Curriculum Vitae and Complete Publication List

Professor Biman Bagchi

Solid State and Structural Chemistry Unit
Indian Institute of Science
Bangalore-560012 India

Curriculum Vitae of Prof. Biman Bagchi

Name: Biman Bagchi

Designation: Amrut Mody Professor

Department: Solid State and Structural Chemistry Unit

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Date of birth: January 1, 1954

Education:

- **B.Sc**, 1974, Presidency College, Calcutta University, Chemistry (Hons, First Class).
- **M.Sc**, 1976, Calcutta University, Physical Chemistry (First Class).
- **Ph.D**, 1981, Brown University, Providence, R.I., U.S.A. (Adviser: Prof. Julian H. Gibbs).

Post-doctoral research experience:

- Research Associate (1981-1983) at the James Franck Institute, University of Chicago, U.S.A. (With Prof. David W. Oxtoby).
- Research Associate (1983-1984) at the Institute for Physical Science and Technology, University of Maryland, U.S.A (with Prof. R.W. Zwanzig).

Work Experience:

- Lecturer at Solid State and Structural Chemistry Unit (SSCU), Indian Institute of Science (August, 1984 - March, 1987).
- Assistant Professor (March 1987 - June 1991).
- Associate Professor (June 1991 - December 1995).

- Professor (1995 -). And Chairman (2000 - 2004).
- Amrut Mody Chair (2004 -)

Scientific Visits (after returning to India):

- Visiting Scientist at the University of Maryland (summer, 1986). (Dr. R. Zwanzig)
- Visiting Scientist at the University of Chicago (Summer, 1987 and 1989).
- Visitor at University of Umea, UMEA, Sweden (summer, 1988).
- Visiting Scientist at N.I.H., Bethesda, U.S.A. (1991 -1992). (With R. Zwanzig).
- Visiting Professor at the Univ. Piere et Marie Curie, Paris 5, France (June, 1992).
- Visiting Scientist, IMS, Okazaki, Japan (June - July, 1994). (Host: Prof. K. Yoshihara and Prof. Iwao Ohmine).
- Visiting Professor, University of Wisconsin, Madison, Wisconsin, U.S.A. (1998-1999). (Prof. J.L. Skinner).
- Visiting Professor, University of Texas at Austin, U.S.A. (summer, 1999). (P.F. Barbara and Peter Rossky).
- Invited Professor, Pierre et Marie Curie, Paris 5, France (September, 2001). (Professor Pierre Turq).
- Distinguished Visitor at LMS, Chemistry, California Institute of Technology (Pasadena, USA) (April-May, 2002).
- Invited Professor at Ecole Normal Superior, Paris, France (June, 2002).
- Invited Professor at Nagoya University, Japan (Apr-May, 2004).

Awards & Distinctions:

- National Merit Certificate (1971)
- First Degree State Scholarship (1971 - 1974).
- Young Associate of the Indian Academy of Science (1985 -1989).
- Young Scientist Medal of the Indian National Science Academy (1986).
- Homi Bhabha Fellow (1989 - 1991).
- A.K. Bose Memorial Award (1990) from Indian National Science Academy for best research paper in physical sciences (published on work done in India).
- **S.S. Bhatnagar Prize in Chemical Sciences (1991).**
- **Elected Fellow of the Indian Academy of Sciences (1991).**
- **Elected Fellow of the Indian National Science Academy, New Delhi, (1994).**
- **Elected Fellow of the National Academy of Sciences, Allahabad, (1995).**
- Jagdish Shankar Memorial Lecture award from Indian National Science Academy (1997).
- **Seventh G.D. Birla Award for Science and Technology, 1997.**
- Platinum Jubilee Lecture of Indian Science Congress, January 1997.
- **Third World Academy of Sciences (TWAS) in Chemistry, 1998.**
- BC Laha Memorial Lecture of the Indian Assoc. Cultivation of Science (Calcutta, December, 2001).
- Alumni Excellence Award in Research, IISc. (2002).
- Silver Medal of Chem. Res. Soc. of India (2002).
- Goyal prize in Chemistry (2003).
- Amrut Mody Chair Professorship (2004-2007).
- Fellowship of the Third World Academy of Sciences, Trieste, Italy (2004).

