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Personal Information

Name: Snehasis Daschakraborty
Date of Birth: September 22, 1985
Sex: Male
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Experience

Associate Professor (June 2023- **)**, Department of Chemistry, Indian Institute of Technology Patna
Assistant Professor: (December 2016-June 2023) Department of Chemistry, Indian Institute of Technology Patna
Postdoctoral Research: (October 2013-December 2016) Department of Chemistry and Biochemistry, University of Colorado at Boulder, Boulder, Colorado, U.S.A. (with Prof. James T. Hynes) (2013-2016)
Ph. D. in Chemistry: (2014) S. N. Bose National Center for Basic Sciences, Kolkata (Affiliated to Jadavpur University), India. Supervisor: Prof. Ranjit Biswas

Research Contribution

Broad Area of Research Interest: Molecular dynamics of chemical and biological systems

Key Research Contribution:

- Proposed the translational jump-diffusion model, a novel approach to understand the anomalous diffusion-viscosity decoupling in supercooled water
- Elucidated the mechanism of homeoviscous adaptation of cell membrane of psychrotolerant species.
- Demonstrated the role of osmolytes in the stabilization of cell membrane by different osmolytes.
- Focused on understanding the interaction and permeation of nanoparticles and self-assemblies across the lipid membrane
- Investigated the vehicular diffusion of hydroxide ion transport in an anion exchange membrane
- Studied the film formation of discotic liquid crystals on water-vapor interface.

Projects:

Sl. No.	Project Title	Funding Agency	Budget (Lakh)	Start Date & End Date (MM/YYYY)	Role as PI/Co-PI	Summary of Result & Publication/ Patent
1.	Development and Application of a Novel and Accurate Theoretical Method for the Determination of Viscosity of Water under Nano-Confinement	SERB (MATRICS)	6.60	01/2023-01/2026 **(Completed)**	PI	The objectives are almost completed. The formalism has been developed. 4 papers are published so far: Khan et al. 2023-2025 (DOI: 10.1021/acs.jpcc.3c01689 ; 10.1039/D3CP05906E ; 10.1021/acs.jpcc.4c03253 ; 10.1021/acs.jpcb.5c02233)
2.	Diffusion of Lipid in Laterally Heterogeneous Cell Membrane	CSIR	10.90	01/2022-01/1015 **(Completed)**	PI	All the objectives are already completed. The studies have unraveled the mechanism of diffusion of lipid in a heterogeneous membrane. 7 papers are published Erimban et al.; Kumar et al.; Maiti et al.; Rani et al. (DOI: 10.1021/acs.jpcb.3c00541; 10.1039/D3CP04081J ; 10.1002/asia.202400416 ; 10.1016/j.chphi.2024.100645 ; 10.1021/acs.jpcb.5c02234; 10.1021/acs.jpcb.5c01946 ; 10.1002/asia.202500590 ;
3.	Permanent Dropwise Condensation via Amphiphilic Additives in Vapor Phase	DST (Indo-Korea)	30.33	03/2021-09/2024 **(Completed)**	Co-PI	The objectives are completed. Linalool's role was discovered. 2 papers are published (DOI: 10.1021/acs.langmuir.4c01825 ; 10.1021/acs.langmuir.3c02531)
4.	Investigation on the Ordering and Fluidity of Pitch Precursor using Molecular Dynamics Simulation	TATA Steel Ltd. (Private funding)	16.80	07/2023-02/2025 **(Completed)**	PI	The objectives are already completed. The final deliverable has been submitted. 1 paper is published: 10.1016/j.molliq.2024.125307
5.	Mechanism of Hydroxide Ion Transfer through Anion Exchange Membrane in Anion Exchange Membrane Fuel Cell: Investigation using	SERB (Early Career Research Award)	23.65	07/2018-01/2022 **(Completed)**	PI	The objectives are already completed. The vehicular mechanism has been detailed for the first time. 5 papers are published: 10.1016/j.cplett.2020.137802; 10.1021/acs.jpcb.2c00240 10.1021/acs.jpcb.9b08309 ; 10.1039/D1CP02202D ; 10.1007/s00214-023-02991-0

