



Dr. Pinki Saha Sardar

Assistant Professor

Department of Chemistry

Contact Information

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Specialization

- Physical Chemistry



**THE BHAWANIPUR
EDUCATION SOCIETY COLLEGE**

Biographical Sketch

Dr. Pinki Saha Sardar is currently associated as an Assistant Professor in the Department of Chemistry, The Bhawanipur Education Society College, affiliated to the University of Calcutta. Prior to joining this institution, she worked as Project Investigator in a Fast-Track Young Scientist Project of DST (SERB), Govt. of India at Presidency University (erstwhile Presidency College) Kolkata. She has also Post-Doctoral research work experience on various fields of optical spectroscopy for about four years with the different Institutions of Calcutta. She has several research publications in the highly reputed International journal like American Chemical Society, Royal Society of Chemistry, Elsevier, Wiley, Springer etc. She was awarded her Ph. D. degree by the University of Calcutta. She has almost 20 years of research experience. She was also appointed as a Guest or Part-time lecturer in the different Colleges and Universities of Calcutta for teaching the different course of the undergraduate Chemistry. She has presented her research work as oral and poster presentation in the different National and International Symposiums/ seminars Workshops. She has also participated in the various National and International Seminars and got the opportunity to meet with different eminent Scientists or Researchers of the different Institutions India and abroad associated with her research field. At present she is actively engaged in research in the department as a Ph. D supervisor with the research grant received from the management of the College to procure steady state spectrofluorimeter and spectrophotometer and other accessories. She is also engaged as reviewer of the different International Journals. She is guiding the M.SC. and B.SC. Project Student of the different Institutions of Calcutta for several years. She is at present co-ordinator and member of the different committee of the college and actively engaged in the several work related to committee and the department. She has acted as a convenor in the different seminars/ workshop organized by the Department and the Environmental Development committee of the College. She was also invited as a speaker in the seminar organized by the different colleges. She is now actively engaged in the teaching in the different semesters of several topics of theory and practical papers of the undergraduate syllabus of Honours and General the University of Calcutta.



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Academic Qualifications

Abbreviation of the Degree	Name of the College / University	Area of Specialization	Year of Passing
Ph.D	University of Calcutta	Photochemistry	2009
NET-LS	CSIR-UGC NET	Chemical Sciences	2001
M.Sc.	University of Calcutta	Physical Chemistry	2000
B.Sc.	University of Calcutta	Chemistry	1998

Position Holding (Fulltime)

- Assistant Professor (Stage-I), Department of Chemistry, The Bhawanipur Education Society College, 5, Lala Lajpat Rai Sarani, Kolkata-700020 from 16.08.2014-Present.

Positions Held

- Part-time (College Approved) Lecturer, Department of Chemistry, The Bhawanipur Education Society College, Kolkata from 12. 03. 2013 to 14. .08. 2014.
- Guest Lecturer, Department of Chemistry, Presidency University, Kolkata from July 2013 -December, 2013 and February 2014 to June 2014.
- Guest Lecturer, Department of Chemistry, Maharaja Manindra Chandra College, Kolkata from 08.07. 2010 to 31.07.2012.
- Guest Lecturer, Department of Chemistry, Women's College, Calcutta, Kolkata from 14.11.2008 to 17.04.2010.
- Part-time Lecturer, Department of Chemistry, Bidhannagar Govt. College, Kolkata from 16.08.2004 to 31.01.2005.





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Research Experience

- Project Investigator and Scholar, Fast Tract Young Scientist Project –DST (SERB), Govt. of India at the Department of Chemistry, Presidency College, Kolkata- 700073 from 21.01.2014 to 14.08.2014.
- Post-Doctoral Research Experience with Professor Sanjib Ghosh at the Department of Chemistry, Presidency College, Kolkata-700073 from 2009 to 2013.
- Research Associate, DST (Govt. of India) Project No. (SR/S1/PC-57/2008) at the Department of Chemistry, Presidency University Kolkata-700073 from 01.01.2010 to 31.03.2013.
- Extended SRF, DST (Govt. of India) Project No. (SR/S1/PC-57/2008) at the Department of Chemistry, Presidency College Kolkata-700073 from 23.05.2009 to 31.12.2010.
- Senior Research Fellow, DST (Govt. of India) Project No. (SR/S5/NM-14/2003) at the Department of Chemistry, Presidency College Kolkata-700073 from 28.05.2007 to 31.03.2009.
- Junior Research Fellow (JRF), DST (Govt. of India) Project No. (SR/S5/NM-14/2003) at the Department of Chemistry, Presidency College Kolkata-700073 from 13.12.2004 to 27 .05.2007.
- Part-time Research Fellow, the Department of Chemistry, Presidency College Kolkata-700073 from 01.04.2004-12.12.2004.
- Junior Research Fellow (JRF), CSIR (Govt. of India) Project No. (01/(1642)//00 EMR-II) at the Department

Administrative Assignment

- Secretary, The Bhawanipur Education Society College Employees' Cooperative Credit Society Limited.
- Joint-Co-ordinator, Environmental Development Committee of the College.
- Student –Teacher Co-ordinator of the College.
- Member, NAAC steering committee of the College.
- Member, Examination Committee of the College.
- Member, Anti-Raging Committee of the College.
- Member, Student Feedback Committee of the College.





