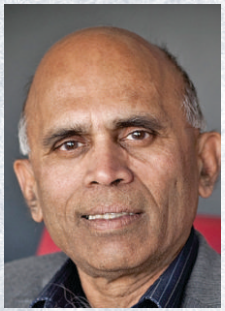
About the speaker



Professor Ganapathy Baskaran is an eminent physicist in the field of theoretical condensed matter. He has worked on strongly correlated electronic systems, high T_C superconductivity, fractional quantized Hall Effect, non-Fermi liquid states in 2 and 3D, supersolid He4 and solid state realization of Qubits. He has shown a growing interest in quantum phenomena in biological systems such as exciton transport in photo-synthetic system, electron transport in DNA and some aspects of neurobiology. He has been an active campaigner for interaction between biology and condensed matter physics.

Professor Baskaran obtained his Ph.D. in Theoretical Condensed Matter Physics in 1975. He received the prestigious ICTP Award (Kastler Prize) for the year 1983. This award is given once in three years to an outstanding research worker working in the field of solid state, atomic or molecular physics in a developing country. He is also the recipient of the Shanthi Swarup Bhatnagar Award for Physical Sciences for the year 1990. He was elected Fellow of the Indian Academy of Sciences in 1988, Fellow of the Indian National Science Academy in 1991 and Fellow of the Third World Academy of Sciences in 2008. He has also been honoured with Distinguished Alumni Award of the Indian Institute of Science, Bangalore for the Centenary Year 2008.

At present he is the SERB Distinguished Fellow at The Institute of Mathematical Sciences, Chennai and holds the Distinguished Visiting Research Chair at the Perimeter Institute for Theoretical Physics, Waterloo, Ontario in Canada.

Saha Institute of Nuclear Physics Alumni Association

(SINPAA)

Cordially invites you to attend the

2nd M K Pal Memorial Lecture

COLORFUL NUCLEI AND CONDENSED MATTER

by

Professor G. Baskaran
SERB Distinguished Fellow
The Institute of Mathematical Sciences, Chennai
&
Distinguished Visiting Research Chair
Perimeter Institute for Theoretical Physics, Waterloo, Ontario, Canada

Venue

Meghnad Saha Auditorium
Saha Institute of Nuclear Physics, Kolkata

on

March 29, 2019 at 3 p.m.

SINP Alumni Association (SINPAA)
SINP, Kolkata

Born: 26 October, 1932; Died on 3 March, 2016

Prof. Manoj Kumar Pal was a highly distinguished nuclear physicist of our times. A profound thinker, he played a pioneering role in the growth of theoretical nuclear physics in India. His main contribution lies in the decisive role played by him in bridging the apparently disparate nuclear models, the collective and the shell model in the Brueckner-Bethe-Hartree-Fock approach. In this game, he contributed extensively to the microscopic understanding of the nucleonic behaviour in the nucleus and their correlations, core-polarization and pairing vibrations in degenerate nuclear systems, finding the fission path from study of the collective potential energy of transitional nuclei and development of the adiabatic time-dependent Hartree-Fock theory. A brilliant teacher and an exceptional mentor to research students, Prof. Pal along with his colleagues built one of the finest schools of theoretical nuclear physics in India in his long academic journey. That is his permanent legacy.

Prof. Pal was the Director of the Saha Institute of Nuclear Physics from 1983 till his retirement in 1992. He was a fellow of the Indian National Science Academy, Delhi and fellow of the Indian Academy of Science, Bangalore. He was recipient of M. N. Saha Gold Medal from the Asiatic Society, Kolkata. He wrote books on both the Special and General Theory of Relativity and an advanced textbook titled *Theory of Nuclear Structure* which is widely used by practitioners of nuclear physics worldwide. An erudite scholar in many disciplines, he also published a historical novel titled *Forever Free* and a book entitled *Old Wisdom and New Horizon* on science, religion and philosophy.

Colorful Nuclei and Condensed Matter

ABSTRACT

There is a long tradition of exchange of ideas between nuclear physics and quantum condensed matter physics. Some known bridges are: Skyrme model of nucleon, Skyrmion crystals, pairing in nuclei, superfluidity of neutron stars, color superconductivity, quark gluon plasma, etc. At the present moment such exchanges seem valuable. In a nucleus, colorful quarks and gluons are confined by strong QCD forces. It results in integer electric charges and color singlet states. Is it possible to get a transient glimpse of color of gluons and quarks or fractional charges of quarks, in some low energy nuclear physics experiments, without use of high energy collider machines? Inspired by some exciting parallels in condensed matter physics, I will end with a wild speculation that it might be possible.

PROGRAMME

Welcome Address
Professor Sudeb Bhattacharya
President, SINPAA

Address by Guest of Honour
Professor Ajit Kr. Mohanty
Director, SINP

M K Pal Memorial Lecture
Professor G. Baskaran

Presentation of Memento
President, SINPAA