PhD:

Physics (St.John's / Brookhaven National Laboratory, 1973/74) FNA, FNASc, FASc, FTWAS

Area of Interest:

Condensed Matter Physics (Theory)

Email ID:

vice-chancellor@visva-bharati.ac.in
sushantad@gmail.com

Research Interest:

Non-equilibrium Statistical Mechanics, Dissipative Quantum Systems, Nanomaterials, Fluctuation Spectroscopy, Quantum Optics.

Academic Qualification:

1. Ph.D. (Physics), Brookhaven National Laboratory, St. John's University, New York. (Thesis submitted – 1973, Degree awarded – 1974)
2. M.Sc. (Physics), Calcutta University, 1967
3. B.Sc.(Physics Honours), Calcutta University, 1965

Positions:

1. Lecturer in Physics, Presidency College, Kolkata (1968-69)
2. Post-Doctoral Fellow, Carnegie-Mellon University, Pittsburgh (1973-75)
3. Research Associate, University of Alberta (1975-76)
4. Scientific Officer, Materials Science Laboratory, Indira Gandhi Centre for Atomic Research, Kalpakkam (1976-81)
5. Reader, School of Physics, University of Hyderabad, Hyderabad (1981-86)
6. Professor, School of Physical Sciences, JNU, New Delhi (1986-99)
7. Dean, School of Physical Sciences, JNU, New Delhi (1987-89 & 1993-95)
8. Director, S.N. Bose National Centre for Basic Sciences, Salt Lake, Kolkata (1999 - 2005)
9. Director, Indian Institute of Science Education and Research (IISER), Kolkata (2006 - 28 Sept. 2011)
10. Honorary Professor, Jawaharlal Nehru Centre for Advanced Scientific Research (2003-)
11. Vice-Chancellor, Visva-Bharati (29th Sept, 2011 -)
12. Adjunct Professor, Indian Institute of Science Education & Research (IISER), Pune (2012-)

Awards and Honors:

Professional Honours

1. Young Scientist Medal, Indian National Science Academy (1977)
2. Alexander von Humboldt Fellowship, tenured at the Institute for Solid State Physics, Juelich, Germany (1984, May-July 1985, December 1987, January-June 1997, 2002 and 2003)
3. Research Fellow, Indian National Science Academy (1987-89)
4. Associate, International Centre for Theoretical Physics, Trieste, Italy (1985-91) Senior
5. Associate, International Centre for Theoretical Physics, Trieste, Italy (1992-1997) Visiting
6. Associate, Darwin College, Cambridge University (May-July 1993)
7. Bibharani Devi Prize of Calcutta University (2002)
8. DAE Raja Ramanna Award of the Jawaharlal Nehru Centre for Advanced Scientific Research (2002)
9. Sisir Kumar Mitra Medal and Lecture of the Indian Science News Association (2004)
10. Distinguished Lecturership Award for 2005-2006,
11. Materials Research Society of India Swamy Atulananda Endowment Award Lecture, Ramakrishna Mission (2005)
12. L.A. Meera Memorial Lecture (2005)
13. Meghnad Saha Memorial Award of the National Academy of Sciences, Allahabad (2005)
14. C.V. Raman Birth Centenary Award, 93rd Indian National Science Congress (2006)
15. Visiting Fellow under the Distinguished Scientist Visitors' Programme of the Faculty of Natural Sciences of Ben-Gurion University of the Negev, Beer-Sheva, Israel (2007-2008)
16. J. C. Bose Fellowship of the Department of Science & Technology, India (2006-2010)
17. Department of Atomic Energy (DAE) C V Raman Award Lecture (2009)
18. Indian National Science Academy (INSA) C V Raman Medal (2010)