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Subjects Taught

Transport processes | Chemical Kinetics | Chemical Thermodynamics- I and II | Systems of Variable Composition | Chemical Equilibrium | Colligative properties | Phase Equilibria | Foundation of Quantum Mechanics | Quantum Chemistry-II | Photochemistry | Molecular spectroscopy Dipole Moment & Polarisability | Statistical thermodynamics | Fortran and Advance Excel | Physical Chemistry Practical topics

Research Interests And Technical Expertise

- Studies with Protein systems:
The photophysical behaviour of the intrinsic probe Trp/Tyr of a protein or an external molecule bound to the protein by steady-state and time-resolved fluorescence and phosphorescence at 77 K on the following systems:
(a) Protein-Protein Interaction:
(b) Protein-Drug/ligand/ nucleic acid Interaction:
(c) Protein-Ligand Interaction:
- Studies with macrocyclic/supramolecular systems:
(a) The Photophysical properties of the macrocyclic polyether complexes of alkali metal ions and lanthanide ions at room temp and at 77K.
(b) Photophysical aspects of the interaction between the organized assemblies and ligand or drug interaction- model study for drug designing and drug delivery study.
- Work on Polymer and polymer nanocomposite to understand Structural and morphological aspects (FTIR/SEM/TEM/XRD analyses) and Conductivity characteristics. Post Doctoral Research Experience:
Studies on d-f hybrid metal Complexes:
Studies on ternary systems:
Studies on polymer and polymer based nanocomposite systems.
- At present actively engaged in the Research with different collaborating institutes viz. Presidency University, Kolkata; St. Xavier's College, Kolkata; Adamas University, Barasat; IIT Kharagpur, West Bengal for different experimental and theoretical work.





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Practical Experiences on Instruments Handling:

- Time resolved emission set up from 50 ps to secs.: Time Correlated Single Photon Counting and Stroboscopic technique with Time Master Spectrofluorimeter (Photon Technology International, Inc, USA) equipped with Nanosecond Nitrogen flash lamp, nano/pico LED, pico Diode Laser and xenon flash lamp and other accessories for:
 - (i) Time resolved anisotropy detection.
 - (ii) Time resolved phosphorescence detection.
 - (iii) Temperature variation from room temperature to 77 K.
- Fluorescence Spectrophotometer (Hitachi-F-7000 & F-4010) equipped with a 150W steady xenon lamp with accessory for phosphorescence detection at low temperature. Steady state anisotropy can also be detected by manual Glen-Thompson polarizer.
- UV- VIS Spectrophotometer (Hitachi-Model U-4010 & U-3210) with reflectance attachment and temperature variation accessory, F-4010, X-ray Defractometer (Philips PW 1830),
- FTIR Spectrophotometer (JASCO-680+).
- Four Probe dc conductivity unit with (a) Low Current Source (LCS-02), (b) Constant Current Source (CCS-01), (c) PID controlled oven (PID-200), (d) Digital Microvoltmeter (DMV-001).
- Small Equipments :
Centrifuge, Analytical Balance (Mettlar AE-240), pH Meter (Systronic), Conductivity Meter (Systronic), Nephlo Turbidity Meter (Systronic), Sonicator, BOD incubator, Muffle Furnace, Deioniser, Vacuum Pump, Constant and Variable Temperature Water bath, Magnetic Stirrer, Vortex Mixer, Magnetic Balance etc.
- Computational Experience :
Softwares: FlexX for Bioinformatics (for homology modelling, protein-ligand docking) and Gaussian 03W (for other supramolecules, charge transfer complexes etc). Proficient with Microsoft Window based software, MS-Word, Microcal-ORIGIN 6.0, Adobe Photoshop-CS2, Chemwindow, Chemdraw and some work related software.





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Research Projects

- The Research and Publication Cell of the Bhawanipur Education Society College sponsored project entitled "Investigation of the interaction of biomacromolecules or supramolecules with potent ligands/drugs using spectroscopic technique and theoretical calculations." (No.: Grant No: BESC/RPC/2019-2020/SCI/03) (Project cost: s. 100000/-) (Ongoing).
- Fast Track Proposals for Young Scientists" (Science and Engineering Research Board) DST, Govt. of India entitled "Structural and Conformational Aspects of Polymer Nanocomposites Doped with Lanthanide Ions Probing the Energy Transfer Process and of the Biopolymers by Time Resolved Emission Technique at Different Temperatures.". (No.: SB/FT/CS-141/2013 dated 31.12.2013) (Project Cost: Rs. 6,55,923/-)(completed).

Research Guidance

Enrolled as Ph.D. Supervisor under University of Calcutta.

- Ph.D. Scholar:
Ms. Suparna Ghosh Pyne*
(*yet not enrolled/registered to CU. Just started the work for Ph.D programme).
M.Sc./B.Sc. Student.
- At present acting as a external supervisor for online Summer Internship Program_Odd 2021 of a student of B.Sc. (H) Chemistry SEM: V.
Project title: Review on Photo-physics of fluorescence active compounds in micellar environment- A review work by Ms. Annena Jesuman.
- Acted as an external supervisor for online Summer Internship Program_Odd 2020 of a student of B.Sc. (H) Chemistry SEM:V of Amity University, Kolkata.
- Project title: Dependence of solvent polarity on the photophysics of coumarin derivatives: A Review by Ms. Parna Chakraborty (Review work).
- Acted as Project Guide of M.Sc. Thesis Dissertation of Summer Internship Project (SIP) two Students of Amity University, Kolkata.
- Project title: Photophysical Studies of Some Biomolecular Systems in Protein Ligand Interactions by Ms. Ankita Saha.
- Project title: Photophysical Aspects of Some Supramolecular/ Biomolecular Systems Using Spectroscopic Technique by Mr. Prince kumar.
- Acted as Project Guide of M.Sc. Thesis Dissertation of two Students of Scottish Church College, Kolkata.





