Dr. Sanjib Ganguly (Ph.D)

Associate Professor (Inorganic Chemistry)

Department of Chemistry

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Dr. Sanjib Ganguly was brought up in Kolkata and his schooling was in Calcutta Boys' School. After completing his ISC Examination, he took admission in Presidency College, Kolkata (currently Presidency University) from where he received his graduation degree in Chemistry (Hons). Thereafter, he completed his post-graduation in Chemistry (Inorganic Special) from University of Calcutta (Rajabazar Science College) and qualified the CSIR NET as well as GATE (98.85 percentile) in the same year. Subsequently, he joined as a junior research fellow (JRF) at the Indian Association for the Cultivation of Science (IACS, Kolkata) from where he was promoted to senior research fellow after 2 years and finally was awarded the Ph. D degree (under the supervision of Prof. Animesh Chakravorty) He joined St. Xavier's College (Autonomous) Kolkata as a Lecturer in Chemistry in January, 2001 and is currently serving the same institute as an Associate Professor in Chemistry.

Academic Background:

Graduation: ***Presidency College, Kolkata***

Post-Graduation: ***Science College (Calcutta University)***

Ph. D.: ***IACS, Kolkata*** (under the supervision of *Prof. Animesh Chakravorty*)

Teaching Experience:

Under-graduate: 23 years

Post-graduate: 14 years

Ph. D. Course-work: 2 years

Areas of Research Interest:

Metal mediated chemical transformation

Spin-state interaction of redox sensitive coordination moieties.

Coordinated radicals: Stabilization & Electron Transfer Pathways

Transition metal complexes as anti-microbials

Research Group:

Current Ph. D student: Gopal Kanrar, Aratrika Samajdar

Current Project student: Arup Sarkar, Alok Apan Swatiputra, Debarjun Mukherjee

Past Ph. D. Student: Dr. Shuvam Pramanik, Dr. Soumitra Dinda

Research Projects Undertaken:

Granting Agency with Ref. No. & Date (Ongoing/Completed)	Title of the Project	Duration	Research scholars provided	Amount in Rs.
UGC Minor Research Grant (COMPLETED)	Hetero-polymetallated Radical Complexes: Synthetic, Structural, Spectral and Magnetic Studies	2009-2011 (1.5 years)	NIL	1,17,000
UGC Major Research Grant Reference No. & Date: F. No. 42-248/2013(SR) (COMPLETED)	Synthesis, Structure, Spectral, Theoretical Study and Exploration of Reactivity of Transition Metal Complexes with ligands containing azo group in conjunction with other function.	2013–2015 (2 years)	NIL	4, 48,000
WBDST Grant No. 683(Sanc.)/ST/P/S&T/4G-11/2014 (COMPLETED)	Mono and Polynuclear Complexes with π-acidic Oximato Function: Synthesis and Spectral, Electrochemical, Theoretical & Reactivity Study	2016–2019 (3 years)	ONE (1)	12.78,000
Intramural Grant from St. Xavier's College (Autonomous), Kolkata (COMPLETED)	Exploration of the role of inexpensive catalyst using 3d-complexes of novel redox non-innocent ligands for synthesis of C–C bonds and N-hetero-cycles.	2023-2025 (2 years)	NIL	3,00,000

Presentations in Symposia, Conferences & Workshops

1. ***Resource Person*** in the International webinar on ***"Impact of Covid-19 on education at institutions of higher education across the globe" on 25th April, 2022 organized by Central Connecticut State University, USA.***
2. Delivered an ***online Lecture*** in the ***Faculty Development Programme (FDP) on "Bioinorganic Chemistry"*** on ***30th September, 2021*** organized by the **DBT Star College Scheme**, St. Xavier's College (Autonomous), Kolkata.
3. Delivered an ***online Lecture*** on ***"Redox Principles in certain Chemical & Biochemical Reactions"*** for under-graduate students of Chemistry on ***3rd August, 2021***, organized by the Department of Chemistry, Birati College (Mrinalini Dutta Mahavidyapith)
4. ***Resource Person*** in UGC CPE funded State Level Workshop on "***Analytical Techniques for Biological Research***" on ***February 16, 2020*** at the **BRSNCollege**
5. **International Conference RACBC-2020** at **St. Xavier's College**, **Kolkata*January 10, 2020***. (***ORALPRESENTATION***)
6. ***Popular Lecture*** on **"Intriguing Metal Mediated Organic Transformation**",***February 2020*** at the **Surendranath College, Kolkata**
7. International Conference on **Modern Trends in Inorganic Chemistry (MTIC)-2019 at IIT Guwahati,*December 11, 2019***. (***ORALPRESENTATIONS***)
8. ***Popular Lecture*** on ***"Role of Periodic Table in Biological Research"*** organized by the **Royal Society of Chemistry** at the Birla Science Museum on ***November 30 2019.***
9. ***Resource Person*** in UGC CPE funded State Level Workshop on "***Refreshing Chemistry for Biologist***" on ***December 14, 2017*** at the **BRSNCollege**.
10. ***Asian Meeting on Metal Oxide Assemblies*** (AMMOA 2017), ***May 9-10, 2017*** at **IISER, Kolkata**. ***(ORALPRESENTATIONS)***

