



## Santanu Bhattacharya

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### Research interests

#### 1. Molecular Design:

- Lipids and their analogues.
- Nucleic acid targeting/binding/modifying molecules.
- Decontamination Reactions in aggregates
- Biomolecular Sensors

#### 2. Chemical Biology

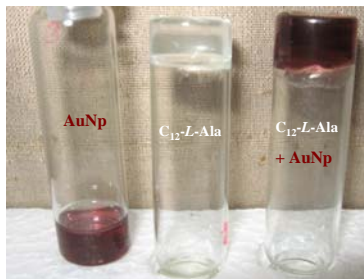
- Mechanism of Drug action on DNA.
- Chemistry of Telomeres.
- Membrane Formation and Assembly.
- Gene Transfer.

#### 3. Supramolecular Chemistry

Surfactants, Liquid Crystals, Oligomers  
Low Molecular Mass Gelators

#### 4. NanoScience & NanoTechnology

- Nanoparticles and Nanomaterials
- Gel-Nanocomposites



### Representative Publications

- P. Chaudhuri, B. Ganguly & **S. Bhattacharya** (2007) An Experimental and Computational Analysis on the Differential Role of the Positional Isomers of Symmetric Bis-2-(pyridyl)-1H-benzimidazoles as DNA Binding Agents. *J. Org. Chem.* **72**, 1912.
- S. Bhattacharya** & A. Bajaj (2007) Membrane-Forming Properties of Pseudoglycerol Backbone based Gemini Lipids possessing Oxyethylene Spacers. *J. Phys. Chem. B*, **111**, 2463.
- A. Bajaj, P. Kondiah, & **S. Bhattacharya** (2007) Design, Synthesis and *in-Vitro* Gene Delivery Efficacies of Novel Cholesterol based Gemini Cationic Lipids and their Serum Compatibility: A Structure-Activity Investigation *J. Med. Chem.* in press.
- S. Bhattacharya**, A. Srivastava. & A. Pal (2006) Modulation of Viscoelastic Properties of Physical Gels by Nanoparticle Doping: Influence of the Nanoparticle Capping Agent. *Angew Chem., Int. Ed.* **45**, 2934.
- S. Bhattacharya** & A. Bajaj, (2005) Recent Advances in Lipid Molecular Design. *Curr. Opin. Chem. Biol.* **9**(6), 647.
- J. Haldar, P. Kondiah and **S. Bhattacharya** (2005) Antimicrobial Properties of Novel 'Cleavable' Multi-headed Cationic Surfactants, *J. Med. Chem.*, **48**, 3823.
- A. Srivastava, S. Ghorai, A. Bhattacharjya, & **S. Bhattacharya** (2005) A Tetrameric Sugar based Azobenzene that Gels Water at various pH values and in the presence of salts, *J. Org. Chem.*, **70**, 6574.
- S. Bhattacharya** & V. Praveen Kumar (2005) Effect of Heteroatom Insertion at the side-chain of 5-Alkyl-1H-tetrazoles on their Properties as Catalysts for Ester Hydrolysis at Neutral pH, *J. Org. Chem.*, **70**, 9677.
- S. Bhattacharya** & J. Haldar (2004) Thermodynamics of Micellization of Multiheaded Single-chain Cationic Surfactants, *Langmuir*, **20**, 7940.
- S. Bhattacharya** and A. Guliyani, (2003) First Report of Zn<sup>2+</sup> Sensing Exclusively at Mesoscopic Interfaces" *Chem. Commun.*, 1158.
- Y.K. Ghosh, S.S. Visweswariah and **S. Bhattacharya** (2002) Advantage of the Ether Linkage between the positive charge and the Cholesteryl Skeleton in Cholesterol-based Amphiphiles as Vectors for Gene Delivery, *Bioconjugate Chem.*, **13**, 378.
- J. Haldar, V.K. Aswal, P.S. Goyal and **S. Bhattacharya** (2001) Molecular Modulation of Surfactant Aggregation in Water: Effect of the Incorporation of Multiple Headgroups on Micellar Properties *Angew. Chem. Int. Ed.* **40**, 1228.
- S. Bhattacharya** and Y.K. Ghosh (2001) First Report of Phase Selective Gelation of Oil from Oil/Water Mixtures. Possible Implications toward containing Oil Spills *Chem. Commun.* 185.