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- Project title: Different physical aspects regarding encapsulation of drugs in the nanocore of cyclodextrins: a review by Mr. Manisankar Mandal (Review work).
- Project title: Charge Transfer complex and its various aspects by Ms. Shelly Chakraborty (Review Work).
- Collaborative work:
Guided and helped Mr. Sandip Paul, Research Fellow of Dr. Anjoy Majhi, Assistant Professor, Department of Chemistry, Presidency University, Kolkata.

Journal Publications

- Sandip Paul, Pritam Roy, Sourav Das, Soumen Ghosh, Pinki Saha Sardar*, Anjoy Majhi, "Addressing the Exigent Role of a Coumarin Fluorophore toward Finding the Suitable Microenvironment of Biomimicking and Biomolecular Systems: Steering to Project the Drug Designing and Drug Delivery Study," ACS Omega, 6, 18, 11878-11896 (2021)
- Sandip Paul, Pritam Roy, Pinki Saha Sardar*, Anjoy Majhi, "Design, synthesis and biophysical studies of novel 1,2,3-Triazole based quinolin and coumarin compounds", ACS Omega, 4, 7213- 7230 (2019).
- Sandip Paul, Raju Ghanti, Pinki Saha Sardar, Anjoy Majhi, "Synthesis of a novel coumarin derivative and its binding interaction with serum albumins", Chem. Heterocycl. Compd., 55, 607- 611 (2019).
- Moumita Mukherjee, Pinki Saha Sardar, Pritam Roy, Swagata Dasgupta, Maitrayee Basu Roy, Sanjib Ghosh, "Antenna effect and phosphorescence spectra to find the location of drug tetracycline in bovine beta-lactoglobuline A", J. Biol. Inorg. Chem., 23, 917- 927 (2018).
- Priti Sengupta, Pinki Saha Sardar, Pritam Roy, Swagata Dasgupta, Adity Bose, "Investigation on the interaction of Rutin with serum albumins: Insights from spectroscopic and molecular docking techniques", J. Photochem. Photobiol. B; Biology 183, 101-110 (2018).
- Sandip Paul, Nasim Sepay, Shrabana Sarkar, Pritam Roy, Swagata Dasgupta, Pinki Saha Sardar*, Anjoy Majhi "Interaction of serum albumins with fluorescent ligand 4-azido coumarin: spectroscopic analysis and molecular docking studies", New J. Chem., 41, 15392-15404 (2017).
- Adity Bose, Dibyangana Parbat, Moumita Mukherjee, Pinki Saha Sardar, Sanjib Ghosh, "Photoacidic behavior of small phenolics in micellar media", Spectroscopy Letters, 50, 81-87 (2017).
- Sugata Samanta, Swarna Kamal Samanta, Sagarika Sanyal, Pinki Saha Sardar*, Sanjib Ghosh, "Features of partial encapsulation of an ESIPT probe 3-hydroxy-2-naphthoic acid (3HNA) in the nano cavities of β - and γ -cyclodextrin: comparative study with sequestered 3HNA in micelles and reverse micelle", RSC Advances, 6, 110610, 114- 124 (2016).





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- Sagarika Sanyal, Pinki Saha Sardar, Maitrayee Basu Roy, Swatilekha Pratihari, Sugata amanta, Moumita Mukherjee, Pritam Roy, Swagata Dasgupta, Sanjib Ghosh, "Exploring the nature of nanocavity and channels in Apoferritin and Apoferritin-SDS complex using enhanced antenna effect through encapsulation of Eu(III)-TC complex", Eur. J. Inorg. Chem. 4152-4161 (2016).
- Manini Mukherjee, Aditya Sarkar, Arunava Roy, Pinki Saha Sardar, Ansuman Lahiri, Dhruvjayoti Chattopadhyay, Sanjib Ghosh, "Role of Tryptophan 135 of Chandipura Virus Phosphoprotein P in Dimerization and Complex Formation with Leader RNA: Structural Aspect using Time Resolved Anisotropy and Simulation, RSC Advances, 5, 104582- 104593 (2015).
- Swarna Kamal Samanta, Sk Md Towsif Abtab, Pinki Saha Sardar, Sagarika Sanyal, Muktimoy Chaudhury, Sanjib , "Role of Triplet States of Two Different Ligands in the Sensitized emission of LnIII (EuIII, TbIII) in d-f Hybrid Tetranuclear Hetero-Metal (ZnII2LnIII2, CdII2LnIII2) Complexes", Eur. J. of Inorg. Chem., 3101-3113 (2014).
- Manini Mukherjee, Pinki Saha Sardar, Shyamal Kr. Ghorai, Swarna Kamal Samanta, Atanu Singha Roy, Swagata Dasgupta, Sanjib Ghosh, "A Comparative Study of Interaction of Tetracycline with Several Proteins Using Time Resolved Anisotropy, Phosphorescence, Docking and FRET", PLoS ONE, 8 (4), 60940-60956 (2013).
- Shyamal Kr. Ghorai, Swarna Kamal Samanta, Manini mukherjee, Pinki Saha Sardar, Sanjib Ghosh, "Tuning of "antenna effect" of Eu (III) in ternary systems in aqueous medium through protein binding", Inorganic Chemistry, 52, 1476-1487(2013).
- Sarat Chandra Patra, Satyabrata Chaudhuri, Amit Saha Roy, Pinki Saha Sardar, Sanjib Ghosh, Thomas Weyhermüller, Prasanta Ghosh", Zinc(II), iron(II/III) and ruthenium(II) complexes of o-phenylenediamine derivatives: oxidative dehydrogenation and photoluminescence", Dalton Trans., 42, 15028-15042(2013).
- Suman Kundu, Suwendu Maity, Pinki Saha Sardar, Sanjib Ghosh, Prasanta Ghosh, "Mono-and di-nuclear photoluminescent complexes of zinc(II), cadmium(II) and mercury(II) of a chiral diimine ligand", Dalton Trans., 42, 13026-13035(2013).
- Sk Md Towsif Abtab, Anandalok Audhya, Nabanita Kundu, Swarna Kamal Samanta, Pinki Saha Sardar, Sanjib Ghosh, Muktimoy Chaudhury, "Tetranuclear homo- (ZnII4 and CdII4) and hetero-metal (ZnII2TbIII2 and CdII2TbIII2) complexes with a pair of carboxylate ligands in a rare $\eta^2:\eta^2:\mu_4$ -bridging mode: syntheses, structures and emission properties", Dalton Trans, 42(5), 1848-1861 (2013).