- J. C. Bose National Fellowship (2006)

Editorial Board:

- Editorial Advisory Board, **J. Phys. Chem. (ACS)** (2001-).
- Editorial Advisory Board, **Chemical Physics Letters**. (2002 - 2004).
- Editorial Board, **Journal of Molecular Liquids** (1993 -) (An Elsevier publication)
- Editorial Advisory Board, **PhysChemComm** (RSC) (2000-)
- International Advisory Board, Adv. Chem. Phys. (Wiley) (2000-)
- Editorial Advisory Board, **Theoretical Chemistry Accts.** (2002 -).
- Editorial Board, Indian Journal of Chemistry (1995 -2001).
- Editorial Board, Proceedings of Indian Academy of Sciences (1989-1993).

Other Activity:

- Honorary Professor of the Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore.
- Honorary Professor of S.N. Bose National Center of Basic Sciences, Calcutta.
- Honorary Professor of National Institute of Advanced studies, Bangalore.
- **Member of the Research Council, National Chemical Laboratory (NCL),** Pune (2001-2004).

Named Lectures:

- A.K. Bose Memorial Lecture (1990) at Indian National Science Academy, New Delhi.
- Jagdish Shankar Memorial Lecture at Indian National Science Academy, New Delhi (1997).
- Platinum Jubilee Lecture of Indian Science Congress, Hyderabad, January 1997.
- B.C. Laha Memorial Lecture of the Indian Assoc. Cultivation of Science (Calcutta, December, 2001).
- Raman-Mizushima Lecture of JSPS & DST (2006).

Major Scientific fields of interest:

- Time dependent statistical mechanics, stochastic processes.
- Dynamics of chemical and biological Reactions.
- Phase transitions, dynamics in glassy liquids.
- Liquid crystals.
- Biological water.
- Protein Folding, biopolymers, DNA intercalation.
- Polar solvation dynamics, electron transfer reactions.
- Vibrational and rotational relaxation in liquids.
- Electrochemistry, transport properties, classical laws, polyelectrolyte.
- Conjugated polymers, polymer reactions, Forster energy transfer.

Publications:

- In reputed journals**: 288**
- Presentations in Conferences/Meetings/Seminars: **85**
- Major reviews: **14** (Adv. Chem. Phys.: 4, JPC (Feature): 4, Chem. Rev.: 2, Int. Rev. Phys. Chem.: 2, Annu. Rep. Prog. Chem., Sect. C.: 1, Ann. Rev. Phys. Chem.: 1)**.**
- Edited: Special Issue of JPC: 1, Special Issues of J. Mol. Liq.: 2, A book entited "Ultrafast Processes in Chemistry" (World Scientific, 1991).
- Appeared in the list of top 1% most cited chemists of the world.

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Publication List of Professor Biman Bagchi

Total number of papers: 288 (in journals only)
Average citation per year: About 400

1. *Decoupling phenomena in supercooled liquids: Signatures in the energy landscape,* D. Chakrabarti and **B. Bagchi**, *Phys. Rev. Lett.* **96**, 187801 (2006).

2. *Energy landscape view of phase transitions and slow dynamics in thermotropic liquid crystals,* D. Chakrabarti and **B. Bagchi**, *Proc. Natl. Acad. Sci. USA* **103**, 7217 (2006).

3. *Power law relaxation and glassy dynamics in Lebwohl-Lasher model near the isotropic-nematic phase transition,* S. Chakrabarty, D. Chakrabarti and **B. Bagchi**, *Phys. Rev. E* **73**, 061706 (2006).

