

Curriculum Vitae

Saswati Ghosh Roy, Ph. D.

Post Doctoral Fellow; Department of Chemical Sciences
Indian Institute of Science Education and Research
Kolkata Mohanpur - 741246, Nadia, West Bengal, India
Phone: +91-9564496201
E-mails: saswati.ghoshroy9@gmail.com



Career Objectives

Looking for a research and teaching-oriented academic position where I can demonstrate my teaching ability, research and experimental potentials on the field of Chemistry. Also I can contribute to the development and better understanding of science for benefit.

Education and Qualification

- Ph. D. Polymer Chemistry (2010 February–2014 (November))**
Indian Institute of Science Education and Research Kolkata, West Bengal, India
Thesis Title: Design, Synthesis, Characterization and Solution Properties of Amino Acid Based Novel Macromolecular Architecture
Supervisor: Dr. Priyadarsi De
- M. Sc. F. MS by Thesis in Biocomposites and Biomaterials Processing (2009 September)**
Faculty of Forestry, University of Toronto, Toronto, Ontario, Canada
Thesis Title: Novel Approach for Synthesis of Polyols from Soy Oils
Supervisor: Prof. Mohini. M. Sain
- M. Sc. Chemistry (Organic Special) (2002 September)**
Department of Chemistry, University of Kalyani, Kalyani, West Bengal, India
- B. Sc. Chemistry (Hons) (2000 August)**
Asansol Girls' College, The University of Burdwan, West Bengal, India

Awards and Achievements

1. UGC-JRF NET, Chemical Sciences (2003)
2. GATE, Chemical Sciences (2003)
3. Best Poster Award in Inhouse Symposium, IISER Kolkata (2010), Kolkata, India
4. Member, The Society for Polymer Science, India

Core Skills and Experience

Controlled radical polymerisation (RAFT) and comprehensive polymer characterization by NMR, Size exclusion chromatography (SEC), Matrix-Assisted Laser Desorption/Ionization-Mass Spectroscopy (MALDI-MS), Fluorescence Microscopy, Thermo-gravimetric Analysis(TGA) and Differential Scanning Calorimetry (DSC), Field Emission Scanning Electron Microscopy (FESEM), and Atomic Force Microscopy (AFM), Dynamic Light Scattering (DLS).

Organic synthesis and characterization by FTIR, NMR, HPLC, UV/Vis and Mass spectroscopy

Research Interest

I am interested in the research topics of: controlled radical polymerization; Synthetic polymer chemistry and polymer self-assembly; hydrogels and organogels; polymeric nano materials and nano material chemistry; host-guest inclusion complex based material chemistry; bio-application of polymeric material; organic synthesis.

Personal Information

Female; Married; Nationality: Indian; Date of Birth: 14th October, 1978

Publications

Peer-reviewed publication:

1. Roy, S. G.; Kumar, A.; De, P. “Amino Acid Containing Cross-Linked Co-Polymer Gels: pH, Thermo and Salt Responsiveness” *Manuscript Communicated in Polymer*.
2. Roy, S. G.; Jena, S. S.; De, P. “Solvent-Dependent Self-Assembly Behaviour of Block Copolymers Having Side-Chain Amino Acid and Fatty Acid Block Segments” *Reactive and Functional Polymer*, **2016**, 99, 26–34. (I.F. – 2.5)
3. Bauri, K.; Roy, S. G.; De, P. “Side-Chain Amino Acid Derived Cationic Chiral Polymers by “Controlled Radical Polymerization” *Macromolecular Chemistry and Physics*” (Talent Article), **2015**, DOI: 10.1002/macp.201500271. (I.F. –2.616)
4. Vaish, A.; Roy, S. G.; De, P. “Synthesis of Amino Acid Based Covalently Cross-Linked Polymeric Gels Using Tetrakis(hydroxymethyl) Phosphonium Chloride as a Cross-Linker” *Polymer*, **2015**, 58, 1-8. (I. F. – 3.562)
5. Roy, S. G.; Bauri, K.; Pal, S.; De, P. “Tryptophan Containing Covalently Cross-Linked Polymeric Gels with Fluorescence and pH-Induced Reversible Sol–Gel Transition Properties” *Polym. Chem.*, **2014**, 5, 3624-3633. (I. F. – 5.52)