Fellowship

1. Elected Fellow, Indian Academy of Sciences, Bangalore (1992)
2. Elected Fellow, Indian National Science Academy, New Delhi (1994)
3. Elected Fellow, The National Academy of Sciences, Allahabad (1995)
4. Elected Fellow, The Academy of Sciences for the Developing World, (TWAS) (1999)
5. Elected Fellow, West Bengal Academy of Science & Technology (2000)

List of Publications:

2011

104 Dephasing of a Qubit due to Quantum and Classical Noise, E. K. Anil & S. Dattagupta, (Intl. Jour. of Physics – submitted)

103 Superconducting Fluctuations and Anomalous Phonon Renormalization in Superconductor $Ca_4Al_2O_{5.7}Fe_2As_2$, P. Kumar, A. Bera, D.V.S. Muthu, P.M. Shirage, A. Sood and S. Dattagupta (to be submitted)

102 Phase Ordering, Dynamics of Ferroelectric Domains in Thin Films, Prasenjit Ghosh, Manas K Roy, Sanjay Puri and Sushanta Dattagupta, Phys. Rev. E (To be submitted)

2010

101 Retrieving qubit information despite decoherence; Amnon Aharony, Shmuel Gurvitz, Ora Entin-Wohlman, and Sushanta Dattagupta, Phys. Rev. B 82, 245417 (2010).

100 Modeling of ferroelectric domain imaging by atomic force microscopy; Manas K. Roy, Jaita Paul, and Sushanta Dattagupta, J. Appl. Phys. 108, 064102 (2010).

99 Domain dynamics and fractal growth analysis in thin ferroelectric films; Manas K. Roy, Jaita Paul, and Sushanta Dattagupta, J. Appl. Phys. 108, 014108 (2010).

98 Glucose induced fractal colony pattern of Bacillus thuringiensis; Manas K. Roy, Paromita Banerjee, Tapas K. Sengupta, and Sushanta Dattagupta, J. Theoretical Biology 265, 389 (2010).

97 Role of quantum heat bath and confinement in the low-temperature thermodynamics of cyclotron motion; M. Bandopadhyay and S. Dattagupta, Phy. Rev. E 81, 042102 (2010).

96 Dissipative quantum systems and the heat capacity; Sushanta Dattagupta, Jishad Kumar, S. Sinha, and P.A. Sreeram, Phy. Rev. E 81, 031136 (2010).

2009

95 Evolution of 180°, 90°, and vortex domains in ferroelectric films; Manas Kumar Roy, Shamik Sarkar, and Sushanta Dattagupta, Appl. Phys. Lett. 95, 192905 (2009).

94 Low-temperature thermodynamics in the context of dissipative diamagnetism; Jishad Kumar, P.A. Sreeram, and Sushanta Dattagupta, Phy. Rev. E 79, 021130 (2009).

93 Magnetism in the ordered metallic perovskite compound GdPd3BxC1-x; Abhishek Pandey, Chandan Mazumdar, R. Ranganathan and S. Dattagupta, J. Magnetism and Magnetic Materials 321, 2311 (2009).

2008

92 Transverse vibrations driven negative thermal expansion in a metallic compound GdPd3B0.25C0.75; Abhishek Pandey, Chandan Mazumdar, R. Ranganathan, S. Tripathi, D. Pandey, and S. Dattagupta, Appl. Phys. Lett. 92, 261913 (2008).

91 Negative temperature coefficient of resistance in a crystalline compound; Abhishek Pandey, Chandan Mazumdar, R. Ranganathan, Molly de Raychaudhury, T. Saha-Dasgupta, Saurabh Tripathi, Dhananjai Pandey, and S. Dattagupta, Europhysics Letters 84, 47007 (2008).

90 Quantum Mechanics under rapidly varying external perturbations; M. Bandopadhyay and S. Dattagupta, Pramana 70, 382 (2008).