4. *Ion dynamics in compacted clays: Derivation of a two-state diffusion-reaction scheme from the lattice Fokker-Planck equation,* B. Rotenberg, J.-F. Dufreche, **B. Bagchi**, E. Giffaut, J.-P. Hansen and P. Turq, *J. Chem. Phys.* **124**, 154701 (2006).

5. *Anomalous orientation dependent effective pair interaction among histidine and other amino acid residues in metalloproteins: Breakdown of the hydropathy scale index,* A. Mukherjee and **B. Bagchi**, *Biochemistry* **45**, 5129 (2006).

6. *Complete breakdown of the Debye model of rotational relaxation near the isotropic-nematic phase boundary: Effect of intermolecular correlations in orientational dynamics,* P. P. Jose, D. Chakrabarti and **B. Bagchi**, *Phys. Rev. E* **73**, 031705 (2006).

7. *Solvation dynamics in biological systems and organized assemblies,* P. Sen, S. Pal, K. Bhattacharyya and **B. Bagchi**, *J. Chin. Chem. Soc. (Taipei)* **53**, 169 (2006).

8. *Förster energy transfer in thin films of conjugated polymers and in solution,* A. Mukherjee and **B. Bagchi**, *J. Chin. Chem. Soc. (Taipei)* **53**, 153 (2006).

9. *Fluorescence resonance energy transfer (FRET) in chemistry and biology: Non-Förster distance dependence of the FRET rate,* S. Saini, H. Singh and **B. Bagchi**, J. Chem. Sci. **118**, 23 (2006).

10. *Anisotropic and sub-diffusive water motion at the surface of a DNA and of an anionic micelle CsPFO,* S. Pal, P. K. Maiti and **B. Bagchi**, *J. Phys. Cond. Matt.* **17**, S4317 (2005).

11. *Universal power law in the orientational relaxation in thermotropic liquid crystals,* D. Chakrabarti, P. P. Jose, S. Chakrabarty and **B. Bagchi**, *Phys. Rev. Lett.* **95**, 197801 (2005).

12. *Secondary structure sensitivity of Hydrogen bond lifetime dynamics in the protein hydration layer,* S. Bandyopadhyay, S. Chakraborty and **B. Bagchi**, *J. Am. Chem. Soc.* **127**, 16660 (2005).

13. *Non-Förster Distance and Orientation Dependence of Energy Transfer and Applications of Fluorescence Resonance Energy Transfer to Polymers and Nanoparticles: How Accurate is the Spectroscopic Ruler with $1/R^6$ Rule?* H. Singh and **B. Bagchi**, *Curr. Sci.* **89**, 1710 (2005).

14. *Water Dynamics in the Hydration Layer around Proteins and Micelles*, **B. Bagchi**, *Chem. Rev. (Review)* **105**, 3197 (2005).

15. *Bridging the gap between the mode coupling and the random first order transition theories of structural relaxation in liquids,* S. M. Bhattacharyya, **B. Bagchi**, and P. G. Wolynes, *Phys. Rev. E* **72**, 031509 (2005).

16. *Water dynamics at the surface of proteins and micelles: Understanding the fast and the slow components*, S. Pal, S. Chakraborty, S. M. Bhattacharyya, S. Bandyopadhyay, S. Balasubramanaian and **B. Bagchi**, Proceedings of IXth International Symposium On the Properties Of Water, CRC Press, 2005.

17. *Rotational friction on globular proteins combining dielectric and hydrodynamic effects,* A. Mukherjee and **B. Bagchi**, *Chem. Phys. Lett.* **404**, 409 (2005).

18. *Orientation-dependent potential of mean force for protein folding,* A. Mukherjee, P. Bhimalapuram and **B. Bagchi**, *J. Chem. Phys.* **123**, 014901 (2005).

19. *Hydration Layer of a Cationic Micelle, C_{10}TAB: Structure, Rigidity, Slow Reorientation, Hydrogen Bond Lifetime, and Solvation Dynamics,* S. Pal, **B. Bagchi** and S. Balasubramanian, *J. Phys. Chem. B,* **109**, 12879 (2005).

