
PERSONAL INFORMATION:

Mailing Address **DR. PALASH MONDAL**
Assistant Professor (Stage -III)
Department of Chemistry (UG & PG),
Vivekananda Mahavidyalaya
Burdwan, Purba Burdwan-713 103,
West Bengal, India

Contact Number +91-9123942819

Date of Birth 24th May 1982 (24-05-1982)

Place of Birth Dhalasin, West Bengal, India

Nationality Indian

Gender Male

Marital Status Married



Dr. Palash Mondal, Ph .D
Assistant Professor of Chemistry

ACADEMIC QUALIFICATIONS:

Doctor of Philosophy (Ph.D.): Polymer and Inorganic Chemistry (Analytical): **2005-2013**

Title of the Ph.D. thesis-“*Studies on metal ion retention properties of some chemically synthesized polymers and composites.*”

Supervisor: Professor Pranesh Chowdhury

Professor, Department of Chemistry

Visva-Bharati, Santiniketan- 731 235

West Bengal, India

Master of Science (M.Sc.): Inorganic Chemistry, **2003-2005**

Department of Chemistry, Visva-Bharati, Santiniketan, West Bengal, India.

66.75% (Awarded First Class).

Bachelor of Science (B. Sc.): Pure Science, **2000- 2003**

Chemistry, Department of Chemistry, Visva-Bharati University, West Bengal, India.

68.5%, Awarded 1st Class with distinction in the subsidiary subjects (Physics & Mathematics).

PROFESSIONAL EXPERIENCE:

Department of Chemistry, Vivekananda Mahavidyalaya, Burdwan: November 2006- Present

Title: Assistant Professor

Experiences:

Taught Undergraduate Chemistry Courses (Honours & Pass): Atomic Structure and Periodic Table; Coordination Chemistry-I & II; Carbonyl and Nitrosyl Compounds; Inorganic qualitative and quantitative analysis.

Taught Postgraduate Level Chemistry Courses: Bio-inorganic Chemistry and Organometallic Chemistry-I (MCHEM-0101); Molecular Magnetism-I (MCHEM-0301); Organometallic Chemistry-II (MCHEM-0304); Molecular Magnetism-II (MCHEM-0406)

Administrative Duties: Assistant Secretary of Teachers Council, Secretary of Cooperative Credit Society Pvt. Ltd. Member of Admission Committee, Member of Result Committee, Convener of Teacher's Promotion committee, Member of Examination Committee. Convener of National/International Seminar

RESEARCH INTEREST

- Development of Organic-Inorganic Hybrid Nanomaterials
- Surface Functionalization of Metallic Nanoparticles for Analytes Sensors
- Schiff Base Transition Metal Complexes: Fluorescence Sensors for Heavy Metals and Toxic Compounds
- Density Functional Theory (DFT) .

RESEARCH EXPERTISE (During Doctoral Studies):

- Sonochemically Synthesis of Polyaniline, Polypyrrole Nanoparticles Through Micellar Technique and Then Grafted with Coupling Agents to Produce Nanocomposites by Grafting Method for Extraction of Chromium (VI).
 - Synthesis of 4-Vinyl Pyridine Grafted Silica Gel Composite and Then Complexation with Cu(II) Complex for Removal of Heavy Metal Ions (Pb^{2+} , Cd^{2+} , Hg^{2+} , Cr^{6+} etc.) from Environmental Samples.
 - Simultaneous Polymerization and Quaternization of 4-Vinyl Pyridine Without Using Any Solvent and Cross-Linking Agents.
 - Polymerization of [2-(Methacryloyloxy) Ethyl] Trimethyl Ammonium Chloride onto Nanopowder Of Silica Gel for Selective Solid Phase Extraction of Chromium(VI).
 - Synthesis of Metal Nanoparticles and Metal Oxide Nanoparticles.
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RESEARCH EXPERTISE (PRESENT):

- Surface Functionalization of Gold and Silver Nanoparticles by Organic Ligands for Colorimetric Detection of Lanthanides and Transition Elements.
 - Electrochemical Synthesis and Characterization of Transition Metal Sulphides/Oxides for Photochemical Performance.
 - Synthesis and Characterization of Cu(II), Ni(II) and Co(II) Schiff Base Complexes with Vitamin B6 and Application for Fluorescent Sensor for Toxic and Heavy Metal ions
 - Experience in Computational (DFT) Characterization of Copper Complex of 1-Amino-4-Hydroxy-9,10-Anthraquinone, 2-Amino-3-Hydroxy Anthraquinone, 2-[4-Nitrophenyl]-1H-Benzo[D]Imidazole and sodium 3-amino-2-hydroxyanthraquinone-1-sulphonate
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FELLOWSHIP/AWARDS/HONOURS:

- Received the “**RAMAN FELLOWSHIP**” for Post-Doctoral Research at **Arizona State University in USA** from University Grants Commission, Ministry of Human Resource and Development, Government of India. Year 2016-2017.
 - Junior Research Fellowship Award (Chemical Sciences) in JOINT CSIR-UGC NET (National Eligibility Test) in (June 2005) *under UGC scheme* and (December 2005) *under CSIR Scheme*, conducted by Council of Scientific and Industrial Research (CSIR), INDIA.
 - *University Merit-Cum Scholarship*. Year 2000-2003
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PROFESSIONAL MEMBERSHIP:

- Life member of **Indian Science Congress**, Kolkata, West Bengal, India. (Membership No: L26963)
 - Life member of **Professor Sukumar Maiti Polymer Award Foundation**, Kolkata, West Bengal, India. (Membership No: PSMPAF-110)
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SEMINAR/ SYMPOSIUM/CONFERENCE/WORKSHOP:

1. Presented a Poster “ *Metallic Nanoparticles Based Colorimetric Sensors for Heavy and Toxic Metal Ions from Wastewater*” **Palash Mondal**, International Seminar on “Advances In Chemical Sciences: Issues and Challenges”, (4th and 5th February, 2020), Organized by Department of Chemistry, Bidhan Chandra College, Asansol, West Bengal, India In Collaboration With Indian Chemical Society, Kolkata, West Bengal, India.

2. Presented a poster entitled "*A Dual Colorimetric Sensor of Metal Ions Based on Functionalized Silver Nanoparticles*", **Palash Mondal**, International Seminar on Elements of Periodic Table in the Chemical Avenues of Biological World Celebrating International Year of Periodic Table, (**December 17, 2019**), Organized by Department of Chemistry In Collaboration with Department of Zoology, south Calcutta Girls' College, Kolkata, West Bengal, India
3. Presented a paper entitled "Functionalized Gold Nanoparticles: A Dual Colorimetric Sensor of Metal Ions" **Palash Mondal**, Celebration of International Year of Periodic Table and National Conference on "Chemistry for Sustainable Development" (**26th and 27th November, 2019**), Organized by Department of Chemistry, SIDHO-KANHO-BIRSHA UNIVERSITY, Purullia, West Bengal India.
4. Presented a poster entitled "A Colorimetric Probe for Selective Detection of Homocysteine and Zn²⁺ ion in aqueous solution Using Silver Nanoparticles" **Palash Mondal**, National Symposium on Recent Advances in Chemistry Research" (**11th March, 2018**), Organized by Department of Chemistry, Siksha-Bhavana, Visva Bharati, Santiniketan, west Bengal, India
5. Presented a paper entitled "Functionalized gold nanoparticle based colorimetric sensors for heavy metal ions from wastewater", **Palash Mondal^{a,b}** and Jeffery L. Yarger^a, at the 2nd world International Conference on "Industrial Chemistry and Water Treatment", (**May 22-23, 2017**), Las Vegas, USA
6. Presented paper entitled "Water soluble polyaniline/gold nanocomposite: Synthesis, characterization and applications" **Palash Mondal^{a,b}** and Jeffery L. Yarger, International Conference on Healthcare Applied Science and Engineering, (**23th-24th December 2016**), Conducted by Ontario College for Research and Development, San Francisco, USA
7. Presented a poster entitled "*Studies on interaction of 2-amino-3-hydroxy-9,10 anthraquinone with cationic and anionic surfactant micelles: a model system for drug - biomembrane interaction*" **Palash Mondal^a**, Partha Sarathi Sengupta^a, Sanjay Roy^b, Partha Sarathi Guin^{*b}, National Symposium on 'Recent Advances in Chemistry Research' (**04 March 2016**), Conducted by Department of Chemistry, Visva- Bharati, Santiniketan, INDIA.
8. Presented lecture entitled "*Synthesis and characterizations of Cu(II) complex with 1-amino-4- hydroxy-9,10-anthraquinone: A alternative anthracycline anti-cancer drug*" **Palash Mondal^a**, , Partha Sarathi Sengupta^a, Partha Sarathi Guin^b, Sanjay Roy^b, 'National Seminar on Multifunctional Polymer Materials'Poly-2014, (**February 14-15, 2015**), Organized by Prof. Sukumar Maiti Polymer Award Foundation in Collaboration with Department of Chemistry, Visva-Bharati, Santiniketan, West Bengal, India.
9. Presented lecture entitled "*Spectroscopic, computational and electrochemical studies on the formation of the copper complex of 1-amino-4- hydroxy-9,10-anthraquinone and effect of it on superoxide formation by NADH dehydrogenase*", **Palash Mondal^a**, Partha Sarathi Sengupta^a, Partha Sarathi Guin^b, Sanjay Roy^b, International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences (CNDAPBS-14), (**November 01-03, 2014**), Organized by Department of Physics, Darjeeling Govt. College in Collaboration with Bose Institution & St. Joseph's College, Darjeeling, India.