2007

89 Probing Single Jumps of Surface Atoms; G. Vogl, M. Sladecek and S. Dattagupta, Phys. Rev. Lett. 99, 155902 (2007).

2006

88 Memory in nanomagnetic systems: Superparamagnetism versus spin-glass behavior; M. Bandopadhyay and S. Dattagupta, Phys. Rev. B 74, 214410 (2006).

87 Diffusion Enhancement in a Periodic Potential under High-Frequency Space-Dependent Forcing; M.Bandopadhyay, S. Dattagupta and M. Sanyal, Phys. Rev. E 73, 051108 (2006).

86 Dissipative Diamagnetism - A Case Study for Equilibrium and Nonequilibrium Statistical Mechanics; M. Bandyopadhyay and S. Dattagupta, J. Stat. Phys. 123, 1273 (2006).

85 Landau-Drude Diamagnetism: Fluctuation, Dissipation and Decoherence; M. Bandopadhyay and S. Dattagupta, J. Phys.: Condensed Matter 18, 10029 (2006).

2005

84 Spin Dynamics in a Dissipative Environment: from Quantal to Classical; J.L. Garcia-Palacios and S. Dattagupta, Phys. Rev. Lett. 95, 190401 (2005).

83 Memory in a magnetic nanoparticle system: Polydispersity and interaction effects; S. Chakraverty, M. Bandyopadhyay, S. Chatterjee, S. Dattagupta, A. Frydman, S. Sengupta, and P. A. Sreeram, Phys. Rev. B 71, 054401 (2005).

82 Line shape of beam deflection of magnetic nanoparticles in a Stern-Gerlach setup; Rajib Kumar Das and Aniruddha Konar and S. Dattagupta, Phys. Rev. B 71, 014442 (2005).

2003

81 Quantum Treatment of the Anderson-Hasegawa Model in the presence of Superexchange; P.A. Sreeram and M. Mitra and S. Dattagupta, Pramana 61, 601-609 (2003).

80 Dielectric Relaxation in a Deuteron Glass; V. Banerjee and S. Dattagupta, Phys. Rev. B 68, 054202-8 (2003).

79 Polaronic Heat Capacity in the Anderson-Hasegawa Model; M. Mitra and P.A. Sreeram and S. Dattagupta, Phys. Rev. B 67,132406-4 (2003).

2002

78 Model Quantum Magnet – II. Calculation of NMR Lineshapes; V. Banerjee and S. Dattagupta, Phys. Rev. B 66, 064418 – 064427 (2002).

77 Escape rates in the presence of high frequency perturbations; S. Sarkar and s. Dattagupta, J. Mod.Phys. B 16, 1247 – 1254 (2002).

76 Zeno Blocking of Interplanar Tunneling by Intraplane Inelastic Scattering in Layered Superconductors: A Generalized Spin-Boson Analysis; M. Sanjay Kumar S. Dattagupta and N. Kumar, Physical Review B 65, 134501 – 134508 (2002).

75 Effect of Charge Ordering/Disordering on Raman Line Shape in Manganites; S. Dattagupta and A.K. Sood, Physical Review B 65, 064405 – 064417 (2002).

2001

74 Magneto-Optic Drift of Ions; R. Ghosh S. Dattagupta and J. Singh, Physical Review A 64, 063403 – 063411 (2001).

73 Dissipationless Decoherence; G. Gangopadhyay, M. Sanjay Kumar and S. Dattagupta, J. Phys.A: Math & Gen. 34, 5487 – 5495 (2001).

72 Model Quantum Magnet I. Effect of Hyperfine Interactions on Phase Diagram and Dynamic Susceptibility; Varsha Banerjee and S. Dattagupta, Physical Review B 64, 024427 – 024437 (2001).