20. *Non-monotonic composition dependence of vibrational phase relaxation rate in binary mixtures,* S. Roychowdhury and **B. Bagchi,** *J. Chem. Phys.* **122**, 144507 (2005).

21. *Anomalous glassy relaxation near the isotropic-nematic phase transition,* P. P. Jose, D. Chakrabarti and **B. Bagchi**, *Phys. Rev. E,* **71**, 030701(R) (2005).

22. *Sensitivity of polar solvation dynamics to the secondary structures of aqueous proteins and the role of surface exposure of the probe,* S. Bandyopadhyay, S. Chakraborty, S. Balasubramanian and **B. Bagchi**, *J. Am. Chem. Soc.* **127**, 4071 (2005).

23. *Frequency dependent heat capacity within a kinetic model of glassy dynamics*, D. Chakrabarti and **B. Bagchi**, *J. Chem. Phys.* **122**, 14501 (2005).

24. *Atomistic simulation study of the coupled motion of amino acid residues and water molecules around protein HP-36: Fluctuations at and around the active*

sites, S. Bandyopadhyay, S. Chakraborty, S. Balasubramanian, S. Pal, and **B. Bagchi,** *J. Phys. Chem. B.* **108,** 12608 (2004).

25. *Self-consistent mode-coupling theory for the viscosity of rodlike polyelectrolyte solutions,* K. Miyazaki, **B. Bagchi**, and A. Yethiraj, *J. Chem. Phys.* **121**, 8120 (2004).

26. *Anomalous viscoelasticity near the isotropic-nematic phase transition in liquid crystals,* P. P. Jose and **B. Bagchi**, *J. Chem. Phys.* **121**, 6978 (2004).

27. *Distance and orientation dependence of excitation transfer rates in conjugated systems: Beyond the Forster theory***,** K. F. Wong, **B. Bagchi**, and P. J. Rossky, *J. Phys. Chem. A,* **108**, 5752 (2004).

28. *Nonmonotonic temperature dependence of heat capacity through the glass transition within a kinetic model*, D. Chakrabarti and **B. Bagchi,** *J. Chem. Phys.* **120,** 11678 (2004).

29. *In search of temporal power laws in the orientational relaxation near isotropic-nematic phase transition in model nematogens***,** P. P. Jose and **B. Bagchi,** *J. Chem. Phys.* **120**, 11256 (2004).

30. *Density and energy relaxation in open one-dimensional system***,** Prasanth P. Jose and **B. Bagchi,** *J. Chem. Phys.* **120**, 8327 (2004)**.**

31. *Dynamics of water at surface of complex systems: Study of aqueous micelles and proteins***,** S. Pal**,** S. Bandyopadhyay, S. Balasubramanian, and **B. Bagchi,** *Femtochemistry and Femtobiology (Proceedings of the VIth International Conference on Femtochemistry (2003))* , 213 (2004).

32. *Anomalous dielectric relaxation of water molecules at the surface of an aquoues micelle*, S. Pal, S. Balasubramanian, and **B. Bagchi**, *J. Chem. Phys*. **120,** 1912 (2004).

33. *Contact pair dynamics during folding of two small proteins: chicken villin head piece and the Alzheimer protein β-amyloid***,** A. Mukherjee and **B. Bagchi,** *J. Chem. Phys.* **120,** 1602 (2004).

34. *Dynamics of water at the interface of a small protein, enterotoxin***,** S. Balasubramanian, S. Bandyopadhyay, S. Pal, and **B. Bagchi,** *Curr. Sci.* **85,** 1571 (2003**).**

35. *Probing folding free energy landscape of small proteins through minimalistic models: Folding of HP-36 and β-Amyloid***,** A. Mukherjee and **B. Bagchi,** *Proc. Indian Acad. Sci. (Chem. Sci.)* **115,** 621 (2003).