6. Roy, S. G.; Halder, U.; De, P. **“Remarkable Swelling Capability of Amino Acid Based Cross-Linked Polymer Networks in Organic and Aqueous Medium”** *ACS Appl. Mater. Interfaces*, **2014**, *6*, 4233–4241. (I. F. – 6.723).
7. Roy, S. G.; De, P. **“Facile RAFT Synthesis of Side-Chain Amino Acid Containing pH Responsive Hyperbranched and Star Architectures”** *Polym. Chem.*, **2014**, *5*, 6365–6378. (Highlighted among the top twenty most accessed articles of that journal in the year 2014). (I. F. – 5.52)
8. Roy, S. G.; De, P. **“Swelling Properties of Amino Acid Containing Cross-Linked Polymeric Organogels and Their Respective Polyelectrolytic Hydrogels with pH and Salt Responsive Property”** *Polymer*, **2014**, *55*, 5425–5434. (I. F. – 3.562)
9. Roy, S. G.; De, P. **“pH Responsive Polymers with Amino Acids in the Side Chains and Their Potential Applications”** *J. Appl. Polym. Sci.*, **2014**, *131*, 41084 (1–12). (Review Article, I. F. – 1.64)
10. Pal, S.; Roy, S. G.; De, P. **“Synthesis via RAFT Polymerization of Thermo- and pH-Responsive Random Copolymers Containing Cholic Acid Moieties and Their Self-Assembly in Water”** *Polym. Chem.*, **2014**, *5*, 1275–1284. (Highlighted among the top twenty most accessed articles of that journal of year 2014). (I. F. – 5.52)
11. Niraja, K.; Roy, S. G.; De, P.; Bagchi, S. **“Synthesis of a Polymer Bearing Several Coumarin Dyes Along the Side-Chain and Study of its Fluorescence in Pure and Binary Solvent Mixtures as well as Aqueous Surfactant Solutions”** *J. Phys. Chem. B*, **2014**, *118*, 4683–4692. (I. F. – 3.302)
12. Roy, S. G.; Bauri, K.; Pal, S.; Goswami, A.; Madras, G.; De, P. **“Synthesis, Characterization and Thermal Degradation of Dual Temperature- and pH-Sensitive RAFT- Made Copolymers of N,N-(Dimethylamino)Ethyl Methacrylate and Methyl Methacrylate”** *Polym. Int.*, **2013**, *62*, 463–473. (I. F. – 2.25).
13. Roy, S. G.; Acharya, R.; Chatterji, U.; De, P. **“RAFT Polymerization of Methacrylates Containing Tryptophan Moiety: Controlled Synthesis of Biocompatible Fluorescent Cationic Chiral Polymers with Smart pH-Responsiveness”** *Polym. Chem.*, **2013**, *4*, 1141–1152. (I. F. – 5.52)
14. Bauri, K.; Roy, S. G.; Pant, S.; De, P. **“Controlled Synthesis of Amino Acid-Based pH-Responsive Chiral Polymers and Self-Assembly of Their Block Copolymers”** *Langmuir*, **2013**, *29*, 2764–2774. (I. F. – 4.457)
15. Bauri, K.; Pant, S.; Roy, S. G.; De, P. **“Dual pH and Temperature Responsive Helical Copolymer Libraries with Pendant Chiral Leucine Moieties”** *Polym. Chem.*, **2013**, *4*, 4052–4060. (I. F. – 5.52)
16. Patil, N.; Roy, S. G.; Halder, U.; De, P. **“CdS Quantum Dots Doped Tuning of Deswelling Kinetics of Thermoresponsive Hydrogels Based on Poly(2-(2-methoxyethoxy)ethyl methacrylate)”** *J. Phys. Chem. B*, **2013**, *117*, 16292–16302. (I. F. – 3.302)
17. Bauri, K.; Roy, S. G.; Arora, S.; Dey, R. K.; Goswami, A.; Madras, G.; De, P. **“Thermal Degradation Kinetics of Thermoresponsive Poly(N-isopropylacrylamide-co-N,N-Dimethylacrylamide) Copolymers Prepared via RAFT Polymerization”** *J. Therm. Anal. Calorim.*, **2013**, *111*, 753–761. (I. F. – 2.042)

