Curriculum Vitaé

Dr. Akram Ali

Assiatant Professor (Level-11)
Department of Chemistry
C.M.P. PG College, University of Allahabad,
Prayagraj Uttar Pradesh, India
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Current Position:

Assiatant Professor in Department of Chemistry at CMP PG College, University of Allahabad, Prayagraj UP 211002.

START-UP GRANT Project From UGC:

Title of the Project: "Reactivity and Catalytic Aspects of Transition Metal Complexes of Aminophenol-Based Redox-Active Ligands"

Educational Qualifications

Ph.D. (Chemistry) (2017)	**Indian Institute of Technology Kanpur, India**
M.Sc. (Chemistry) (2009)	**CCS University Meerut, Meerut, India**
B. Sc. (2007)	**CCS University Meerut, Meerut, India**

Awards and Honors

- CSIR-Junior Research Fellowship in 2010
- CSIR-Senior Research Fellowship in 2013
- GATE qualified in 2012, Rank (AIR-156), 98.4 %
- IITK Best Student Tutor Award in 2013
- IITK-International Conference Travel Grant in 2015
- IITK International Conference travel Grant in 2015
- 2nd Prize Winner in 100 m Race in Annual Sports Meet, CMP College on 11th Jan. 2019.

Research Experience

Experience in synthesis of Transition Metal Complexes of Aminophenol-Based Redox-Active Ligands and their reactivity and Characterization by using different techniques such as: IR, UV-Vis, Mass spectroscopy, Single Crystal X-Ray, PXRD, EPR, Cyclic-Voltammetry, Magnetic Properties and Mössbauer.

TECHNICAL SKILLS

1. Knowledge of solving crystal structure.
2. Diamond program (for showing secondary interaction),
3. Operating of glove box.
4. Working knowledge of cyclic voltammetry.
5. Operating of magnetic moment machine and plotting of Magnetic data.
6. Operating of Mössabauer machine and knowledge of simulation of mössabauer data
7. Knowledge of graphics, Simulations such as Mass, EPR, PXRD etc.

Teaching Experience

5 years' experience at under-graduate (UG) and post- graduate (PG) levels. Taught Courses of Organic and Inorganic Chemistry including Chemical Bonding in Organic and Inorganic Chemistry, Name Reactions and their Synthetic Application, Oxidation and Oxidizing Agents, Organic Reaction Mechanism, Coordination Chemistry, Spectroscopic Techniques for structural elucidation of Inorganic compounds, Bio-Inorganic Chemistry, etc.

- Assisted B. Tech. 1st year General Chemistry Lab as a tutor for Ist semester (2012-2013) in Department of Chemistry, Indian Institute of Technology Kanpur, India.
- Assisted B. Tech. 1st year General Chemistry Theory as a tutor for IInd semester (2012-2013) in Department of Chemistry, Indian Institute of Technology Kanpur, India.
- Assisted B. Tech. 1st year General Chemistry Lab as a tutor for Ist semester (2013-2014) in Department of Chemistry, Indian Institute of Technology Kanpur, India.

Publications

1. **Akram Ali,** Suman K. Barman and R. N. Mukherjee "Palladium (II) Complex of a Redox-Active Amidophenolate-based *O,N,S,N* Ligand. Its Mono- and Di-cation, and Reactivity with PPh_3." *Inorg. Chem.* **2015**, *54*, 5182-5194. **(Impact Factor 5.436)**

2. **Akram Ali,** Arunava Sengupta and R. N.Mukherjee "Palladium(II) complexes of a redox-active *o*-aminophenolate-based *O,N,S,N* ligand. Proof-of-concept of hemilability in reactivity with PPh_3 providing *ONNP* and *ONSP* coordination." *J. Indian Chem. Soc.* **2015**, *92*, 1981-1991.

3. **Akram Ali,** Debanjan Dhar, Suman K. Barman, Francese Lloret and R. N. Mukherjee "A Nickel(II) Complex of a Hexadentate Ligand with Two *o*-Iminosemiquinonato(1–) π-Radical Units and Its Monocation and Dication." *Inorg. Chem.* **2016**, *55*, 5759–5771. **(Impact Factor 5.436)**

4. Sartaj Tabassum, Musheer Ahmad, Mohd Afzal, Mehavsh zaki, Md. Serajul Haque faizi, **Akram Ali** "Synthesis and crystal structure determination of cobalt(II) mixed-ligand complex containing 1,10-phenanthroline and 5-(2-carboxybenzyloxy) isophthalic acid: Their biological evaluation viz. DNA/protein binding profile, pBR322 DNA cleavage activity." *Inorg. Chimica Acta.* **2016**, *451*, 216-226. **(Impact Factor 3.118)**

5. Md. Serajul Haque faizi, Musheer Ahmad, **Akram Ali,** Vodim A. Potaskalov "Crystal structure of 5-[(4-carboxybenzyl)oxy]isophthalic acid." *Acta Cryst.* **2016**, *E72,* 1219–1222.