11. National Seminar on Emerging Trends in Chemistry (**ETC- 2017**), ***February 15, 2017***. (**POSTERPRESENTATION**)
12. ***International Symposium on Advanced Biological Inorganic Chemistry***, **SABIC- 2017**, ***January 7- 11, 2017*** organized jointly by IACS & NCL, Pune***(ORALPRESENTATION)***
13. ***International Symposium on Modern Trends in Inorganic Chemistry- XVI*** (MTIC- XVI), ***December 3-5, 2015*** at the **Jadavpur University**, Kolkata. ***(POSTER PRESENTATION)***
14. ***International Conference on Structural Chemistry of Molecules and Materials***, SCOMM-2014, ***November 30- December 2, 2014*** at Centre for Research in Nanoscience and Nanotechnology (CRNN), University of Calcutta. ***(POSTER PRESENTATION)***

Convener/ Coordinator in Symposia

- Convener of the Professional Scientific Development Programme**PSPD 2022** organized by St. Xavier's College (Autonomous), Kolkata, ***November 23rd - 30th, 2022***
- **Convener** of the "National Symposium on Modern Research Trends in Chemistry, **MRTC-2019**", ***February 22-23, 2019*** at the St. Xavier's College, Kolkata (jointly with the Royal Society of Chemistry, Eastern IndiaSection)
- **Convener** of the "International Symposium on Chemistry in Modern day Cancer Research,**CMCR-2019**",***January8th,2019***attheSt.Xavier'sCollege,Kolkata
- **Convener** of the "International Symposium on Chemistry & its Role in Environmental Biology, **CREB-2018**", ***June 20th, 2018*** at the St. Xavier's College,Kolkata
- **Convener** of the "NationalSymposiumonFacetsofChemistryinMaterials&Biology, **FOCMB-2018**" ***February 16- 17, 2018*** at the St. Xavier's College, Kolkata
- **Convener** of the "International Symposium on Facets of Chemistry in Biology, **FOCB- 2017**" ***January 12th, 2017*** at the St. Xavier's College,Kolkata
- **Convener** of the "National Symposiumon Facets of Chemistry in Biology, **FOCB-2016**",***February 22- 23, 2016*** at the St. Xavier's College, Kolkata

Awards & Recognitions:

1. **Bursary Grant** for attending 24th **IUCr Congress and General Assembly** in Hyderabad in 2017
2. **CSIR NET** fellowship in 1995 for pursuing Ph. D.
3. **GATE** conducted by IIT1995 (98.85 percentile, AIR: 21)

List of Research Publications in peer reviewed journals:

1. Designed Synthesis of Amino-Azo-Quinoline and Their Nickel (II) Complexes: Molecular Structure, Electrochemistry and an Insight Into Their In Vitro Anti-Cancer Activities: Srijita Naskar, Koushik Sarkar, Supriyo Halder, Bidisha Chatterjee, Debjeet Chakraborty, Arka Laha, Rahul Sharma, Arup Kumar Mitra, Kausikisankar Pramanik* and **Sanjib Ganguly***
   Chemistry & Biodiversity, 2025, 22 (6), e202402436. (**Impact Factor: 2.5**)
2. Dehydrogenative Coupling for Synthesis of Quinazolin-4(3H)-ones via Tandem Reaction using Ruthenium(II)-Phenyl-Azo-Naphthaldoxime: An Experimental and Theoretical Investigation: Supriyo Halder, Srijita Naskar, Debashis Jana, Gopal Kanrar, Shyama Charan Mandal, Subhadip Roy, Nishchal Bharadwaj, Kausikisankar Pramanik* and **Sanjib Ganguly***
   Chemistry–An Asian Journal, 2025, 20 (4), e202401278. (**Impact Factor: 3.3**)
3. N–N hydrazonyl bond cleavage in benzothiazolyl-hydrazino-phenathrenequinone mediated by ruthenium (II) via an anion radical intermediate: Gopal Kanrar, Supriyo Halder, Srijita Naskar, Debashis Jana, Arup Sarkar, Bikash Kumar Panda, Soumitra Dinda, Kausikisankar Pramanik* and **Sanjib Ganguly***
   Journal of Molecular Structure, 2024, 1314, 138720. (**Impact Factor: 4.7**)
4. Coordinatively fluxional diazo-based organo-electrocatalyst for conversion of CO2 to C2 and C3 products: Nidhi Kumari, Supriyo Halder, Srijita Naskar, **Sanjib Ganguly**, Kausikisankar Pramanik, Farzaneh Yari, Adrian Dorniak, Wolfgang Schöfberger, Soumyajit Roy*
   Materials Today Catalysis, 2024, 5, 100049
5. Halogen Bonding in Stereoselective Metal Chloride (M–Cl) Bond Activation and Transformation to Metal Triiodide ($M–I_3$): Soumitra Dinda, Debashis Jana, Rosa M Gomila, Antonio Frontera, Subhadip Roy, Sarat Chandra Patra, Kausikisankar Pramanik* and **Sanjib Ganguly***
   Crystal Growth & Design, 2024, 24 (8), 3342-3354. (**Impact Factor: 3.4**)

6. Ruthenium complexes of redox non-innocent aryl-azo-oximes for catalytic α-alkylation of ketones and synthesis of 2-substituted quinolones: S Halder, S Naskar, D Jana, G Kanrar, K Pramanik* and **Sanjib Ganguly***

   New Journal of Chemistry, 2024, 48 (18), 8181-8194. (**Impact Factor: 3.925**)
7. Role of ligand disposition and oxime… oximato hydrogen bonding upon redox non-innocent character of rhodium (III) phenylazooximates: S. Naskar, S. Halder, G. Kanrar, D. Jana, S. Dinda, K. Pramanik* and **Sanjib Ganguly***

   ***Polyhedron*,2023**, 235, 116342. (**Impact Factor: 2.975**)
8. Electrocatalytic Nitrogen Reduction Reaction (NRR) A Probable Alternative to Haber-Bosch Process (HBP): J. Basu and **Sanjib Ganguly***

   ***Resonance*, 2023**, 28, 279-291. (**Impact Factor: 0.21**)
9. Molecular and Electronic Structures, Spectra, Electrochemistry and Anti-bacterial Efficacy of Novel Heterocyclic Hydrazones of Phenanthrenequinone and Their Nickel (II) Complexes: S. Dinda, D. Maitra, B. Roy, P. Khan, A. Samajdar, Arup Kumar Mitra, S. Roy, A. Mondal, K. Pramanik* and **Sanjib Ganguly***

   ***ChemistrySelect*,2022**, (34), e202202151 (**Impact Factor: 2.307**)
10. Azo-oximate metal-carbonyl to metallocarboxylic acid via the intermediate Ir(iii) radical congener: quest for co-ligand driven stability of open- and closed-shell complexes:

    S.Dinda, S.Pramanik, J.Basu, S. C. Patra, K.Pramanik* and **Sanjib Ganguly***

    ***Dalton Trans.*, 2022**, 51, 10121-10135. (**Impact Factor: 4.569**)
11. A perspective on exploration of synthetic reaction pathways of stable metallocarboxylic acids and structural features of MCOOH moiety: S. Pal, S. Dinda, **Sanjib Ganguly***

    ***J. Organomet. Chem.*, 2022**, 968-969, 122355 (**Impact Factor: 2.345**)
12. Diarylazooxime complex of cobalt(III): synthesis, structure, ligand redox, DFT calculations and spectral characteristics: Soumitra Dinda, Koushik Sarkar, Bikash Kumar Panda, K.Pramanik* & **Sanjib Ganguly***