71 Landau Diamagnetism Revisited; S. Dattagupta, A.M. Jayannavar and N. Kumar, Current Science 80, 861 – 863 (2001).

2000

70 Optical Hall effect; J. Singh, R. Ghosh and S. Dattagupta, Phys. Rev. A 61, No.2, 025402 - 025404 (2000).

1999

69 Magneto-optic piston effect; S. Dattagupta, R. Ghosh and J. Singh, Physical Review Letters 83, 710 - 713 (1999).

1998

68 3d model of strain ordering in steel: II. Relaxational effects; S.K. Ghoshal and S. Dattagupta, Pramana 51, 519 - 538 (1998).

67 3d model of strain ordering in steel: I. Static effects; S.K. Ghoshal and S. Dattagupta, Pramana 51, 519 - 538 (1998).

66 Dynamic susceptibility of a model quantum glass; V. Banerjee and S. Dattagupta, J. Phys. C 10, 8351-8364(1998).

65 Theory of relaxation of magnetic clusters in a Stern-Gerlach set up; S. Dattagupta and S.D. Mahanti, Phys. Rev. B 57, 10244 - 10247 (1998).

64 Phonon-assisted asymmetric tunneling in a double well potential - consequences for neutron scattering and diffusion; S. Dattagupta and H.R. Schober, Phys. Rev. B 57, 7606 - 7612 (1998).

1997

63 Landau diamagnetism in a dissipative and confined system; S. Dattagupta and J. Singh, Physical Review letters 79, 961 - 965 (1997).

62 Dielectric relaxation in a proton glass; V. Banerjee and S. Dattagupta, Phase Transitions 62, 233 - 243 (1997).

1996

61 Stochastic motion of charged particle in a magnetic field II. Quantum Brownian treatment; S. Dattagupta and J. Singh, Pramana 47, 211 - 224 (1996).

60 Stochastic motion of charged particle in a magnetic field I. Classical treatment; J. Singh and S. Dattagupta, Pramana 47, 199 - 210 (1996).

1995

59 Ferroelasticity in Y-Ba-Cu-O. II. Relaxation effects; S.K. Ghoshal and S. Dattagupta, Phase Transitions 54, 181 - 191 (1995).

58 Hysteresis in a quantum spin model; V. Banerjee, S. Dattagupta and P. Sen, Phys. Rev. E 52, 1436 - 1446 (1995).

57 Ferroelasticity in Y-Ba-Cu-O; S. Dattagupta and S.K. Ghoshal, Phase Transitions 54, 95 - 108 (1995).

1994

56 Analysis of AC susceptibility data in a quantum spin glass; V. Banerjee and S. Dattagupta, Phys. Rev. B 50, 9942 - 9950 (1994).

55 A stochastic model for transient magnetic fields as observed by perturbed angular distribution of gamma rays; T. Qureshi and S. Dattagupta, Z. Phys. D 31, 135 - 142 (1994).

54 Analysis of spectroscopic data in Kondo systems; T. Qureshi and S. Dattagupta, Phys. Rev. B 49, 12848 - 12859 (1994).

53 Phase ordering dynamics in a gravitational field; S. Puri, N. Parekh and S. Dattagupta, J. Stat. Phys. 75, 839 - 857 (1994).

1993

52 Spring-defect model of structural phase transition in YBa_2 Cu_3 O_(7−δ); S. Dattagupta and S.K. Ghoshal, Solid State Commns. 88, 547 - 551 (1993).

51 Relaxational dynamics of quantum spin glases; S. Dattagupta, B. Tadic, R. Pirc, and R. Blinc, Phys. Rev. B 47, 8801 - 8808 (1993).

50 Interplay of orientational order and viscoelasticity in supercooled liquids near the glass transition; S. Dattagupta and L.A. Turski, Phys. Rev. E 47, 1222 - 1229 (1993).

49 Quantum diffusion of muons in metals; T. Qureshi and S. Dattagupta, Phys. Rev. B 47, 1092 - 1095 (1993).

1992

48 Dynamical scaling in anisotropic phase separating systems in a gravitational field; S. Puri, K. Binder and S. Dattagupta, Phys. Rev. B 46, 98 - 107 (1992).