6. Md. Serajul Haque faizi, **Akram Ali,** Vodim A. Potaskalov "Crystal structure of 9,9′-{(1E,1′E)-[1,4-phenylenebis(azanylylidene)] bis(methanylylidene)} bis(2,3,6,7-tetrahydro-1H,5H-pyrido[3,2,1-ij]quinolin-8-ol)." *Acta Cryst.* **2016**, *E72,* 1366–1369.

7. Md. Serajul Haque faizi, **Akram Ali,** Vodim A. Potaskalov "Crystal structure of (2,2′-bipyridine-κ^2N,N′)bis(3,5-di-tert-butyl-o-benzoquinonato-κ^2O,O′)ruthenium(II)." *Acta Cryst.* **2017**, *E73*, 459–462.

8. Md. S. H. Faizi, S. Kamaal, **Akram Ali,** M. Ahmad, T. Iskenderov " Crystal structure of 4-[(3-methoxy-2- oxidobenzylidene)azaniumyl]benzoicacid methanol monosolvate.". *Acta Cryst.* **2018**, *E74*, 1847–1850.

9. Ravindra Singh, **Akram Ali**, Md. Serajul Haque Faizi, Roona Singh, Turganbay S Iskenderov and Necmi Dege **(2019)** "Dichlorido{N,N,N'-trimethyl-N'(1H-pyrazol-1-yl-κ N2)methyl]ethane-1,2-diamine-κ^2N,N'}copper(II) methanol monosolvate." IUCr Data 2019, 4, x190692.

10. Arjita Srivastava, Pravin K. Singh, **Akram Ali**, Praveen P. Singh and Vishal Srivastava, "*Recent applications of Rose Bengal catalysis in N-heterocycles: a short review.*" *RSC Adv.*, **2020**, 10, 39495-39508. **(Impact Factor 4.036)**

11. **Akram Ali,** Arunava Sengupta, Frances Lloret and R. N. Mukherjee Switchover from $Ni^{II}N_2O_2$ to $Ni^{II}N_2O_2S_2$ coordination triggered by the redox behaviour of a non-innocent 2-aminophenolate ligand." *J. Chem. Sci.* 2021 133:110
(Impact Factor 2.15)
12. **Akram Ali,** Saumitra Bhowmik, Suman K. Barman, Narottam Mukhopadhyay, Christine E. Schiewer,Francesc Lloret,Franc Meyer, and Rabindranath Mukherjee "Iron(III) Complexes of a Hexadentate Thioether-Appended 2-Aminophenol Ligand. Redox-Driven Spin State Switch Over." *Inorg. Chem*. 2022, 61, 13, 5292-5308 **(Impact Factor 5.436)**

13. **Akram Ali,** Saumitra Bhowmik, Arunava Sengupta, Narottam Mukhopadhyay and R. N. Mukherjee "Controlled C-H bond activationleads to orthometalation and ring-hydroxylation in Ni(II) and Pd(II) complexes of a common tridentate azophenyl-salicylaldimine ligand." Inorganica Chimica Acta 538 (2022), 120960. **(Impact Factor 3.118)**

14. Manoj Kumar, Seraj Ahmad and **Akram Ali*** "Catalytic reactivity supported by redox-active ligands framing." Russian journal of Inorganic Chemistry, 2022, 67, 1573-1582 **(Impact Factor 2.1)**

15. Aysha Fatima, **Akram Ali**, Ramya Rajan, Indresh Verma, S.Muthu, Nazia Siddiqui, Pankaj Garg and Saleem Javed, "Experimental Spectroscopy, DFT, Molecular Docking and Molecular Dynamics Simulation Investigations on m-Phenylenediamine (Monomer and Trimer)", Polycyclic Aromatic Compounds, 2022. DOI: https://doi.org/10.1080/10406638.2022.2150655 **(Impact Factor 2.195)**

16. Seraj Ahmad, Manoj Kumar, Akanksha Yadav, Vimal Kumar, Ashok Kumar Ranjan and **Akram Ali*** "Synthesis, Structure and Redox Property of Catecholato-Based Ruthenium Complex", Vijnana Parishad Anusandhan Ptrika-Vol.-65, No. 3-4, July & October, 2022. ISSN No. 0505-5806