Awards/recognition:

Sl. No	Name of Award	Awarding Agency	Year
1.	Convener, CRSI Bihar & Jharkhand Chapter	CRSI	2026-2029
2	JSPS Invitational Fellowship (short term)	Japan Soceity for promotion of Science (JSPS) IMS, Japan	2024
3	Chemical Research Society of India (CRSI) Bronze medal	CRSI, India	2024
4	INSA Remote Lectureship	INSA	2023
5	Member in National Academy of Sciences, Allahabad, India	NASI, India	2021
6	Indian National Science Academy Medal for Young Scientists	INSA, India	2020
7	Selected to contribute in PCCP Emerging Investigator issue	RSC	2021
8	SERB Early Career Research Award	SERB	2018
9	CSIR Travel Grant for attending conference EUCHEM 2012, United Kingdom.	CSIR	2012

Publications: **(**corresponding author*)**

Total Papers: 76

Citatation: 1615

Hindex: 23

1. "Functionality Over Order: Decoupling Chemical and Structural Contributions in CO_2/CH_4 Separation by Covalent Organic Frameworks" by Khata, S; Maheedhara, V S; Karak, S; Sadhukhan, A; Nagaraj, V; Nehra, E; Wonanke, A. D. D.; Addicoat, M.; Nishiyama, Y.; Daschakraborty, S.*; Varghese, B.; Sawada, J.; Maiti, P.; Rajendran, A.*; Kaisare, N.*; Banerjee, R.*, J. J. Am. Chem. Soc. 2026 (Accepted)
2. "The Effect of Water Stress on Liquid Ordered and Liquid Disordered Phases of Lipid Membrane: An Atomistic Comparison" by Abhay Kumar and Snehasis Daschakraborty*, PCCP 2026 (Accepted)
3. Indra, S.*; Subramanian, R.; Singh, A. K.; **Daschakraborty, S.*** What Makes a Designer Solvent Efficient for Capturing Volatile Organic Compounds?—A Molecular Perspective. *ChemPhysChem* **2026**, *27*, e202500725.
4. Nagaraj, V.; **Daschakraborty, S.*** Structural Origin of Translational Jumps and Allied Dynamical Anomalies in Supercooled Water. *J. Phys. Chem. B* **2026**, *130*, 2217-2225.