47 The Langevin dynamics of vibrated powders; A. Mehta, R.J. Needs and S. Dattagupta, J. Statistical Physics 68, 1131 - 1141 (1992).

46 Kinetic rate law for a Ø4-model in the order-disorder limit; S. Padlewski and S. Dattagupta, J. Phys. Condensed Matter 4, 4373 - 4386 (1992).

1991

45 Tunneling in proton glasses: stochastic theory of lineshape; S. Dattagupta, B. Tadic, R. Pirc and R. Blinc, Phys. Rev. B 44, 4387 - 4396 (1991).

44 Rate equation for atomic ordering in meanfield Theory II. general considerations; S. Dattagupta, V. Heine, S. Marais and E. Salje, J. Phys. Condensed Matter 3, 2963 - 2984 (1991).

43 Rate equation for atomic ordering in meanfield theory I. uniform case; S. Dattagupta, V. Heine, S. Marais, and E. Salje, J. Phys. Condensed Matter 3, 2963-2984 (1991).

42 Dynamics of an impurity spin coupled to a spin-boson dissipative system; T. Qureshi and S. Dattagupta, J. Phys. Condensed Matter 3, 1079-1087 (1991).

1990

41 Relaxation behaviour of biased two-level systems, in metals in the weak-damping limit; T. Qureshi, nd S. Dattagupta, Pramana 35, 579-591 (1990).

1989

40 The structure factor for neutron scattering from a two-state system in metals; S. Dattagupta, H. Grabert and R. Jung, J. Phys. Condensed Matter 1, 1405 - 1422 (1989).

1987

39 Mössbauer spectrum for diffusing atoms including fluctuating hyperfine interactions; S. Dattagupta and K. Schroeder, Phys. Rev. B 35, 1525-1546 (1987).

1986

38 Structure factor for neutron scattering from tunneling systems in metals; H.G. Grabert, S. Linkwitz, S. Dattagupta, and U. Weiss, Europhys. Lett. 2, 631-638 (1986).

1985

37 Monte-Carlo calculations of switching statistics of a two-mode laser; K.P.N. Murthy with S. Dattagupta, Phys. Rev. A 32, 3481-3489 (1985).

36 Orientational order in liquids - a possible scenario of freezing; S. Dattagupta and L.A. Turski, Phys. Rev. Lett. 54, 2359-2362 (1985).

35 The Boltzmann-Lorentz model of collisional broadening of spectra; S. Dattagupta and L.A. Turski, Phys. Rev. A 32, 1439-1446 (1985).

34 Neutron scattering from a quantum oscillator subject to noise; S. Dattagupta and G. Reiter, Phys. Rev. A 31, 1034-1039 (1985).

1984

33 Nonequilibrium response of a disordered Ising chain; S. Dattagupta, R. Vaidyanathan and R. Indira, Zeit. Phys., B 57, 319-328 (1984).

32 Relaxation behaviour of single domain magnetic particles; G.S. Agarwal, S. Dattagupta and K.P.N. Murthy, J. Phys. C 17, 6869-6876 (1984).

31 Brownian motion of a quantum system; S. Dattagupta, Phys. Rev. A 30, 1525-1527 (1984).

30 Linear response analysis of Gorsky relaxation of light interstitials in the presence of ordering; S. Dattagupta and R. Ranganathan, J. Phys. F 14, 1417-1429 (1984).

1983

29 Non-equilibrium susceptibility of superparamagnetic particles; Deepak Kumar and S.Dattagupta, Phys C. 16, 3779-3794 (1983).

1982

28 Strain ordering in b.c.c. metals and the associated anelasticity II. Effect of random interstitial arrangement; S. Dattagupta, J. Phys. F 12, 1363-1368 (1982).

27 Strain ordering in b.c.c. metals and the associated anelasticity; S. Dattagupta, Radha Balakrishnan and Radha Ranganathan, J. Phys. F 12, 1345-1362 (1982).