36. *Identity, energy, environment, and dynamics of interfacial water molecules in a micellar solution***,** S. Balasubramanian, S. Pal, and **B. Bagchi**, *J. Indian Inst. Sci.* **83,** 27 (2003, Jan.-Apr.).

37. *Water solvation dynamics in the bulk and in the hydration layer of proteins and self-assemblies*, **B. Bagchi**, *Annu. Rep. Prog. Chem., Sect. C.* **99**, 127 (2003).

38. *Identity, energy, and environment of interfacial water molecules in a micellar solution,* S. Pal, S. Balasubramanian, and **B. Bagchi**, *J. Phys. Chem. B* **107**, 5194 (2003).

39. *Dynamics of bound and free water in an aqueous micellar solution: Analysis of the lifetime and vibrational frequencies of hydrogen bonds at a complex interface,* S. Pal, S. Balasubramanian, and **B. Bagchi**, *Phys. Rev. E* **67**, 61502 (2003).

40. *Study of pair contact formation among hydrophobic residues in a model HP-36 protein: Relationship between contact order parameter and rate of folding and collapse,* G. Srinivas and **B. Bagchi**, *J. Phys. Chem. A*, **107**, 11768 (2003).

41. *Simulation and theory of vibrational phase relaxation in the critical and supercritical nitrogen: Origin of observed anomalies,* S. Roychowdhury and **B. Bagchi**, *J. Chem. Phys.* **119**, 3278 (2003).

42. *Fluorescence resonance energy transfer dynamics during protein folding: Evidence of multistage folding kinetics,* A. Mukherjee and **B. Bagchi,** *Curr. Sci.* **85**, 68 (2003)**.**

43. *Pair dynamics in a glass-forming binary mixture: Simulations and theory*, R. K. Murarka and **B. Bagchi**, *Phys. Rev. E* **67**, 41501 (2003).

44. *Diffusion and viscosity in a supercooled polydisperse system,* R. K. Murarka and **B. Bagchi**, *Phys. Rev. E* **67**, 51504 (2003).

45. *Waiting time distribution and nonexponential relaxation in single molecule spectroscopic studies: Realization of entropic bottleneck in a simple mode***l**, D. Chakrabarti and **B. Bagchi**, *J. Chem. Phys.* **118**, 7965 (2003).

46. *Origin of the sub-diffusive behavior and crossover from sub-diffusive to super-diffusive dynamics near a biological surface,* A. Mukherjee and **B. Bagchi**, *PhysChemComm.* **6**, 28 (2003).

47. *Correlation between rate of folding, energy landscape and topology in the folding of a model protein HP-36*, A. Mukherjee and **B. Bagchi,** *J. Chem. Phys.* **118**, 4733 (2003).

48. *Vibrational phase relaxation along the critical isochore of nitrogen: The role of local density fluctuations in the rate enhancement***,** S. Roychowdhury and **B. Bagchi,** *Phys. Rev. Lett.* **90**, 75701 (2003).

49. *Evidence for bound and free water species in the hydration shell of an aqueous micelle,* S. Balasubramanian, S. Pal, and **B. Bagchi**, *Curr. Sci*. **84,** 428 (2003).

50. *Study of the dynamics of protein folding through minimalistic models*, G. Srinivas and **B. Bagchi**, *Theo. Chem. Acc.* **109**, 8 (2003).

51. *Dynamics of water in the hydration layer of a self-assembled system and in bio-molecules*, **B. Bagchi**, *Proc. Ind. Natl. Sci. Acad. (Phys. Sci.)* **69A**, 15 (2003).

52. *Biological water: Femtosecond dynamics of Macromolecular hydration***,** S. K. Pal, J. Peon, **B. Bagchi,** and A.H. Zewail, *J. Phys. Chem. B* **106**, 12376 (2002).

53. *Diffusion of small light particles in a solvent of large massive molecules*, R. K. Murarka, S. Bhattacharyya, and **B. Bagchi**, *J. Chem. Phys.* **117,** 10730 (2002).