5. Sadhukhan, A.; Ravuru, S. S.; Das, A.; Nehra, E.; Paul, S.; Khan, G. R.; Addicoat, M. A.; Nishiyama, Y.; **Daschakraborty, S.**; Rajendran, A.; Banerjee, R.; Covalent Organic Frameworks via In Situ Monomer Release for Humid CO2 Uptake. *J. Am. Chem. Soc*. **2025**, *147*, 39419-39429.
6. Rani, N.; Maiti, A.; **Daschakraborty, S.*** Do α, α-(1-1)-Linked Disaccharides Enhance Stability of the Lipid Bilayer more than α, β-Linked Disaccharides under Desiccation? *J. Phys. Chem. B.,* **2025**, *129*, 6505-6516.
7. Rani, N.; Nagaraja, V.; **Daschakraborty, S.*** Molecular Insights into Osmolyte-Mediated Adaptation of Lipid Membrane of Extremophiles. *Chem-An Asian Journal,* **2025**, e00590.
8. Kumar, A.; **Daschakraborty, S.*** What Are the Essential Water Molecules in Regulating Lipid Membrane Fluidity? *J. Phys. Chem. B.* **2025**, *129*, 5998-6008.
9. Khan, G. R.; Saito, S.; **Daschakraborty, S.*** Faster Diffusion of Water along Carbon Nanotubes near the Wall. *J. Phys. Chem. B.* **2025,** *129*, 6561-6573.
10. Khan, G. R.; **Daschakraborty, S.*** Jump-corrected confined Stokes–Einstein relation: An approach for simulating the viscosity of water inside a nanochannel. *J. Chem. Sci.* **2025**, *137*, 109.
11. Samal, P. P.; Maiti, A.; Patel, S.; Paul, H.; Chandra, G.; Mishra, P.; **Daschakraborty, S.***; **Nayak, A.***; Quantifying Hydrogen-Bonding Interactions in the Self-Assembly of Photoresponsive Azobenzene Amphiphiles at the Air−Water Interface. *J. Phys. Chem. Lett.* **2024**, *15*, 9193–9200.
12. Maiti, A.; Erimban, S.; **Daschakraborty, S.***, Extreme Makeover: The Incredible Cell Membrane Adaptations of Extremophiles to Harsh Environments. *ChemComm.,* **2024,** *60*, 10280-10294.
13. Azad, R.; Sharma, T.; Martin, D.; **Daschakraborty, S.***; Raj, R.*, Unraveling the Surface Activity of Ethanol-Water Mixtures through Experiments and Molecular Dynamics Simulations. *Langmuir* **2024**, *40*, 17577–17589.
14. Maiti, A.; **Daschakraborty, S.***, Investigating the Influence of Photoswitchable Lipids on the Structure and Dynamics of Lipid Membranes: Fundamentals and Potential Applications. *The Journal of Physical Chemistry B* **2024**, *128*, 7586–7595.
15. Khan, G. R.; **Daschakraborty, S.***, Laterally Heterogeneous Structure and Dynamics of Water and Ion inside a Nanochannel of a Covalent Organic Framework Membrane Designed for Osmotic Energy Conversion. *The Journal of Physical Chemistry C* **2024**, *128*, 17928–17939.
16. Kumar, A.; Maiti, A.; Verma, S.; **Daschakraborty, S.***, How do Photoswitchable Lipids Influence the Intercalation of Anticancer Drug in Lipid Membrane? Investigation using Molecular Dynamics Simulation. *Chemistry–An Asian Journal* **2024**, e202400416.
17. Guleria, K.; Tiwari, S.; Barman, D.; **Daschakraborty, S.***; Subramanian, R.*, Prediction of Radiative Efficiencies and Global Warming Potential of Hydrofluoroethers and Fluorinated Esters Using Various DFT Functionals. *Electron Density: Concepts, Computation and DFT Applications* **2024**, 527-549.
18. Sen, K.; Maiti, A.; Banerjee, C.; Dash, P. S.; **Daschakraborty, S.***, Investigating the structure, dynamics, and phase behaviour of polycyclic aromatic hydrocarbons derived from coal tar pitch:(I) temperature dependence. *Journal of Molecular Liquids* **2024**, 125307.
19. Rani, N.; Maiti, A.; **Daschakraborty, S.***, Comparative study of molecular mechanisms of sucrose & trehalose mediated protection and stabilization of Escherichia coli lipid membrane during desiccation. *Chemical Physics Impact* **2024,** *8*, 100645.
20. Khan, G. R.; **Daschakraborty, S.***, Enhanced fluidity of water in superhydrophobic nanotubes: estimating viscosity using jump-corrected confined Stokes–Einstein approach. *Physical Chemistry Chemical Physics* **2024,** *26* (5), 4492-4504.