    ***Transition Metal Chemistry*, 2022**, 47, 31–38 (**Impact Factor: 2.266**)
13. An insight into the coordination specificity of polyaromatic hydrocarbons (PAHs) grafted hydrazones towards rhodium(III): S. Dinda, S. Naskar, S. Roy, K. Pramanik* and **Sanjib Ganguly***

    ***Polyhedron*2021**, *205*, 115318 (**Impact Factor: 2.975**)
14. Coligand driven diverse organometallation in benzothiazolyl-hydrazone derivatized pyrene: ortho vs. peri C–H activation

    S.Dinda, S. C. Patra, S. Roy, S. Halder, T.Weyhermüller, K.Pramanik*, **Sanjib Ganguly***

    ***New J. Chem.* 2020**, 44, 1407-1417**(Impact Factor: 3.925)**
15. Ruthenocycles of benzothiazolyl and pyridyl hydrazones with ancillary PAHs: Synthesis, structure, electrochemistry and antimicrobial activity

S.Dinda, T. Sultana, S. Sultana, S. C. Patra, A. Mitra, S. Roy, K.Pramanik*, **Sanjib Ganguly***

***New J. Chem.* 2020**, 44, 11022-11034 **(Impact Factor: 3.925)**

16. Rhodium assisted peri-C–H activation in benzothiazolyl-hydrazone derivatized pyrene

    S Dinda, SC Patra, T Samanta, A Basu, K Pramanik*,**Sanjib Ganguly***

    ***Polyhedron*2020,**179, 114352**(Impact Factor: 2.975)**

17. Polyaromatic hydrocarbon derivatized azo-oximes of cobalt (iii) for the ligand-redox controlled electrocatalytic oxygen reduction reaction

    S Dinda, S Roy, SC Patra, S Bhandary, K Pramanik*, **Sanjib Ganguly***

    ***New J. Chem.*2020**, 44, 3737-3744**(Impact Factor: 3.925)**

18. Rhodium(III) complex with pyrene-pyridyl-hydrazone: synthesis, structure, ligand redox, spectral characterization and DFTcalculation.

    ***J. Chem. Sci.* 2019**, 131(3), 24 (doi.org/10.1007/s12039-019-1598-5)**(Impact Factor: 2.150)**

    SoumitraDinda, Sarat Chandra Patra and **Sanjib Ganguly***

19. Synthesis X ── ray crystal structure,DFTcalculations,spectroscopiccharacterizationand redox behaviourof a rhodium(III) complex of an anthracene–pyridylhydrazone ligand.

    ***TransitionMet.Chem.*2019**,44,0000(doi.org/10.1007/s11243-018-00300-4)(**Impact Factor: 2.266**)

    SoumitraDinda, Sarat Chandra Patra, Bikash Kumar Panda and **Sanjib Ganguly***

20. Ambient-Stable Bis-Azoaromatic-Centred Diradical [(L•)M(L•)] Complexes of Rhodium(III): Synthesis, Structure, Redox and Spin-SpinInteraction

    ***Inorg. Chem.* 2017**, 56(21), 12764-12774. **(Impact Factor: 5.436)**

    Sima Roy, ShuvamPramanik, Sarat Chandra Patra, Basab Adhikari, Abhishake Mondal,

    Sanjib Ganguly and KausikisankarPramanik*

21. Luminescent Closed Shell Nickel(II) Pyridyl-azo-oximates and the Open Shell Anion Radical Congener: Molecular and Electronic Structure, Ligand Redox and Biological Activity

    New. J. Chem., **2017**, *41*, 4157-4164. **(Impact Factor: 3.925)**

    ShuvamPramanik, Suhana Dutta, Sima Roy, SoumitraDinda, Tapas Ghorui, Arup Kumar Mitra, KausikisankarPramanik and **SanjibGanguly***

22. Iridium(III) Mediated Reductive Transformation of Closed-Shell Azo-oxime to Open-Shell Azo-imine Radical Anion: Molecular and Electronic Structure, Electron Transfer and OptoelectronicProperties"

Inorg. Chem., **2016**, *55(4)*, 1461-1468. **(Impact Factor: 5.436)**

ShuvamPramanik, SimaRoy,TapasGhorui, KausikisankarPramanik and **Sanjib Ganguly***

23. Molecular and electronic structure of nonradical homoleptic pyridyl-azo-oxime complexes of cobalt(III) and the azo-oxime anion radical congener: an experimental and theoretical investigation