18. Kumar, S.; Roy, S. G.; De, P. **“Cationic Methacrylate Polymers Containing Chiral Amino Acid Moieties: Controlled Synthesis via RAFT Polymerization”** *Polym. Chem.*, **2012**, 3, 1239-1248. (*Highlighted among the top ten most accessed articles of that journal in the year 2012*). (I. F. – 5.52)

Book chapter:

1. Roy, S. G.; Banerjee, S.; De, P. **“Cationic Polymerization of Nonpolar Vinyl Monomers for Producing High Performance Polymers”** In: Saleem Hashmi (editor-in-chief), Reference Module in Materials Science and Materials Engineering. Oxford: Elsevier; **2016**. pages. 1-17. (Book Chapter).
2. Maiti, B.; Ruidas, B.; Roy, S. G.; De, P. **“RAFT Polymerization of Side-Chain L-Proline Containing Methacrylate Monomer: Controlled Synthesis, Thermoresponsiveness and Self-Assembly”** ISBNN anospectrum (NS & NT- 2014). *Submitted*.
3. Roy, S. G.; De, P. **“Polymers prepared via Reversible Deactivation Radical Polymerization (RDRP) for bio-medical applications”** In Nikhil K. Singha and Jimmy W. Mays (Editors), Functional Polymers by Controlled Radical Polymerization: Concepts, Strategies and Applications, *Smithers (RAPRA)*, UK. (*Under preparation*). (Book Chapter).

Seminars and contribution to meeting:

1. Roy, S. G.; De, P. **“Facile Synthesis of Side-Chain Amino Acid Based pH Responsive Hyperbranched and Star Architectures via SCVP-RAFT”** MACRO 2015: **International Symposium on Polymer Science and Technology**, January 23-26, 2015, IACS, Kolkata, India.
2. Roy, S. G.; De, P. **“RAFT Polymerization of Methacrylates Containing a Tryptophan Moiety: Controlled Synthesis of Biocompatible Fluorescent Cationic Chiral Polymers with Smart pH-Responsiveness”** **Recent Advances in Polymer & Rubber Science & Technology (RAPT-2014)**, January 22-24, 2014, University of Calcutta, India.
3. Roy, S. G.; De, P. **“RAFT Polymerization of Methacrylates Containing Tryptophan Moiety: Controlled Synthesis of Biocompatible Fluorescent Cationic Chiral Polymers with Smart pH-Responsiveness”**, Indo-German Workshop on **New Perspectives for Nano-Carriers in Biomedical Applications**, January 14, 2013, Delhi University, India.
4. Roy, S. G.; Bauri, K.; Aind, M. R.; De, P. **“Design and Synthesis of Amino Acid Based Polymeric Architectures for Applications in Drug Delivery”** **Inhouse Symposium IISER Kolkata**, March 13, 2011, IISER, Kolkata, India.
5. Roy, S. G.; Patil, N.; De, P. **“Dual Temperature- and pH-Sensitive RAFT-Made Copolymers of N,N-(Dimethylamino)ethyl Methacrylate and Methyl Methacrylate”** **Symposium on polymer science-2011**. Dec. 10, 2011, IISER, Kolkata, India.

6. **Roy, S. G.**; Aind, M. R.; Pal, S.; De, P. “Design and Synthesis of Amino Acid Based Macromolecular Architectures” **Symposium on polymer science-2010**. Nov. 27, 2010, IACS, Kolkata, India.
7. **Roy, S. G.**; Bandyopadhyay-Ghosh, S.; Sain, M. “Novel Approaches for Synthesis of Polyols From Soy Oils”, The Ontario BioCar Initiative, **3rd Biannual Research Meeting and Advisory Panel Meeting**, June 2, 2009, University of Toronto, Canada.
8. Bandyopadhyay-Ghosh, S.; **Roy, S. G.**; Sain, M., “Soybean Oil Modification for Polyurethane Foam”, The Ontario BioCar Initiative, **2nd Biannual Research Meeting and Advisory Panel Meeting**, 3rd November, 2008, Davis Centre, University of Waterloo, Canada.
9. Bandyopadhyay-Ghosh, S.; Ghosh, S. B.; **Roy, S. G.**; Sain, M. “Synthesis and Characterization of Next Generation Polyurethane Foam from Soybean Oil”, **Canada-France Partnership Day, Nano Bio-composites**, 14th May, 2008, Centre for Biocomposites and Biomaterials Processing, University of Toronto, Canada.