21. Sharma, T.; Erimban, S.; Azad, R.; Nam, Y.; Raj, R.*; **Daschakraborty, S.***, Investigating the Vapor-Phase Adsorption of Aroma Molecules on the Water–Vapor Interface using Molecular Dynamics Simulations. *Langmuir* **2023,** *39* (49), 17889-17902.
22. Kumar, A.; **Daschakraborty, S.***, Anomalous lateral diffusion of lipids during the fluid/gel phase transition of a lipid membrane. *Physical Chemistry Chemical Physics* **2023,** *25* (45), 31431-31443.
23. Dueby, S.; Maiti, A.; Dubey, V.; Galamba, N.; **Daschakraborty, S.***, Thermodynamic response functions and Stokes-Einstein breakdown in superheated water under gigapascal pressure. *Theoretical Chemistry Accounts* **2023,** *142* (5), 44.
24. Mandal, S.; Erimban, S.; Banerjee, S.; **Daschakraborty, S.***; Das, P., Elucidating the relationship between red fluorescence and structural dynamics of carbon dots dispersed in different solvents. *Physical Chemistry Chemical Physics* **2023,** *25* (35), 23645-23657.
25. Erimban, S.; **Daschakraborty, S.***, Fickian yet non-Gaussian nanoscopic lipid diffusion in the raft-mimetic membrane. *The Journal of Physical Chemistry B* **2023,** *127* (22), 4939-4951.
26. Khan, G. R.; **Daschakraborty, S.***, What Is the Viscosity of Liquid Water Confined in a Hydrophobic Nanotube? Estimation Using a Novel Approach. *The Journal of Physical Chemistry C* **2023,** *127* (14), 7027-7035.
27. Maiti, A.; **Daschakraborty, S.***, Unraveling the molecular mechanisms of trehalose-mediated protection and stabilization of Escherichia coli lipid membrane during desiccation. *The Journal of Physical Chemistry B* **2023,** *127* (20), 4496-4507.
28. Maiti, A.; Kumar, A.; **Daschakraborty, S.***, How Do Cyclopropane Fatty Acids Protect the Cell Membrane of Escherichia coli in Cold Shock? *The Journal of Physical Chemistry B* **2023,** *127* (7), 1607-1617.
29. Samal, P. P.; Erimban, S.; Patel, S.; Kumar, N.; Paul, H.; Chandra, G.; Mishra, P.; **Daschakraborty, S.***; Nayak, A., Interaction Modes in Pressure-Induced Molecular Nanoarchitectonics of the Alkylated Azobenzene Monolayer: Interfacial Analyses and Molecular Dynamic Simulation. *The Journal of Physical Chemistry C* **2023,** *127* (27), 13256-13265.
30. Dubey, V.; **Daschakraborty, S.***, Translational Jump-Diffusion of Hydroxide Ion in Anion Exchange Membrane: Deciphering the Nature of Vehicular Diffusion. *The Journal of Physical Chemistry B* **2022,** *126* (12), 2430-2440.
31. Dueby, S.; **Daschakraborty, S.***, Size dependence of solute's translational jump-diffusion in solvent: Relationship between trapping and jump-diffusion. *Chemical Physics Letters* **2022,** *806*, 140059.
32. Dueby, S.; Dubey, V.; Indra, S.; **Daschakraborty, S.***, Non-monotonic composition dependence of the breakdown of Stokes–Einstein relation for water in aqueous solutions of ethanol and 1-propanol: explanation using translational jump-diffusion approach. *Physical Chemistry Chemical Physics* **2022,** *24* (31), 18738-18750.
33. Erimban, S.; **Daschakraborty, S.***, Homeoviscous Adaptation of the Lipid Membrane of a Soil Bacterium Surviving under Diurnal Temperature Variation: A Molecular Simulation Perspective. *The Journal of Physical Chemistry B* **2022,** *126* (39), 7638-7650.
34. Indra, S.*; Subramanian, R.; **Daschakraborty, S.**, Absorption of volatile organic compounds toluene and acetaldehyde in choline chloride-based deep eutectic solvents. *The Journal of Physical Chemistry B* **2022,** *126* (20), 3705-3716.
35. Maiti, A.; **Daschakraborty, S.***, Can urea and trimethylamine-N-oxide prevent the pressure-induced phase transition of lipid membrane? *The Journal of Physical Chemistry B* **2022,** *126* (7), 1426-1440.