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- Manini Mukherjee, Pinki Saha Sardar, Swarnakamal Samanta, Shyamal Kr Chorai, Swagata Dasgupta, Sanjib Ghosh, "Interaction of multitryptophan protein with drug: an insight into the binding mechanism and the binding domain by time resolved emission, anisotropy, phosphorescence and docking., J. Photochem. Photobiol. B; Biology, 115, 93-104 (2012).
- Anirban Pal, Shyam Sundar Maity, Subhodip Samanta, Pinki Saha Sardar, Sanjib Ghosh "Interaction of the excited state intramolecular proton transfer probe 3- hydroxy -2- naphthoic Acid with poly N- vinyl -2- pyrrolidone polymer in water: an insight into the water structure in the binding region", J. Lum., 130,1975-1982(2010).
- Debanjana Ghosh, Pinki Saha Sardar, Mukul Biswas, Anup Mondal, Nillohit Mukherjee, "Dielectric characteristics of poly(N-vinylcarbazole) and its nanocomposites with ZnO and acetylene black", Mater. Chem. & Phys., 123, 9-12 (2010).
- Pinki Saha Sardar, Arjun Maity, Sanjib Ghosh, Mukul Biswas "A Conducting Nanocomposite of Polystyrene with Acetylene Black", Polym. J., 41,1-3 (2009).
- Pramod Kumar Verma, Pinki Saha Sardar, Sanjib Ghosh, Mukul Biswas, "Conducting Nanocomposites of Polyacrylamide with Acetylene Black and Polyaniline", Polymer Composites,30(4), 490- 496(2009).
- Pinki Saha Sardar, Sanjib Ghosh, Mukul Biswas, Nirmalya Ballav "Highly Conductive Polyfuran-13X Zeolite-Polyaniline Composite", Polym. J., 40, 1-5(2008).
- Shyam Sundar Maity , Subhodip Samanta, Pinki Saha Sardar, Anirban Pal, Swagata Dasgupta, Sanjib , "Fluorescence, anisotropy and docking studies of proteins through excited state intramolecular proton transfer probe molecules", Chem. Phys., 354, 1-3, 162-173 (2008).
- Pinki Saha Sardar, Subhodip Samanta, Maitrayee Basu Roy and Sanjib Ghosh, "Dependence of photoinduced energy transfer on the orientation of the acceptor lanthanide ions with respect to π -plane of naphthalene in naphthalene liked six member crown ethers", Mol. Phys., 106, 827-840 (2008).
- Pinki Saha Sardar, Subhodip Samanta, Shyam Sundar Maity, Swagata Dasgupta, Sanjib Ghosh, "Energy transfer photophysics from serum albumins to sequestered 3- Hhydroxy-2-naphthoic acid, an excited state intramolecular proton-transfer probe", J. Phys Chem. B, 112, 3451-3461 (2008).
- Arjun Maity, Pinki Saha Sardar, Sanjib Ghosh, Mukul Biswas, "A conducting composite based on poly(N-vinylcarbazole)-formalin resin and acetylene black" J. Appl. Polym. Sc., 104, 3837-3843 (2007).





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- Pinki Saha Sardar, Shyam Sundar Maity, Lalita Das, Sanjib Ghosh. "Luminescence studies of perturbation of tryptophan residues of tubulin in the complexes of tubulin with colchicine and colchicine analogues", *Biochemistry* 46, 14544-14556 (2007).
- Subhodip Samanta, Pinki Saha Sardar, Shyam Sundar Maity, Anirban Pal, Maitrayee Basu Roy, Sanjib Ghosh "Comparative photophysical behaviour of naphthalene-linked crown ethers and aza crown ethers of varying cavity dimensions", *J. Chem. Sci.* 119, 1- 9 (2007).
- Nirmalya Ballav, Pinki Saha Sardar, Sanjib Ghosh, Mukul Biswas "Polyaniline and polypyrrole modified conductive nanocomposites of polyfuran and polythiophene with montmorillonite clay", *J. Mater. Sci.*, 41, 2959-2964(2006).
- Pinki Saha Sardar, Shyam Sundar Maity, Sanjib Ghosh, Juin Chatterjee, Tushar Kanti Maiti, Swagata Dasgupta. "Characterization of the tryptophan residues of Human placental ribonuclease inhibitor and its complex with bovine pancreatic ribonuclease A by steady-state and time-resolved emission spectroscopy", *J. Phys. Chem. B* 110, 21349-21356 (2006).
- Pinki Saha Sardar, Shyam Sundar Maity, Subhodip Samanta, Anirban Pal, Sanjib Ghosh, "Tripletstate sublevel spectroscopy and photoinduced energy transfer in a metalloprotein and some model systems", *Ind. J. Rad. & Res.*, 3, 117-124 (2006).