54. *Anisotropic local stress and particle hopping in a deeply supercooled liquid*, S. Bhattacharyya and **B. Bagchi,** *Phys. Rev. Lett.* **89**, 25504 (2002).

55. *Hydrogen-bond dynamics near a micellar surface: Origin of the universal slow relaxation at complex aqueous interfaces*, S. Balasubramanian, S. Pal and **B. Bagchi**, *Phys. Rev. Lett*. **89**, 115505 (2002).

56. *Ionic Self-Diffusion in Concentrated Aqueous Electrolyte Solutions*, J. F. Dufreche, O. Bernard, P. Turq, A. Mukherjee, and **B. Bagchi**, *Phys. Rev. Lett*. **88,** 95902 (2002).

57. *Temperature dependence of water dynamics at an aqueous micellar surface: Atomistic molecular dynamics simulation studies of a complex system***,** S. Pal, S. Balasubramanian, and **B. Bagchi**, *J. Chem. Phys*. **117,** 2852 (2002).

58. *Local composition fluctuations in strongly Nonideal binary mixtures*, R. K. Murarka and **B. Bagchi**, *J. Chem. Phys*. **117**, 1155 (2002).

59. *Foldability and the funnel of HP-36 protein sequence: Use of hydropathy scale in protein folding*, G. Srinivas and **B. Bagchi**, *J. Chem. Phys*. **116**, 8579 (2002).

60. *Time-dependent survival probability in diffusion-controlled reactions in a polymer chain: Beyond the Wilemski-Fixman theory*, G. Srinivas, K. L. Sebastian, and **B. Bagchi**, *J. Chem. Phys*. **116**, 7276 (2002).

61. *Comparison of the ultrafast to slow time scale dynamics of three liquid crystals in the isotropic phase***,** S. D. Gottke, H. Cang, **B. Bagchi**, and M. D. Fayer, *J. Chem. Phys*. **116**, 6339 (2002).

62. *Liquid crystal dynamics in the isotropic phase***,** S. D. Gottke, D. D. Brace, H. Cang, **B. Bagchi**, and M. D. Fayer, *J. Chem. Phys*. **116**, 360 (2002).

63. *Dynamics of water molecules at the surface of an aqueous micelle: Atomistic molecular dynamics simulation study of a complex system*, S. Balasubramanian, S. Pal, and **B. Bagchi**, *Curr. Sci*. **82,** 845 (2002).

64. *Pressure and temperature dependence of viscosity and diffusion coefficients of a glassy binary mixture*, S. Bhattacharyya, A. Mukherjee, and **B. Bagchi**, *J. Chem. Phys*., **116,** 4577 (2002).

65. *Intermittency, current flows, and short time diffusion in interacting finite sized one-dimensional fluids*, S. Pal, G. Srinivas, S. Bhattacharyya, and **B. Bagchi**, *J. Chem. Phys*. **116**, 5941 (2002).

66. *Formation of nanoclusters under radiation pressure in solution: A Brownian dynamics simulation study*, P. P. Jose and **B. Bagchi**, *J. Chem. Phys*. **116**, 2556 (2002).

67. *Correlated orientaional and translational motions in supercooled liquids*, S. Bhattacharyya, A. Mukherjee, and **Biman Bagchi**, *J. Chem. Phys*. **117**, 2741 (2002).

68. *Anisotropic diffusion of spheroids in liquids: Slow orientational relaxation of the oblates*, R. Vasanthi, S. Bhattacharyya, and **B. Bagchi**, *J. Chem. Phys*. **116**, 1092 (2002).

69. Detection of collapsed and ordered polymer structures by fluorescence resonance energy transfer in stiff homopolymers: Bimodality in the reaction efficiency distribution, G. Srinivas and **B. Bagchi**, *J. Chem. Phys*., **116**, 837 (2002).