36. Dubey, V.; Dueby, S.; **Daschakraborty, S.***, Breakdown of the Stokes–Einstein relation in supercooled water: The jump-diffusion perspective. *Physical Chemistry Chemical Physics* **2021,** *23* (36), 19964-19986.
37. Erimban, S.; **Daschakraborty, S.***, How does excess phenylalanine affect the packing density and fluidity of a lipid membrane? *Physical Chemistry Chemical Physics* **2021,** *23* (48), 27294-27303.
38. Erimban, S.; **Daschakraborty, S.***, Permeation pathway of two hydrophobic carbon nanoparticles across a lipid bilayer. *Journal of Chemical Sciences* **2021,** *133*, 1-17.
39. Indra, S.*; Subramanian, R.; **Daschakraborty, S.**, Interaction of volatile organic compounds acetone and toluene with room temperature ionic liquid at the bulk and the liquid-vacuum interface. *Journal of Molecular Liquids* **2021,** *331*, 115608.
40. Kiefer, P. M.; **Daschakraborty, S.**; Pines, D.; Pines, E.*; Hynes, J. T.*, Electron flow characterization of charge transfer for carbonic acid to strong base proton transfer in aqueous solution. *The Journal of Physical Chemistry B* **2021,** *125* (41), 11473-11490.
41. Maiti, A.; **Daschakraborty, S.***, How do urea and trimethylamine N-oxide influence the dehydration-induced phase transition of a lipid membrane? *The Journal of Physical Chemistry B* **2021,** *125* (36), 10149-10165.
42. Maiti, A.; **Daschakraborty, S.***, Effect of TMAO on the structure and phase transition of lipid membranes: potential role of TMAO in stabilizing cell membranes under osmotic stress. *The Journal of Physical Chemistry B* **2021,** *125* (4), 1167-1180.
43. Mallik, S.; Erimban, S.; Kaleeswaran, S.; Kumar, S.; **Daschakraborty, S.***; Nayak, A*., Unambiguous determination of electrostatically driven molecular packing in a triphenylene–surfactant complex monolayer. *Advanced Materials Interfaces* **2021,** *8* (13), 2100187.
44. Dubey, V.; **Daschakraborty, S.***, Breakdown of the Stokes–Einstein relation in supercooled water/methanol binary mixtures: Explanation using the translational jump-diffusion approach. *The Journal of Physical Chemistry B* **2020,** *124* (46), 10398-10408.
45. Dubey, V.; Maiti, A.; **Daschakraborty, S.***, Predicting the solvation structure and vehicular diffusion of hydroxide ion in an anion exchange membrane using nonreactive molecular dynamics simulation. *Chemical Physics Letters* **2020,** *755*, 137802.
46. Erimban, S.; **Daschakraborty, S.***, Cryostabilization of the cell membrane of a psychrotolerant bacteria via homeoviscous adaptation. *The Journal of Physical Chemistry Letters* **2020,** *11* (18), 7709-7716.
47. Erimban, S.; **Daschakraborty, S.***, Translocation of a hydroxyl functionalized carbon dot across a lipid bilayer: an all-atom molecular dynamics simulation study. *Physical Chemistry Chemical Physics* **2020,** *22* (11), 6335-6350.
48. Aminov, D.; Pines, D.; Kiefer, P. M.; **Daschakraborty, S.**; Hynes, J. T.*; Pines, E.*, Intact carbonic acid is a viable protonating agent for biological bases. *Proceedings of the National Academy of Sciences* **2019,** *116* (42), 20837-20843.
49. Dubey, V.; **Daschakraborty, S.***, Influence of glycerol on the cooling effect of pair hydrophobicity in water: relevance to proteins' stabilization at low temperature. *Physical chemistry chemical physics* **2019,** *21* (2), 800-812.
50. Dubey, V.; Dueby, S.; Erimban, S.; **Daschakraborty, S.***, Importance of translational jump in diffusion of hydrophobic solute in supercooled water: Solute size dependence. *J. Indian Chem. Soc* **2019,** *96*, 741-751.
51. Dubey, V.; Erimban, S.; Indra, S.; **Daschakraborty, S.***, Understanding the origin of the breakdown of the Stokes–Einstein relation in supercooled water at different temperature–pressure conditions. *The Journal of Physical Chemistry B* **2019,** *123* (47), 10089-10099.

