Physical Research Laboratory, Ahmedabad

SPECIAL COLLOQUIUM - 13 – 19

Speaker: **Prof. Girish S. Agarwal, FRS**
Noble Foundation Chair and Regents Professor, Department of Physics
Oklahoma State University, USA.

Title: **From Quantum Interference to Entanglement**

Abstract

The interference of the beams of light led to the foundations of wave optics and this motivated founding fathers of quantum mechanics to arrive at the wave equation for quantum particles like electrons. With the advent of quantum theory of light by Planck, Dirac pondered over how the interference would arise with single photons as these fundamental entities could not be broken in two parts like light waves. I would review recent progress on the quantum interference of independent particles which is against the common belief. I would describe the new physics here and a number of applications leading to entanglement of micro as well as macro systems.

The Speaker

Prof. Girish S. Agarwal is an alumnus of Banaras Hindu University. He did his Ph.D. from the Rochester University, USA. He then returned to India and worked at TIFR before accepting an invitation to establish a School of Physics at the Central University, Hyderabad. He was the Director, PRL during 1995-2005 and has nurtured an internationally respected school of quantum optics in India over the past 30 years. He has been at the Oklahoma State University, USA since 2005 as Noble Foundation Chair and Regents Professor. Prof. Agarwal is internationally acclaimed for his contributions to Quantum Optics, Laser Physics and Statistical Mechanics. He is a recipient of the S.S. Bhatnagar Prize, the Humboldt Research Award, G.D. Birla Award, M.N. Saha birth centenary award and the Albert Einstein Professorship of the Indian National Science Academy. He is a Fellow of the Royal Society, the American Physical Society, the Optical Society of America, the Indian National Science Academy, National Academy of Sciences and Indian Academy of Sciences, and the Third World Academy of Sciences. He has published more than 500 papers in top international journals, including Review Articles and Research Monographs. He has authored a book on "Quantum Optics" which is published by Cambridge University Press.

Tuesday: 13 August, 2013, 16:00 hrs

K.R. Ramanathan Auditorium, PRL

Tea at 15:30 hrs

ALL ARE WELCOME