Dalton Trans., **2014**, *43*, 5317. **(Impact Factor: 4.569)**

ShuvamPramanik, SimaRoy,TapasGhorui, **Sanjib Ganguly***and KausikisankarPramanik

24. Oximato Bridged Hetero-binuclear $Ru^{III}M^{I}$ Complexes (M= Cu,Ag)

J. Ind. Chem. Soc., **2012**, *89*, 107. **(Impact Factor: 0.729)**

Sanjib Ganguly

25. Trinuclear Ru^{III}-Mn^{II}-Ru^{III} Complexes incorporating azo-oximefunction

J. Ind. Chem. Soc., **2010**, *87*, 1299. **(Impact Factor: 0.729)**

Indranil Bhattacharyya and **Sanjib Ganguly***

26. Oximatobridged$Rh^{III}M^{II}$and$Rh^{III}M^{I}$species(M^{II}=Mn,Co,Ni;M^{I}=Cu,Ag)

J. Chem. Sci., **2008**, *120*, 87. **(Impact Factor: 2.150)**

Indranil Bhattacharyya, **Sanjib Ganguly**, Bikash Kumar Panda and AnimeshChakravorty.

27. Planar four coordinate nickel(II) complexes of tridentate ligands incorporating azo,- oxime-carboxyl chelation: synthesis andstructure.

J. Ind. Chem. Soc., **2005**, *82*, 898.

Sanjib Ganguly and Soma Karmakar

28. Azo-oxime-carboxylates of bivalentplatinum

J. Ind. Chem. Soc., **2004**, *81*, 327.

Sanjib Ganguly

29. A very rare mononuclear nickel(II) species bonded via oxygen atom of oximato function using pyridyl-azo-oxime type ofligands

J. Ind. Chem. Soc., **2002**, *79*, 271.

Chandan Kumar Pal and **Sanjib Ganguly***

30. Synthesis, structure and reactivity of palladatedazo-oxime-carboxylates.

Indian J. Chem., **2001**, *40A*, 90.

Chandan Kumar Pal, Soma Mukherjee (Karmakar) and **Sanjib Ganguly***

31. Synthesis and Structure of Silver Azo-oximates. Hydrogen Bonding and Non-bonded Ag…AgInteractions.

    Inorg. Chem., **2000**, *39*, 2954. **(Impact Factor: 5.436)**

    Sanjib Ganguly, Surajit Chattopadhyay, Chittaranjan Sinha and Animesh Chakravorty

32. Regiospecific Oximato-O coordination at the oxygen site: Ligand Design and Low-spin Mn^{II} and $Fe^{II/III}$Species.

    Inorg. Chem. **1999**, *38*, 5984. **(Impact Factor: 5.436)**

    Sanjib Ganguly, Soma Karmakar, Chandan Kumar Pal and Animesh Chakravorty

33. A New Family of AcylrhodiumOrganometallics.

    Organometallics, **1999**, *18*, 1486. **(Impact Factor: 3.837)**

    Sujay Pattanayak, Swarup Chattopadhyay, Kaushik Ghosh, **Sanjib Ganguly**, Prasanta Ghosh and Animesh Chakravorty.

34. Synthesis and structural studies of cobalt complexes of tridentate ligands incorporating azo, oxime and carboxylatefunctions.

    Indian J. Chem., **1999**, *38A*, 335.

    Sanjib Ganguly and Soma Karmakar

35. Synthesis and structure of bis azooximes of dichlororhodium(III): the oxime…oximato OH…O bridge and effect of itsdeprotonation.

    J. Chem. Soc., Dalton Trans. **1998**, 461. **(Impact Factor: 4.569)**

    Sanjib Ganguly, VadiveluManivannan and Animesh Chakravorty.

36. Azo oximes of bi- and tri-valentNickel

    J. Chem. Soc., Dalton Trans. **1997**, 585. **(Impact Factor: 4.569)**

    Soma Karmakar, SuranjanBhanja Chowdhury, **Sanjib Ganguly**and Animesh Chakravorty

37. First examples of carboxyl-bonded low-spin Mn(III)complexes

    Inorg. Chem., **1997**, *36*, 116. **(Impact Factor: 5.436)**

    Sanjib Ganguly, Soma Karmakar and Animesh Chakravorty