52. Dueby, S.; Dubey, V.; **Daschakraborty, S.***, Decoupling of translational diffusion from the viscosity of supercooled water: Role of translational jump diffusion. *The Journal of Physical Chemistry B* **2019,** *123* (33), 7178-7189.
53. Erimban, S.; **Daschakraborty, S.***, Compatibility of advanced water models with a united atom model of lipid in lipid bilayer simulation. *The Journal of Chemical Physics* **2019,** *151* (6).
54. Verma, P.; Erimban, S.; Kumar, N.; **Daschakraborty, S.***; Nayak, A.*; Kumar, S., Influence of Coulombic Interaction on the Interfacial Self-Assembly of Discotic Liquid Crystal Amphiphiles: A Combined Experimental and Computer Simulation Study. *The Journal of Physical Chemistry C* **2019,** *123* (27), 16681-16689.
55. **Daschakraborty, S.***, How do glycerol and dimethyl sulphoxide affect local tetrahedral structure of water around a nonpolar solute at low temperature? Importance of preferential interaction. *The Journal of Chemical Physics* **2018,** *148* (13).
56. Dubey, V.; Kumar, N.; **Daschakraborty, S.***, Importance of Solvents' Translational–Rotational Coupling for Translational Jump of a Small Hydrophobic Solute in Supercooled Water. *The Journal of Physical Chemistry B* **2018,** *122* (30), 7569-7583.
57. Indra, S.; **Daschakraborty, S**.*, Nonpolar solvation dynamics for a nonpolar solute in room temperature ionic liquid: a nonequilibrium molecular dynamics simulation study. *Journal of Chemical Sciences* **2018,** *130*, 1-14.
58. Mallik, S.; Nayak, A.*; **Daschakraborty, S.**; Kumar, S.; Suresh, K. A., Supramolecular Self-Assembly of Ionic Discotic Liquid Crystalline Dimer with DNA at Interfaces. *ChemistrySelect* **2018,** *3* (25), 7318-7326.
59. Indra, S.; **Daschakraborty, S**.*, Mechanism of translational jump of a hydrophobic solute in supercooled water: Importance of presolvation. *Chemical Physics Letters* **2017,** *685*, 322-327.
60. **Daschakraborty, S**.*; Biswas, R.*, Dielectric relaxation in ionic liquid/dipolar solvent binary mixtures: A semi-molecular theory. *The Journal of chemical physics* **2016,** *144* (10).
61. **Daschakraborty, S**.*; Kiefer, P. M.*; Miller, Y.; Motro, Y.; Pines, D.; Pines, E.*; Hynes, J. T.*, Reaction mechanism for direct proton transfer from carbonic acid to a strong base in aqueous solution I: Acid and base coordinate and charge dynamics. *The Journal of Physical Chemistry B* **2016,** *120* (9), 2271-2280.
62. **Daschakraborty, S**.*; Kiefer, P. M.*; Miller, Y.; Motro, Y.; Pines, D.; Pines, E.*; Hynes, J. T.*, Reaction Mechanism for Direct Proton Transfer from Carbonic Acid to a Strong Base in Aqueous Solution II: Solvent Coordinate-Dependent Reaction Path. *The Journal of Physical Chemistry B* **2016,** *120* (9), 2281-2290.
63. Pines, D.; Ditkovich, J.; Mukra, T.; Miller, Y.; Kiefer, P. M.; **Daschakraborty, S**.; Hynes, J. T.*; Pines, E.*, How acidic is carbonic acid? *The Journal of Physical Chemistry B* **2016,** *120* (9), 2440-2451.
64. 52. Guchhait, B.; Das, S.; **Daschakraborty, S**.; Biswas, R.*, Interaction and dynamics of (alkylamide+ electrolyte) deep eutectics: Dependence on alkyl chain-length, temperature, and anion identity. *The Journal of Chemical Physics* **2014,** *140* (10).
65. **Daschakraborty, S**.; Biswas, R.*, Dielectric relaxation in ionic liquids: Role of ion-ion and ion-dipole interactions, and effects of heterogeneity. *The Journal of Chemical Physics* **2014,** *140* (1).
66. **Daschakraborty, S**.; Biswas, R.*, Composition dependent Stokes shift dynamics in binary mixtures of 1-butyl-3-methylimidazolium tetrafluoroborate with water and acetonitrile: Quantitative comparison between theory and complete measurements. *The Journal of Physical Chemistry B* **2014,** *118* (5), 1327-1339.