26 Stochastic model of muon diffusion in the presence of traps: nonsecular effects on spin depolarization; S. Dattagupta and B. Purniah, Zeit, Phys. B 46, 331-339 (1982).

25 Higher order phase transitions in systems far from equilibrium-bicriticality and tetracriticality in two-mode lasers; G.S. Agarwal and S. Dattagupta, Phys. Rev. A 26, 880-887 (1982).

1981

24 Model for vibrational relaxation: pure dephasing and depopulation; A.K. Sood and S. Dattagupta, Pramana 17, 315-326 (1981).

23 Generalized M-diffusion model of molecular rotation, calculation of dipole correlation function; S. Dattagupta and A.K. Sood, Zeit. Phys. B 44, 85-89 (1981).

22 Raman study of orientational disorder in potash alum; A.K. Sood, A.K. Arora, S. Dattagupta, and G. Venkataraman, J. Phys. C 14, 5215-5224 (1981).

21 Gorsky relaxation in the presence of traps; V. Balakrishnan and S. Dattagupta, Zeit. Phys. B 42, 13-21 (1981).

1980

20 Signal-to-noise enhancement of lock-in amplifiers; K. Neelakantan, S. Dattagupta and K.P. Rajappan, Rev. Sci. Instn. 51, 250-251 (1980).

1979

19 Analysis of ultrasonic anomaly in V3 Si; S. Dattagupta and G. Venkataraman, Pramana 13, 205-218 (1979).

18 Theory of ultrasonic scattering by grains in polycrystals; R. Ranganathan and S. Dattagupta, Phys. Stat. Sol.(a) 54, 537-548 (1979).

17 Model for infrared and Raman Studies of molecular rotations in liquids and gases; S. Dattagupta and A.K. Sood, Pramana 13, 423-445 (1979).

1978

16 Analysis of signal-to-noise enhancement of box-car averagers; S. Dattagupta and K. Neelakantan, Pramana 11, 295-306 (1978).

15 A Stochastic theory of anelastic creep; V. Balakrishnan, S. Dattagupta and G. Venkataraman, Phil. Mag. 37, 65-84 (1978).

1977

14 Breakdown of the 'white-noise approximation' in the Mössbauer relaxation spectra: the case of Cs2 NaYbCl8; S. Dattagupta, G.K. Shenoy, B.D. Dunlap, and L. Asch, Phys. Rev. B 16, 3893-3902 (1977).

13 Effect of collisions on spectral lines in gases; S. Dattagupta, Pramana 9, 203-221 (1977).

12 Stochastic model of classical bath variables and its influence on lineshape expressions; S. Dattagupta, Phys. Rev. B 16, 158-163 (1977).

11 Global phase diagram for a three-component model; D. Furman, S. Dattagupta and R.B. Griffiths, Phys. Rev. 15, 441-464 (1977).

10 Self-Interstitials trapped at Co impurities in electron - irradiated Al: theoretical study of the static and dynamic quadrupolar interactions on Mössbauer lineshape; S. Dattagupta, Sol. St. Commns. 24, 19-22 (1977).

1976

9 Calculating Mössbauer-paramagnetic relaxation spectra without the "White-noise approximation"; G.K. Shenoy, B.D. Dunlap, S. Dattagupta, and L. Asch, Phys. Rev. Lett. 37, 539-542 (1976).

8 Spin-relaxation spectra of Γ4 quartet; G.K. Shenoy, B.D. Dunlap, S. Dattagupta, and L. Asch, Jour. de Phys. Colloq. C 6, 85-87 (1976).

7 Effect of molecular motions in liquids on Mössbauer relaxation spectra; S. Dattagupta, Phys. Rev. B 14, 1329-1332 (1976).