Publications In Edited Conference Volumes

- Pinki Saha Sardar, Manini Mukherjee, Swarna Kamal Samanta, Shyamal Kr. Ghorai, Sagarika Sanyal, Sugata Samanta, Sanjib Ghosh, "Investigation of the interaction of an antibiotic with single and multi tryptophan proteins by steady-state and time resolved emission and docking studies", *Proceedings of DAE-BRNS Eleventh Biennial Trombay Symposium on Radiation and Photochemistry (TSRP-2012)*, BARC, Trombay, Mumbai, Jan 4-7, 2012, PC-95, P-372-373. ISBN: 81-88513-47-4.
- Shyamal Kr. Ghorai, Swarna Kamal Samanta, Manini Mukherjee, Sagarika Sanyal, Sugata Samant, Pinki Saha Sardar, Sanjib Ghosh "Energy transfer studies of two isomeric naphthoic acids to acceptor lanthanide ions: role of the orientation of the donor and the acceptor", *Proceedings of DAE- BRNS Eleventh Biennial Trombay Symposium on Radiation and Photochemistry(TSRP-2012)*, BARC, Mumbai, Jan 4-7, 2012, PC-93, P-369-370. ISBN: 81-88513-47-4.
- Sagarika Sanyal, Sugata Samanta, Swarna Kamal Samanta, Shyamal Kr. Ghorai, Manini Mukherjee, Pinki Saha Sardar, Sanjib Ghosh, "Steady State and Time Resolved Studies of Some Charge Transfer Complexes Exploring Stacking/Non-stacking Interaction and Unusual Solvent Effect", *Proceedings of DAE-BRNS Eleventh Biennial Trombay Symposium on Radiation and Photochemistry (TSRP-2012)*, BARC, Mumbai, Jan 4-7, 2012, PC-94, P-371-372. ISBN: 81-88513-47-4.





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Book Chapters

- Pinki Saha Sardar, "Understanding the drug designing process through protein- protein and protein-drug interaction exploiting by spectroscopy and molecular docking approach", Recent trends in Chemical Sciences, Proceedings of the 30th UGC- sponsored Refresher course in Chemistry(30th Nov, 20th Dec, 2018) P-184-188; ISBN: 978-81-939363-1-3 Published by L. N. Satpati, Director, UGC-HRDC, University of Calcutta.

Oral Presentation At Conference

- Pinki Saha Sardar, Swagata Dasgupta, Sanjib Ghosh, "Understanding the drug designing process through Protein-Protein and Protein-Drug Interactions Exploited by Spectroscopy and Molecular Docking Studies" Oral presentation in WBSSTC sponsored state-level seminar on "Recent advances in Bio-inorganic and Bio-organic chemistry" at Bangabasi Morning College, Kolkata, on 6th May, 2017.
- Pinki Saha Sardar, Shyamal Kr Ghorai, Debi Ranjan Tripathy, Swagata Dasgupta, Sanjib Ghosh "Binding mechanism of an ESIPT probe in unsaturated fatty acid bound serum albumins", Oral presentation in 23rd. West Bengal State Science & Technology Congress(WBSSTC-2016) Presidency University, Kolkata, India on 28th – 29th February 2016 .

Poster Presentation At Conference

- Pinki Saha Sardar, Swarna Kamal Samanta, Shyamal Kr Ghorai, Sanjib Ghosh, "Understanding the modulation of "Antenna Effect" of Tb(III) ions in ternary systems consisting different microenvironments", International Seminar on "Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences" (ICBS-2020), Department of Chemistry, Surendranth College, Kolkata, 08 and 09 January,2020.
- Pinki Saha Sardar*, Sugata Samanta, Sanjib Ghosh, "Investigation on Modulation of Photophysics of an Excited State Intramolecular Proton Transfer (ESIPT) Probe in Different Microenvironments: An Insight into the Drug Binding Process", International Seminar on "Itinerary of Classical to Modern Era of Chemistry" Department of Chemistry ,The Bhawanipur Education Society College, Kolkata, November 4, 2019.
- Pinki Saha Sardar*, Swagata Dasgupta, Sanjib Ghosh, "Features of the binding phenomena of a drug molecule in the single and multityryptophan proteins: an overview by spectroscopic and molecular docking approach", "National Symposium on Emerging Trends in Chemical Sciences", 28th March, 2018 at University of Calcutta, Kolkata.