70. *Folding and unfolding of chicken villin headpiece: Energy landscape of a single-domain model protein*, G. Srinivas and **B. Bagchi**, *Curr. Sci*., **82** 179 (2002).

71. *Slow orientational dynamics of water at a micellar surface*, S. Balasubramanian and **B. Bagchi**, *J. Phys. Chem. B* **106**, 3668 (2002).

72. *Energy transfer efficiency distributions in polymers in solution during folding and unfolding*, G. Srinivas and **B. Bagchi**, *PhysChemComm* **8**, 59 (2002).

73. *Relaxation in binary mixtures: Non-Ideality, heterogeneity and re-entrance*, A. Mukherjee, G. Srinivas, S. Bhattacharyya, and **B. Bagchi**, *Proc. Ind. Acad. Sci. (Chem. Sci.)* **113**, 393, (2001).

74. *Anisotropic diffusion of tagged spheres near the isotropic- nematic phase transition*, R. Vasanthi, S. Ravichandran, and **B. Bagchi**, *J. Chem. Phys.* **115**, 10022 (2001).

75. *Anomalous orientational relaxation of solute probes in binary mixtures*, S. Bhattacharyya and **B. Bagchi**, *J. Chem. Phys.* **115**, 9061 (2001).

76. *Chemical reaction dynamics and relaxation phenomena in one component liquids, binary mixtures and electrolyte solutions***, B. Bagchi**, *Curr. Sci.* **81**, 1054 (2001).

77. *Nonideality in binary mixtures: Correlations between excess volume, excess viscosity, and diffusion coefficients*, A. Mukherjee and **B. Bagchi**, *J. Phys. Chem. B* **105**, 9581 (2001).

78. *Effects of vibrational energy relaxation and reverse reaction on electron transfer kinetics and fluorescence line shapes in solution*, R. A. Denny, **B. Bagchi**, and P. F. Barbara, *J. Chem. Phys*. **115**, 6058 (2001).

79. *Effect of orientational motion of mobile chromophores on the dynamics of Forster energy transfer in polymers*, G. Srinivas and **B. Bagchi**, *J. Phys. Chem. B* **105**, 9370 (2001).

80. *Slow solvation dynamics near an aqueous micellar surface*, S. Balasubramanian and **B. Bagchi**, *J. Phys. Chem. B* **105,** 12529 (2001).

81. *Heterogeneous relaxation in supercooled liquids: A density functional theory analysis*, R. K. Murarka and **B. Bagchi**, *J. Chem. Phys.* **115,** 5513 (2001).

82. *The Enskog theory for classical vibrational energy relaxation in fluids with continuous potentials*, **B. Bagchi**, G. Srinivas, and K. Miyazaki, *J. Chem. Phys.* **115,** 4195 (2001).

83. *The extended Enskog operator for simple fluids with continuous potentials: single particle and collective properties*, K. Miyazaki, I. M.de Schepper, and B. Bagchi, *Physica A*, **298**, 101 (2001).

84. *Relation between orientational correlation time and the self-diffusion coefficient of tagged probes in viscous liquids: A density functional theory analysis*, **B. Bagchi**, *J. Chem. Phys*. **115**, 2207 (2001).

85. *Structural and electronic characterization of chemical and conformational defects in conjugated polymers***,** K. F. Wong, M. S. Skaf, C. -Y. Yang, P. J. Rossky, **B. Bagchi**, D. Hu, J. Yu, and P.F. Barbara, *J. Phys. Chem. B* **105,** 6103 (2001).

86. *Reentrant behavior of relaxation time with viscosity at varying composition in binary mixtures*, A. Mukherjee, G. Srinivas, and **B. Bagchi**, *Phys. Rev. Lett.* **86,** 5926 (2001).

87. *Nonexponentiality of time dependent survival probability and the fractional viscosity dependence of the rate in diffusion controlled reactions in a polymer chain*, G. Srinivas, A. Yethiraj, and **B. Bagchi,** *J. Chem. Phys.* **114,** 9170 (2001).