6 Stochastic theory of spin relaxations in liquids; S. Dattagupta and M. Blume, Phys. Rev. A 14, 480-494 (1976).

5 Study by Mössbauer effect of diffusion of interstitials (C or N) in austenite, a theoretical treatment; S. Dattagupta, Phil. Mag. 33, 59 (1976).

1975

4 Effects of off-diagonal hyperfine interaction on Mössbauer relaxation spectra; S. Dattagupta, Phys. Rev. B 12, 3584 - 3595 (1975).

3 Effect of nuclear motion on Mössbauer relaxation spectra; S. Dattagupta, Phys. Rev. B 12, 47-57 (1975).

1974

2 Stochastic theory of lineshape, II. Nonsecular effects in the EPR spectrum of CO2- in calcite; S. Dattagupta and M. Blume, Phys. Rev. B 10, 4551-4559 (1974).

1 Stochastic theory of line shape, I. Nonsecular effects in the strong collision model; S. Dattagupta and M. Blume, Phys. Rev. B 10, 4540-4550 (1974).

Contributions:

Invited talks in International Conferences

- Relaxation Phenomena, at the International Conference on Mössbauer Spectroscopy, Jaipur, India (1981).
- Relaxation in Mössbauer Spectra, at the Royal Society Discussion Group, Oxford University, U.K. (1984).
- Role of Friction in Tunneling Motion, at the VIIth International Conference on Hyperfine Interaction, Bangalore, India (1986).
- Time Windows of Various Nuclear Methods for the Observation of Spin Dynamical

Processes, at the International Conference on Nuclear Methods in Magnetism, Munich, Germany (1988).

- Biased Two-level Systems, at the Adriatico Conference on Quantum Fluctuations in Mesoscopic and Macroscopic Systems, at Trieste, Italy (1990).
- Dynamics of an Impurity Spin Coupled to a Dissipative Bath, in a meeting on Rate Processes in Dissipative Systems – Fifty Years after Kramers, held in Tutzing, Germany (1990).
- Kinetics of Ordering, at STATPHYS 18, Berlin, Germany (1992).
- Orientational Order and Viscoelasticity in Supercooled Liquids, at a meeting on Relaxation in Complex Systems, Alicante, Spain (1993).
- Relaxation in a Model Quantum Glass, in Satellite to STATPHYS 20: on Applications of Field Theory to Statistical Physics, Bonn, Germany (1998).
- SRPAC Study of Glass Transition, in the Indo-US meeting on Synchrotron-Radiation-based Physics, Argonne National Laboratory, Argonne, Illinois, May (2003).

In addition to the international conferences listed above Dattagupta has given invited talks in several places, including Argonne National Lab, Brookhaven National Lab, Carnegie-Mellon University, Cavendish Lab of Cambridge University, Forschungs Zentrum Jülich, Free University of Berlin, International Centre for Theoretical Physics at Trieste, Institute Jozeph Stefan in Ljubljana, Institute Laue-Langevin in Grenobole, Jagellonian University, Krakow, Max Planck Institute of Stuttgart, Michigan State University, Northwestern University of Illinois, Pennsylvania State University, Pierre Curie University at Paris, Technical University of Chemnitz, Technical University of Munich, Theoretical Physics Institute of Beijing, Changshu Institute of Technology, University of California, Los Angeles, University of California at Riverside, Chicago University University of Düsseldorf, University of Essen, University of Freiburg, University of Munich, Universtity of Oxford, University of Paris at Gif Sur Yvette, Warsaw University, Warsaw, University of Sao Paulo and Brazilian Academy of Sciences, Rio-de-Janeiro.