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- Pinki Saha Sardar,, Swarna Kamal Samanta, Aditya Sarkar , Arunava Roy, Ansuman Lahiri, Dhruvajyoti Chattopadhyay, Sanjib Ghosh, "Tryptophan 135 of Chandipura Virus Phosphoprotein P Plays a Vital Role in Dimerization and Complex Formation with Leader RNA: Structural Aspect by Time Resolved Anisotropy and Simulation", "Advances in Spectroscopy and Ultrafast Dynamics (ASUD-2014) December12-14, 2014,"-Indian Association for the Cultivation of Science, Kolkata, India.
- Pinki Saha Sardar, Manini Mukherjee, Shyamal Kr. Ghorai, Sugata Samanta, Sagarika Sanyal, Swarna Kamal Samanta, Sanjib Ghosh, Ipsita Haldar and Prof. Mukul Biswas, Photophysical aspects, photoinduced energy transfer/ electron transfer and theoretical studies of biomoleculesand some model systems & polymer-inorganic hybrid nano- nomposites", "Celebration of 125th year of postgraduate teaching in chemistry under Calcutta University held on 31st August, 2012, at University of Calcutta.
- Pinki Saha Sardar, Manini Mukherjee, Swarna Kamal Samanta, Shyamal Kr. Ghorai, Sagarika Sanyal, Sugata Samanta, Sanjib Ghosh, "Investigation of the interaction of an antibiotic with single and multi tryptophan proteins by steady-state and time resolved emission and docking studies", Proceedings of DAE-BRNS Eleventh Biennial Trombay Symposium on Radiation and Photochemistry (TSRP-2012), BARC, Trombay, Mumbai, 4-7 January, 2012, PC-95, P-372-373. ISBN: 81-88513-47-4.
- Manini Mukherjee, Swarna Kamal Samanta, Shyamal Kr. Ghorai, Sugata Samanta, Sagarika Sanyal, Pinki Saha Sardar, Sanjib Ghosh, Photophysical aspects, photoinduced energy transfer/electron transfer and theoretical studies of some biomolecules and some model systems, "UGC Sponsored Celebration of International Year of Chemistry 2011" held on 14th- 16th December, 2011 Department of Chemistry, Presidency University, Kolkata.

Participation In Seminars/ Webinars/ Workshops / Conferences

- State level seminar on "CAS, WBHS and Other service benefits for College employees" organized by the Women's College and Bhairab Ganguly College, Kolkata on 8th and 9th June, 2021.
- "Cosmic Quest" by Dr. Debiprasad Duari in Meet the Scientist Programme organized by the The Bhawanipur Education Society College on 4th May,2021.
- International Webinar on 'Recent Trends in Chemistry in the Fields of Medicine and Industry' organized by the Department of Chemistry, Presidency University Kolkata on 5th September, 2020.
- National Webinar on 'Discipline Specific Elective (DSE) Topics of UG Chemistry (Hons.), CBCS Syllabus, University of Calcutta'. Organized by the Dept. of Chemistry & IQAC, Maulana Azad College, Kolkata & Dept. of Chemistry & IQAC, Asutosh College, Kolkata in collaboration with UG Board of Studies, University of Calcutta on 5th & 8thAugust, 2020.





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- National webinar on “Aspects of Material Chemistry in Modern Times” organized by the Department of Chemistry, Presidency University on 21st July, 2020.
- Webinar on ‘With Covid Around How Should I ‘Live and Let Live’ (Speaker: Dr. Abhijit Chowdhury) organized by the Department of Physics, The Bhawanipur Education Society College on 17th July, 2020.
- Webinar on ‘The Enigma of Gravity: From The Apple to The Black Hole’ organised by the Department of Physics, The Bhawanipur Education Society College on 17th July, 2020.
- Frontiers in Biological Sciences (Chapter IV), an International webinar on ‘Covid -19, the current scenario’ organized by the Department of Microbiology, St. Xavier’s College, Kolkata in collaboration with IQAC on 2nd & 4th July, 2020.
- Webinar on ‘Representations in Quantum Mechanics’ organized by the Department of Chemistry and the IQAC, Narasinha Dutt College on 9th July, 2020.
- National webinar on ‘Perovskite Nanocrystals: Photoluminescence and Charge Carrier Dynamics’ organized by the Dept. of Chemistry, School of Basic and Applied Sciences, Adamas University on 4th July, 2020.
- Webinar on ‘Scope of virtual labs in UG physics and chemistry teaching’ organized by the Departments of physics, chemistry and IQAC, Sarojini Naidu College for women 30th June, 2020.
- Webinar on ‘The sky & Beyond’ organized by the Department of Mathematics, The Bhawanipur Education Society college on 23rd June, 2020.
- Webinar on “Saha and His Journey to the Stars” organized by the Department of Physics, The Bhawanipur Education Society College on 22nd June, 2020.
- International E-Conference on (E-CoExist-2020) on “Coping with Covid-19: Sustainable living in the era of Pandemic” organized by the IQAC, Belda Collge, West Bengal, India, and Bangladesh Open University, Bangladesh on 15-16 June, 2020.
- Webinar on “Artificial Intelligence, Machine Learning and Data Science” organized by the Dept. of Computer Science, The Bhawanipur Education Society College on 13th June, 2020.
- Webinar on “Pharmaceutical Chemistry, Semester IV, Chemistry course” organized by the Dept. Of Chemistry, Basanti Devi College, Kolkata in collaboration with UG Board of Studies, University of Calcutta on 6th June, 2019.