67. **Daschakraborty, S**.; Pal, T.; Biswas, R.*****, Stokes shift dynamics of ionic liquids: Solute probe dependence, and effects of self-motion, dielectric relaxation frequency window, and collective intermolecular solvent modes. *The Journal of Chemical Physics* **2013,** *139* (16).
68. **Daschakraborty, S**.; Biswas, R.*****, Asymmetric binary mixtures under cylindrical confinement: a molecular dynamics simulation study. *ISRAPS Bull* **2013,** *25*, 84-91.
69. **Daschakrabarty, S.**; Biswas, R.*****, Transport Properties of Binary Mixtures of Asymmetric Particles: A simulation study. *Concepts and Methods in Modern Theoretical Chemistry* **2013,** *2*, 21-35.
70. **Daschakraborty, S**.; Biswas, R.*****, Stokes shift dynamics of [Na][TOTO]–A new class of ionic liquids: A comparative study with more common imidazolium analogs. *Chemical Physics Letters* **2012,** *545*, 54-59.
71. **Daschakraborty, S**.; Biswas, R.*****, Ultrafast solvation response in room temperature ionic liquids: Possible origin and importance of the collective and the nearest neighbour solvent modes. *The Journal of Chemical Physics* **2012,** *137* (11).
72. **Daschakraborty, S**.; Biswas, R.*****, Does polar interaction influence medium viscosity? A computer simulation investigation using model liquids. *Journal of Chemical Sciences* **2012,** *124*, 763-771.
73. Guchhait, B.; **Daschakraborty, S**.; Biswas, R.*****, Medium decoupling of dynamics at temperatures∼ 100 K above glass-transition temperature: A case study with (acetamide+ lithium bromide/nitrate) melts. *The Journal of Chemical Physics* **2012,** *136* (17).
74. Gazi, H. A. R.; Guchhait, B.; **Daschakraborty, S**.; Biswas, R.*****, Fluorescence dynamics in supercooled (acetamide+ calcium nitrate) molten mixtures. *Chemical Physics Letters* **2011,** *501* (4-6), 358-363.
75. **Daschakraborty, S**.; Biswas, R.*****, Stokes' shift dynamics in alkylimidazolium aluminate ionic liquids: Domination of solute-IL dipole–dipole interaction. *Chemical Physics Letters* **2011,** *510* (4-6), 202-207.
76. **Daschakraborty, S**.; Biswas, R.*****, Stokes shift dynamics in (ionic liquid+ polar solvent) binary mixtures: composition dependence. *The Journal of Physical Chemistry B* **2011,** *115* (14), 4011-4024.

- **Guidance of B. Tech/ M. Sc./M.Tech/Ph.D students**

Ph.D.: 4 Ongoing; **6 Completed**

M. Sc.: 3 Ongoing; 12 Completed

M. Tech: 1 Completed

B.Tech.: 4 Completed