10. Presented a poster entitled "*Synthesis and characterization of Cobalt(III) complex with a Schiff base ligand derived from vitamin B6*", **Palash Mondal^a** and Kalachand Mahali^b, *National Seminar on "Recent Advances in Chemistry"*, (**09 March, 2014**) Conducted by Department of Chemistry, Visva-Bharati, Santiniketan, INDIA.
 11. Presented lecture entitled "*Quaternization of poly(4-vinyl pyridine) for pre-concentration and separation of Cr(VI) from Environmental Samples*", **Palash Mondal**, K. Roy and P. Chowdhury, *UGC Sponsored National Seminar on "Water Pollution & its Recent Challenges"* (**April 29-30, 2011**) organized by Department of Chemistry, S.K.M University, Dumka- 814101, INDIA.
 12. Presented lecture entitled "*Role of Polymers in the Global Climate Change*", **Palash Mondal** and P. Chowdhury, *International Conference on "Global Climate Change"*, (**February 19-21, 2010**) conducted by CES and ISERC, Visva-Bharati, Santiniketan, INDIA.
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CONFERENCES/SEMINARS ATTENDED:

1. Short Duration Lecture Workshop on "Recent Trends in Interdisciplinary Sciences" on **February 12-14, 2018**, Organized by Integrated Science Education and Research Centre (*ISERC*), Visva-Bharati, Santiniketan, INDIA.
 2. Science Academics' Education Programmes, Lecture Workshop on 'Recent Trends in Chemistry with Reference to Teaching and Research' on **13th & 14th March 2015**, Organized by Department of Chemistry, Visva-Bharati, Santiniketan, INDIA
 3. National Seminar on "RECENT ADVANCES IN CHEMISTRY" on **9 March 2014** Organized by Department of Chemistry, Visva-Bharati, Santiniketan, INDIA
 4. Science academics' lecture workshop on "current trends in chemistry" on **17th & 18th February 2014** organized by department of chemistry, Vivekananda Mahavidyalaya, Burdwan, INDIA
 5. 21st West Bengal Science and Technology Congress-2014, **20-21 February 2014** Organizer: The University of Burdwan and West Bengal State Science and Technology Council and Department of Government of West Bengal-Science Exhibition Supervisor for College Students.
 6. UGC sponsored national seminar on "frontier in chemistry" **4th and 5th December 2013** Organized by Department of Chemistry, M.U.C. Women's College, Burdwan in Collaboration with The Department of Chemistry, Vivekananda Mahavidyalaya, Burdwan, West Bengal India.
 7. Science academics' education programmes, Lecture Workshop on 'Recent developments in Chemistry' on **29th November- 01st December 2012** Organized by Department of Chemistry, Visva-Bharati, Santiniketan, INDIA
 8. National Seminar on Current Trends in Polymer Science and Technology (Poly-2011) on **January 28 & 29, 2011** at Dr. K.P. Basu Memorial Hall, Jadavpur University, West Bengal, India.
 9. UGC Sponsored One-Day Seminar on International Year of Chemistry: Impact of Chemistry on our Lives on **March 25, 2011** Organized by Department of Chemistry, Siksha Bhavana, Visva-Bharati, Santiniketan, India.
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PUBLICATIONS FROM DOCTORAL STUDIES:

1. The role of silicon dioxide nanopowder in the synthesis of poly[2-(methacryloyloxy)-ethyl trimethylammoniumchloride]: Study of its anion selectivity, biocompatibility and antibacterial activity, P. Chowdhury, S. P. Bayen, **Palash Mondal**, and S.K Saha, *Journal of Polymer Material*, 30(3) (2013) 339-348.
 2. Sonochemical quarterisation of poly (4-Vinyl pyridine) with iodoethane and study of its sorption of Cr(VI), P. Chowdhury, K. Roy, **Palash Mondal**, S .P. Bayen and S. K. Saha, *Journal of Indian Chemical Society*, 50 (2013) 61-67.
 3. Simultaneous Polymerization and Quaternization of 4-Vinyl Pyridine, **Palash Mondal**, S. K. Saha, P. Chowdhury, *Journal of Applied Polymer Science*, 127(6) (2013) 5045-5050.
 4. Sonochemical Synthesis of Polypyrrole Salt and Study of its Cr(VI) Sorption-Desorption Properties, K. ROY^a, **Palash Mondal**^b, S.P. BAYEN^a, AND P. CHOWDHURY^{a,*}, *Journal of Macromolecular Science-Pure and Applied Chemistry*, 49 (2012) 1-5.
 5. Selective Solid Phase Extraction of Chromium(VI) using Silica Gel Immobilized 4-vinyl Pyridine/Cupric Ion Complex, **Palash Mondal**^a, S. P. Bayen^b, K. Roy^b and P. Chowdhury^{*b}, *Separation Science and Technology*, 47 (2012) 1651–1659.
 6. Synthesis of polypyrrole nanoparticles grafting with silica gel for selective binding of Cr(VI), **Palash Mondal**, K. Roy, S. P. Bayen and P. Chowdhury*, *Talanta*, 83 (2011) 1482-1486.
 7. Synthesis of polyaniline nanoparticles grafted silica gel and study of its Cr(VI) binding property, P. Chowdhury, **Palash Mondal** and K. Roy, *Journal of Applied Polymer Science*, 119 (2011) 823-829.
 8. Studies on Hg(II) ion retention properties of cross-linked graft copolymer of acrylic acid and its analytical application, P. Chowdhury*, A. Mukherjee, B. Singha, **Palash Mondal** and K. Roy, *Journal of Polymer Research*, 17 (2010) 853–860.
 9. Synthesis of cross-linked graft copolymer from [2-(methacryloxy) ethyl] trimethylammonium chloride and poly(vinyl alcohol) for removing chromium(VI) from aqueous solution, P. Chowdhury, **Palash Mondal** and K. Roy, *Polymer Bulletin*, 64 (2010) 351-362.
 10. Studies on adsorption and desorption of Cr(VI) onto chemically synthesized hydrochloric acid doped polyaniline surface, P. Chowdhury, K. Roy and **Palash Mondal**, *The Open Macromolecule Journal*, 3 (2009) 6-12.
 11. Studies on adsorption and desorption of cr(vi) onto aliquat 336 impregnated silicagel, Pranesh Chowdhury and **Palash Mondal**, *International Journal of Wastewater Treatment and Green Chemistry*, 1(1) (2009) 23-28.
 12. HCl doped polyaniline: An adsorbent for the treatment of Cr(VI) contaminated wastewater, P. Chowdhury, K. Roy and **Palash Mondal**, *Journal of Polymer Materials*, 25 (2008) 589-600.
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PUBLICATIONS AS AN INDEPENDENT INVESTIGATOR & COLLABORATIONS:

1. Colorimetric Sensors of Hg²⁺ Ion Based on Functionalized Gold and Silver Nanoparticles, Bipul Sarkar^a, and **Palash Mondal^{b*}**, *Journal of Water and Environmental Nanotechnology*, 2021, 6(1), 22-40.
2. Solubilization of sodium 3-amino-2-hydroxyanthraquinone-1-sulphonate in sodium dodecyl sulfate micelles explains its permeation in A549 human lung cancer cell, Somnath Banerjee, Sanjay Roy, Arup Datta, **Palash Mondal**, Monali Mishra, Balaji Perumalsamy, Ramasamy Thirumurugan, Dhanasekharan Dharumadurai, Saurabb Das, Partha Sarathi Guin, *Journal of the Chinese Chemical Society*, 2020, 10-26.
3. Water soluble gold-polyaniline nanocomposite: A substrate for surface enhanced Raman scattering and catalyst for dye degradation, **Palash Mondal^{a,b*}**, Chengchen Guo^a, Jeffery L. Yarger^a, *Arabian Journal of Chemistry*, 13(2), 2020, 4009-4018.
4. Colorimetric Dual Sensors of Metal Ions Based on 1,2,3-Triazole-4,5-Dicarboxylic Acid Functionalized Gold Nanoparticles, **Palash Mondal^{a,b*}**, Jeffery L. Yarger^a, *Journal of Physical Chemistry C*, 2019, 123, 33, 20459–20467.
5. A Co(II) complex of a vitamer of vitamin B6 acts as sensor of Hg²⁺ and pH in aqueous media, Nilam Sing^a, Sanjay Roy^b, Partha Sarathi Guin^b, Kalachand Mahali^{*c}, Prakash Majee^d, Sudip Kumar Mondal^{*d}, Partha Mahata^e, Partha Sarathi Sengupta^a, **Palash Mondal^{a*}**, *New Journal of Chemistry*, 2016, 40, 6396-6404.
6. Spectroscopic, Computational and Electrochemical Studies on 4-Nitrobenzimidazole and Its Interaction with Cationic Surfactant Cetyltrimethylammonium bromide, , Arup Datta^a, Sanjay Roy^a, **Palash Mondal^b**, Partha Sarathi Guin^{a,*}, *Journal of Molecular Liquid*, 2016, 219, 1058-1064.
7. Studies on the interaction of 2-amino-3-hydroxy-anthraquinone with surfactant micelles reveal its nucleation in human MDA-MB-231 breast adenocarcinoma cells, Amit Das^{a,b}, Sanjay Roy^b, **Palash Mondal^c**, Arup Datta^b, Kalachand Mahali^d, Gayathri Loganathan^e, Dhanasekaran Dharumadurai^e, Partha Sarathi Sengupta^c, Mohammad A. Akbarsha^{f,g}, Partha Sarathi Guin^{b,*}, *RSC Advances*, 2016, 6, 28200-28212.
8. 1-Amino-4-hydroxy-9,10-anthraquinone – An analogue of anthracycline anticancer drugs, interacts with DNA and induces apoptosis in human MDA-MB-231 breast adenocarcinoma cells: Evaluation of structure–activity relationship using computational spectroscopic and biochemical studies, **Palash Mondal^a**, Sanjay Roy^b, Gayathri Loganathan^c, Bitapi Mandal^d, Dhanasekaran Dharumadurai^c, Mohammad A. Akbarsha^e, Partha Sarathi Sengupta^a, Shouvik Chattopadhyay^d, Partha Sarathi Guin^{*b}, *Biochemistry and Biophysics Reports*, 2015, 4, 312–323.

9. Electrochemical synthesis of FeS₂ thin film: An effective material for peroxide sensing and terephthalic acid degradation, Sumanta Jana^a, **Palash Mondal^b**, Subhankar Tripathi^b, Anup Mondal^a, Biswajit Chakraborty*^b, *Journal of Alloys and Compounds*, **2015**, 646, 893-899.
10. Spectroscopic, computational and electrochemical studies on the formation of the copper(II) complex of 1-amino-4-hydroxy-9,10-anthraquinone, a simple analogue of the core unit of anthracycline anticancer drugs, Sanjay Roy^a, **Palash Mondal^b**, Partha Sarathi Sengupta^b, Debasis Dhak^c, Ramesh Chandra Santra^c, Saurabh Das^c, Partha Sarathi Guin^{a,*}, *Dalton Transactions*, **2015**, 44, 5428-5440.
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ANALYTIC SKILLS AND COMPUTER KNOWLEDGE:

- ✓ UV-Vis Spectrophotometer (Shimadzu-3101 PC)
 - ✓ FT-IR Spectrometer (Shimadzu 8400)
 - ✓ Thermal Analyzer (TGA, DTA)
 - ✓ Potentiostat
 - ✓ Magnetic Stirrer, pH Meter
 - ✓ Centrifuge, Sonicator
 - ✓ Fluorescence Spectrometer (Perkin-Elmer LS 55)
 - ✓ Operating Computational Programming using GAUSSIAN 09 software
 - ✓ Working knowledge related to computer MS-office, Chemdraw, ISIS Draw, Gauss view 5.1
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SPONSORED RESEARCH PROJECT AS PRINCIPAL INVESTIGATOR:

1. Project Title: “*Design and synthesis of pH sensitive polymer grafted silica nanoparticles for selective adsorption desorption of chromium(VI)*” funded by UGC, New Delhi, India [No. F. PSW-031/10-11 (ERO) dated 20.10.2010], Duration: 20-01-2011 to 19-06-2012, Sanctioned amount: Rupees **1.85 lakhs**.
2. *Spectroscopic and electrochemical studies of some chemically synthesized new Schiff base ligands and their transition metals complex: Efficient fluorescent probes for heavy metals ion*” funded by UGC, New Delhi, India [No. F. PSW-054/15-16 (ERO) dated 15-Nov-2016], Duration: 02 Years, Sanctioned amount: Rupees **05 lakhs**.

Declaration

I hereby declare that the above written particulars are true to the best of my knowledge and belief.

Palash Mondal