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- Online E-short term course on “Earth: Our Home” organized by the IQAC and Dept. Of Chemistry, Basanti Devi College, Kolkata from 5th to 11th June, 2020.
- Workshop on “Mentoring Techniques for Teachers” organized by the IQAC, The Bhawanipur Education Society College on 9th September, 2019.
- Workshop on “UG Chemistry Honours Practical of Semester-3 (under CBCS)” (Approved by UG Council, University of Calcutta) organized by the Department of Chemistry, Asutosh College in collaboration with UGBOS, University of Calcutta on 29th July, 2019.
- The International webinar on ‘Steps Towards Life: Chemistry!’ by Prof. Jean Marie Lehn (Awarded Nobel Prize in Chemistry (1987) Department of Chemistry, School of Basic and Applied Sciences, Adamas University on 29th May, 2020.
- “SRC in Chemistry” organized by UGC-Human Resource Development Centre, University of Calcutta at the HRDC/Academic Staff College, University College of Science and Technology, Kolkata from November 30, 2018 – December, 20, 2019.
- UGC- sponsored two day workshop on "Maths and Computation for Chemistry" on 12-13 February, 2019 organized by Bankim Sardar College in collaboration with Physical Chemistry Teachers' Forum.
- Participated workshop in One day panel discussion on “Experiments in the New Syllabus of Chemistry under CBCS” organized by Dept of Chemistry, Basanti Devi College on 10th October, 2018.
- “One day seminar on “Financial Globalization in India: Theory and Empirics” on 1st April, 2017 at the Dept. of Economics, The Bhawanipur Education Society College, Kolkata and the Bangiya Arthaniti Parishad, Kolkata.
- “116th/117th Orientation Programme” from December 19, 2016 – January, 14, 2017 at UGC-Human Resource Development Centre, University of Calcutta at the HRDC/Academic Staff College, University College of Science and Technology, Kolkata.
- “Faculty Development Programme -2015-2016”, from March 28, 2016 to April 08, 2016 at the Enterprise Development Institute and sponsored by the Dept. of Science & Technology, Govt. of India, at Enterprise Development Institute, Kolkata.
- National Level Seminar on “Higher Education in India: Road Ahead” on 19th November, 2016 organised by the Dept. of Adult, Continuing Education & Extension (DACEE), Jadavpur University, Kolkata and West Bengal College and University Teachers' Association (WBCUTA).





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- “23rd. West Bengal State Science & Technology Congress (WBSSTC-2016)” on 28 – 29 February 2016, at Presidency University, Kolkata, India.
- UGC sponsored State Level Seminar on “Environmental Pollution: Cause Impacts and Control” on 25th April, 2015 organized by the Dept. of Economics, Chemistry and Physics, The Bhawanipur Education Society College, Kolkata and Indian Association for Productivity, Quality and Reliability, Kolkata.
- UGC sponsored National Seminar on “Recent Trends in applicable Mathematics” on 24th April, 2015 organized by the Dept. of Computer Science, and Mathematics, The Bhawanipur Education Society College, Kolkata and Indian Association for Productivity, Quality and Reliability, Kolkata.
- “Emerging Issues in Global Economy, Commerce and Management: Opportunities and Challenges” on January 5, 2015 at The Bhawanipur Education Society College, Kolkata.
- “Revisiting the World Wars: Historical and Cultural Representations” on 16-17 December, 2014 organised by the Department of English and History, The Bhawanipur Education Society College, Kolkata, in collaboration with the Department of English, University of Calcutta.
- “Advances in Spectroscopy and Ultrafast Dynamics (ASUD-2014) on 12-14 December, 2014 at Indian Association for the Cultivation of Science (IACS), Kolkata, India.
- “A three day orientation programme on Quality Development Innovation in Modern Day Education”, held on 14-16 November, 2014 organized by the Faculty Development Cell as part of the Faculty Development Programme, The Bhawanipur Education Society College, Kolkata.
- “Trends in Surface Science and Related Areas” held on July 24, 2014, Department of Presidency University, Kolkata, Indian Society for Surface Science and Technology and Centre for Surface Science, Jadavpur University, Kolkata.
- “National Conference on Photosciences: Contemporary Challenges and Future Perspectives” Dec 12-14, 2013 by Indian Photobiology Society & Dept. of Chemistry, Jadavpur University, Kolkata-700032.
- “DAE-BRNS Eleventh Biennial Trombay Symposium on Radiation and Photochemistry” held on 4-7 January, 2012, Bhabha Atomic Research Centre (BARC), Trombay, Mumbai.
- “UGC sponsored Celebration of International Year of Chemistry-2011” held on 14th-15th Dec, 2011, Department of Chemistry, Presidency University, Kolkata.





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- UGC Sponsored and CSIR aided International Symposium (RTRC-2011) on “Recent Trends of Research in Chemistry” held on 31st October-1st November, 2011, Midnapore College, West Bengal.
- One-day UGC-Sponsored National Symposium on “Current Trends in Chemical Research” (Celebration of International Year of Chemistry-2011) held on June 24, 2011, Department of Chemistry, Ramkrishna Mission Residential College (Autonomous) Narendrapur, in association with the Dept. of Chemistry, Dinabandhu Andrews College, Baishnaghata, Kolkata. Workshop on “new Arena in Photosciences” held on Aug 2010, Saha Institute of Nuclear Physics, Kolkata.
- Seminar on “Frontiers in chemistry series I” held on February 2010 at St. Xavier’s College, Kolkata.
- “Chemical Analysis in the Age of Biology” held on 18th Dec, 2009, Department of Chemistry, Presidency College, Kolkata.
- “Frisky protons and silver linings: new methods in hetrocyclic synthesis” Prof. Davis Knight(Cardiff University, UK) on 22nd July ,2009, Department of Chemistry, Presidency College, Kolkata.
- “Recent Trends in Chemical and Biochemical Research” held on 23rd Dec, 2008, Department of Chemistry, Presidency College, Kolkata.
- INSA W.B State Council of Science & Technology sponsored “Present Scenario of Chemical and Biochemical Research in Kolkata” held on 18th March, 2008, Department of Chemistry, Presidency College, Kolkata.
- “Prof. P. K. Sen Memorial Seminar” held on 23rd February, 2008, Department of Chemistry, Presidency College, Kolkata.
- Seminar on “Lesions of DNA sub-units: Foundational Studies on Structure and Energetics” by Prof. Henry F. Schaefer III (Division of Computational Chemistry, Georgia University, USA) held on 17th January, 2007, Department of Chemistry, Presidency College, Kolkata.
- “DAE-BRNS Eight Biennial Trombay Symposium on Radiation and Photochemistry (TSRP-2006)” held on Jan 5-9, 2006 BARC,Trombay, Mumbai, India.
- National Seminar on “Recent Advances in Chemistry” held on Dec, 2004, Department of Chemistry, Presidency College, Kolkata.
- National Seminar on “Frontiers of Chemistry” held on Dec, 2003 at Department of Chemistry, Presidency College, Kolkata.