Other Professional Services

- Foreign Secretary (1998 – 2000) and Vice President (2001) of the Indian National Science Academy, New Delhi.
- Council Member, Indian National Science Academy, New Delhi (1998 – 2001).
- Convener, Sectional Committee on Physical Sciences of the Indian Academy of Sciences, Bangalore (1999-2003).
- Council Member and Vice President, Indian Academy of Sciences (2004- 2009).
- Member, Scrutinee Committee for Fellowship in Physical Sciences, National Academy of Sciences, Allahabad (1999 -)
- Council Member, National Academy of Sciences, Allahabad (2001- 2007).
- Member, Commission C 10: Structure and Dynamics of Condensed Matter, International Union of Pure and Applied Physics (2000 – 2005).
- Member, Membership Committee in the field of Physics & Astronomy for the Third World Academy of Sciences (TWAS) (2004-2006).
- Convener, Membership Committee in Physics, Academy of Sciences for the Developing World (TWAS), (2005-2007).
- Chairman, National Committee of the Indian National Science Academy for International

Council of Science (ICSU) (2005 - 2007).

- Chairman, CSIR Committee for SRF, RA's, etc. (2003 -)
- Member, CSIR Emeritus Scientists Committee (2002-2004).
- Member, Research Council of the National Physical Laboratory (2001-2006).
- Member, Reserach Council of CSIR, RAB (2007-2009).
- Vice Chair, STATPHYS 22, International Conference on Statistical Physics, Bangalore - (July 2004).
- Convener, Experts' Committee, Indian Institute for Science Education and Research (2005-2006).
- Member, Council, West Bengal University of Technology (2004 - 2005).
- Member, Executive Council, Burdwan University (2005 -).
- Member, Executive Council, Kalyani University (2009-2012).
- Chairman, Board of Governors, National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata (2007 - 2011).
- Referee for Physical Review Letters, Physical Review A, B and E, Europhys. Letters, Solid State Communications and J. Physics C (Condensed Matter Physics).
- Member, Executive Council, Bengal Engineering Sibpur University (2009-2012).
- Member, Board of Governors, Indian Institute of Science Education & Research, Pune (2006-2011).
- Member, Court, Central University of Manipur, Imphal (2010-2013).
- Member, Executive Council, Central University of Arunachal Pradesh (2010-2013).

Books written:

- Books Published

- Relaxation phenomena in condensed matter physics, Academic Press, Orlando, USA (1987).
- Dissipative Phenomena in Condensed Matter (with S. Puri) ,Springer-Verlag, Heidelberg. (2004).
- Lecture Notes on A Paradigm Called Magnetism, World Scientific Press, Singapore (2008).
- Diffusion – Formalism & Applications, Taylor & Francis, London (2012 – to be published).

Books Edited

- Stochastic Processes - Formalism and Applications (with G.S. Agarwal), Springer-Verlag, Berlin (1983).
- Dynamical Aspects of Fluid Phases (with S. Puri and V.K. Wadhawan), Phase Transitions, Gordon and Breach, U.K. (1994).
- Dynamics of Complex Systems (with D. Dhar and S. Puri), Physica A, North-Holland, Amsterdam (1996).
- Nonlinearities in Complex Systems (with S. Puri), Narosa, New Delhi (1997).

- Statistical Physics, Procedings of the 22nd IUPAP International Conference, Indian Academy of Science (Editors: S. Dattagupta, H.R. Krishnamurthy, R. Pandit, T.V. Ramakrishnan and D. Sen).

Conference Proceedings:

- Quantum glasses (with V. Banerjee) in Proceedings of "Nonlinearities in Complex Systems", IIAS, Shimla (1996) - ed. S. Puri and S. Dattagupta, Narosa, New Delhi (1997).

- Defect-induced structural phase transitions (with S.K. Ghoshal), Bull Mat. Sc. 20, 481 - 489 (1997).

- The effect of disorder on the relaxational properties of a quantum spin glass (with V. Banerjee), Physica A, 224, 226 - 231 (1996).

- Kinetics of structural phase transitions (with S.K. Ghoshal) in Advances in Physical Metallurgy, (1996), Eds. S. Banerjee and R.V. Ramanujan, Gordon & Breach, 162 - 169.

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