88. *Needlelike motion of prolate ellipsoids in the sea of spheres*, R. Vasanthi, S. Ravichandran, and **B. Bagchi**, *J. Chem. Phys*. **114**,7989 (2001).

89. *FRET by FET and dynamics of polymer folding*, G. Srinivas, A. Yethiraj, and **B. Bagchi**, *J. Phys. Chem. B* **105,** 2475 (2001).

90. *The Enskog theory for transport coefficients of simple fluids with continuous potentials*, K. Miyazaki, G. Srinivas, and **B. Bagchi**, *J. Chem. Phys.* **114**, 6276 (2001).

91. *Nonideality in the composition dependence of viscosity in binary mixtures,* G. Srinivas, A. Mukherjee, and **B. Bagchi**, *J. Chem. Phys.* **114,** 6220 (2001).

92. *Mode coupling theory approach to liquid-state dynamics,* **B. Bagchi** and S. Bhattacharyya, *Adv. Chem. Phys.* **116,** 67 (2001).

93. *Slow dynamics of constrained water in complex geometries,* K. Bhattacharyya and **B. Bagchi**, *J. Phys. Chem. A* **104,** 10603 (2000).

94. *Beyond the classical transport laws of electrochemistry: New microscopic approach to ionic conductance and viscosity,* A. Chandra and **B. Bagchi**, *J. Phys. Chem*. B **104,** 9067 (2000).

95. *Distribution of reaction times in diffusion controlled reactions in polymers,* G. Srinivas and **B. Bagchi**, *Chem. Phys. Lett*. **328,** 420 (2000).

96. *Ionic contribution to the viscosity of dilute electrolyte solutions: Towards a microscopic theory,* A. Chandra and **B. Bagchi**, *J. Chem*. *Phys.* **113,** 3236 (2000).

97. *Dielectric relaxation and solvation dynamics of water in complex chemical and biological systems,* N. Nandi, K. Bhattacharyya, and **B. Bagchi**, *Chem. Rev.* **100,** 2013 (2000).

98. *Power law mass dependence of diffusion: A mode coupling theory analysis,* S. Bhattacharya and **B. Bagchi**, *Phys. Rev*. E **61,** 3850 (2000).

99. *Collapse of stiff conjugated polymers with chemical defects into ordered, cylindrical conformations*, De Hong, Ji Hu, **B. Bagchi**, P. Rossky and P. Barbara, *Nature* **405,** 1030 (2000).

100. *Cage dynamics in the third-order off-resonant response of liquid molecules: A theoretical realization,* K. Okumura, **B. Bagchi,** and Y. Tanimura, *Bull. Chem. Soc. Jpn.* **73,** 873 (2000).

101. *Understanding the anomalous $1/t^3$ time dependence of velocity correlation function in one dimensional Lennard-Jones systems,* G. Srinivas and **B. Bagchi**, *J. Chem. Phys.* **112,** 7557 (2000).

102. *Computer simulation and mode-coupling theory analysis of time-dependent diffusion in two dimensional Lennard-Jones fluids,* S. Bhattacharyya, G. Srinivas and **B. Bagchi**, *Phys. Lett. A*, **266,** 394 (2000).

103. *Frequency dependence of ionic conductivity of electrolyte solutions,* A. Chandra and **B. Bagchi**, *J. Chem. Phys.* **112,** 1876 (2000).

104. *Computer simulation study of the density and temperature dependence of fundamental and overtone vibrational dephasing in nitrogen: Interplay between different mechanisms of dephasing,* N. Gayathri and **B. Bagchi**, *J. Phys. Chem. A* **103**, 9579 (1999).

105. *Barrierless isomerization dynamics in viscous liquids: Decoupling of the reaction rate from the slow frictional forces*, R.A. Denny and **B. Bagchi**, *J. Phys. Chem. A* **103,** 9061 (1999).

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