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- National Seminar on “Teaching Chemistry”, invited talk and panel discussion, in the Department of Chemistry, Presidency College, Calcutta on 14th Dec. 2002.
- Lecture of Prof. R. Hoffmann (novel laurite) in the “International Symposium on Spectra, Structure and Dynamics” on 12th -13th December, 2002.

Resource Person In A Seminars/ Webinars/ Workshop/ Conference

- Convenor, National webinar on ‘Addressing Issues of Climate Change and Vector- Borne Diseases like Dengue’ organized by the Department of Sociology and
- Environmental Development Committee In collaboration with IQAC, The Bhawanipur Education Society College , Kolkata on 22nd August, 2020.
- Convenor, National Webinar on ‘Exploring New Facets of Organic Synthesis: from Metal to Metal-Free Catalysis’ organised by the Department of Chemistry, The Bhawanipur Education Society College , Kolkata on 18th July, 2020.
- Convenor, Webinar on Pedagogical and Psycho-Social Challenges to The Students Amidst Covid-19 Catastrophe’ organized by the Department of Chemistry, The Bhawanipur Education Society College on 25th and 26th June, 2019.
- Convenor, Webinar on “Environment and Climate Concerns: Rethinking Education Strategies” organized by the Environmental Development Committee, The Bhawanipur Education Society College , Kolkata on 5th June, 2019.
- Convenor, One day Workshop on “Hands on Physical Chemistry Laboratory Experiments and Instrumentation: Maintenance and Use” organised by the
- Department of Chemistry, The BES College, Kolkata in collaboration with Equiptronics, Mumbai and in association with Physical Chemistry Teachers’ Forum (PCTF) of all Universities of West Bengal on July 20, 2019.
- Convenor, “Fight for a green environment – celebrating World Earth Day” organized by The Environmental Development Committee of The Bhawanipur Education Society College, in collaboration with Rotary Club of Calcutta Victoria and Rotaract Club of Calcutta Victoria on 22nd April, 2019.
- Convenor, National-Level Seminar on “Nurturing Chemistry: Bonding and Beyond” organised by the Department of Chemistry, The BES College, Kolkata on December 5, 2017.





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Reviewing Activity In International/ National Journals

- Reviewed a paper entitled “Förster resonance energy transfer mediated globular protein sensing using polyelectrolyte complex nanoparticles” submitted in “ACS Omega” Journal (Manuscript id: ao-2019-02499u) on September 2019.
- Reviewed a paper entitled “Monitoring Fluorescence Emission Behaviors of Dietary Polyphenols in Serum Albumin Environment” submitted in “New Journal of Chemistry”- communication (Manuscript id: NJ-LET-07-2019-003938.R1) on October 2019.

Invited Talk

- Delivered a talk on ‘Photochemistry’ in ‘Online faculty Exchange Programme [31.05.2021-12.06.2021]’ organized by the Department of Chemistry, Bejoy Narayan Mahavidyalaya, Itachuna, Hoogly on 3rd June & 10th June, 2021.

Association With Professional Bodies

- Life member in the library of Indian Association for the Cultivation of Science (IACS), Kolkata.

Other Notable Activities

- Active Member of the organising committee of the students’ webinar ‘Chem Voice’21’ organized by the Department of Chemistry in collaboration with IQAC, The Bhawanipur Education Society College, Kolkata on 1st August, 2020.
- Active Member of the organising committee of the webinar ‘Scientists under Scanner: When they are stepping against the Ethics of Science’ organized by the Department of Chemistry, The Bhawanipur Education Society College, Kolkata on 1st August, 2020.
- Active Member of the organising committee of the International Seminar on ‘Itinerary of Classical to Modern Era of Chemistry’ organized by the Department of Chemistry, The Bhawanipur Education Society College, Kolkata on 4th November, 2019.
- Active member of the organizing committee of one day student seminar - “Chem Voice’18” and special lecture delivered by Prof. D. C. Mukherjee, President of Indian Chemical Society, Kolkata held on 1st October, 2018.
- Sole responsibility in the preparation of annual report of the department, Class routine, documents related for the academic audit, co-ordination with the present and Ex-students of the Department and other departmental work.





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Department of Chemistry

Vision Statement

- To inspire students to envisage their views or thought through different experiments based on their practical knowledge.
- To enrich the basic knowledge in their subjects through some exchange learning process and structuring the different short experiments beyond their syllabus.
- To encourage the speculation and creative thinking of the students for the right track in the future prospects.
- To project the approach for the team work of the students for promoting the social awareness in every respects.

Pinki Saha Sardar

Signature of the
Faculty Member

Date: 01st September, 2022



**THE BHAWANIPUR
EDUCATION SOCIETY COLLEGE**