

## Faculty Profile



**Name** Dr Sumita Datta

**Designation** Associate Professor

**Teaching areas** Quantum Mechanics, Statistical Physics, Numerical Methods,

**Reserach areas** Computational Condensed Matter Physics, Quantum Many Body Problems, Bose Einstein Condensation, Physics of Graphene and Solitons and Nonlinear Dynamics, Markov Chain Monte Carlo, Basic Stochastic Processes, Quantum Monte Carlo Simulations (Variational and Diffusion)

**Education** Ph D in Physics -The University of Texas at Arlington, USA, 1996  
M. Sc in Physics- Indian Institute of Technology, Kharagpur, 1987  
B.Sc( Honours in Physics)- Scottish Church College, Kolkata, 1983

**Professional Experience** 21 years

1. Associate Professor, Icfai Foundation For Higher Education, Hyderabad, 07-2016-Present
- 2 Research Scientist, Indian Association for the Cultivation of Science 12-2010-06-2016
- 3 Reader, Department of Physics, Pondicherry University 09-2010-11-2010
- 4 Academic faculty of Physics, S N. Bose National Centre for Basic Sciences Kolkata, India 08-2002-08-2010
- 5 Research Associate, Indian Association for the Cultivation of Science 10-1997-07-2002
- 6 Visiting Scientist, Indian Space Research Organization, Bangalore, 06-1997-9-1997
7. Postdoctoral Fellow, The University of Texas at Arlington, USA, 01-1996-05-1997
- 8 Graduate Research Assistant, The University of Texas at Arlington, USA, 09-1992-12-1995
- 9 Graduate Teaching Assistant, The University of Texas at Arlington, USA, 09-1989-08-1992

### Research /publications

#### Research Projects:

**Research Projects** (1) The project entitled '**Quantum diffusion of the inter soliton distance in a Gross-Pitaevskii breather**' got approved for funding from the Department of Science and Technology, New Delhi on June 15, 2017 (**15 lakhs**) under SERB Extramural funding scheme (award # EMR/2016/005492)

(2) became an active participant in Joint NSF-BSF Project on : **Nonlinear Dynamics with Gross-Pitaevskii Breathers** since July 2017

#### Publications:

- 1 A path integral Monte Carlo study of Anderson Localization in cold gases in presence of disorder S Datta, Int J Comput Methods 13(6) pp-1650032, 2016
- 2 The lowest order relativistic corrections of hydrogen molecule – Sumita Datta, S. A. Alexander and R. L. Coldwell- Int J Q Chem , 112, pp-731-739, Feb 2012
- 3 Lowest Order Relativistic Corrections of Helium Computed Using Monte Carlo Methods , S. A. Alexander, S Datta and R.L. Coldwell, Phys Rev A. 81, pp 032519, 2010
- 4 Calculations of Lyapunov exponent using an equivalent Stochastic system, S Datta and J. K. Bhattacharjee, J Phys A (Lett) 34, # 44, pp L603-L608 2001
5. Feynman-Kac path integral calculations with high quality trial wave functions, S Datta, J L Fry N. G. Fazleev, S. A. Alexander & R. L. Coldwell, Phys. Rev A 61 pp 030502 2000 (Rapid Communication)