17. Aysha Fatima, Ghazala Khanum, Sanjay Kumar Srivastava, Prabuddha Bhattacharya, **Akram Ali**, Himanshu Arora, Nazia Siddiqui and Saleem Javed, "Exploring Quantum Computational, Molecular Docking and molecular dynamics simulation with MMGBSA studies of ethyl-2-amino-4-methylthiophene-3-carboxylate", Journal

of Biomolecular Structure and Dyhnamics, 2023. https://doi.org/10.1080/07391102.2023.2180667 **(Impact Factor 5.235)**

18. Pawanjeet Kaur, Indresh Verma, Ghazala Khanum, **Akram Ali**, Nazia Siddiqui, Saleem Javed and Himanshu Arora, "Exploration of Experimental, Theoretical, Molecular Docking, and Electronic Excitation Studies of Carboxylate-Appended (2-Pyridyl)Alkylamine Ligand", Polycyclic Aromatic Compounds, 2023. DOI: https://doi.org/10.1080/10406638.2023.2224490 **(Impact Factor 2.195)**

19. Seraj Ahmad, Manoj Kumar, Saleem Javed, Jadveer Singh, Himanshu Arora and **Akram Ali*** "Mononuclear Nickel(II) and Dinuclear Palladium(II) Complexes of a Redox-Active Iminophenolate-Based *O,O,N,N,S,S* Ligand – experimental and theoretical vision", Journal of Molecular Structure, 2023. https://doi.org/10.1016/j.molstruc.2023.136181 (Just Accepted) **(Impact Factor 3.8)**

20. **Akram Ali,** Suman K. Barman and R. N. Mukherjee "Neutral, Cationic, and Anionic Cobalt (III) Complexes Stabilized by a Hexadentate Thioether-Appended *o*-Amidophenolate and *o*-Iminobenzosemiquinonate π-Radical in N_2,O_2,S_2 Donor Environment and Effect of Oxygen on C-S Bond Cleavage." (This manuscript is under preparation)

Symposia Proceeding

1. Presented a paper on "Effect of oxidation level on the geometry of Ni(II) complex with redox-active ligand" at National Conference on 'Green Technology: A Roadmap for Sustainable Development' organized by Department of Chemistry, HNB Govt.PG college, Prayagraj. (23rd -24th Feb, 2020)

2. Presented a poster titled "Ligand Radical-Coordinated Palladium (II) Complexes and their Reactivity" at 107th Indian Science Congress, held at University of Agricultural Sciences, Bengaluru. (3rd Jan-7th Jan 2020).

3. Presented a paper in International Conference on Interrelation between Physics and Chemistry--Physichem-2019, which Jointly organized by Chemistry and Physics Dept., Nehru Gram Bharti (Deemed to be University), Prayagraj. (4th November 2019)

4. Delivered a Lecture at National Seminar on Innovative Frontiers in Applied Sciences, organized by Chemical Society, Dept. of Chemistry. CMP PG College in collaboration with Vigyan Parishad Prayag (26th-28th September 2019).

5. Delivered an oral presentation at National Seminar on Eco Centric Development and Smart City, jointly organized by CMP Degree College and India Think Council, New Delhi, held at D.D. Pant Auditorium Department of Botany (AU) Prayagraj. (1st September, 2019).

6. Delivered an oral presentation titled **"Reactivity of Palladium (II) Complexes towards Toluidine"** at 2nd International Conference on Chemistry, Industry and Environment held at Department of Applied Chemistry, Aligarh Muslim University (18th – 19th February, 2019).

7. Delivered a lecture on "Modification in General Chemistry" in a departmental seminar which organized by department of chemistry CMP college. (02nd Nov. 2018).

8. Delivered a Lecture & As Organizing secretary at One Day National Seminar on "Present scenario of Environmental Challenges & Issues" held at Chemistry Dept. CMP College University of Allahabad. (16th Dec. 2018).

9. Presented a poster titled "Ligand Radical-Cordinated Palladium (II) Complexes and their Reactivity" at *5th Asian Conference on Coordination Chemistry*, held at Hong Kong (12–16th July, 2015).

10. Presented a poster titled "Ligand Radical-Cordinated Palladium (II) Complexes and their Reactivity" at Modern Trends in Inorganic Chemistry –XVI, held at Department of chemistry, Jadavpur University (03–05th December, 2015).

11. Attend Chemistfest, In – House Symposium, in the Department of Chemistery, IIT Kanpur (16th April, 2011).

12. Attend a conference, Celebration of Chemistry in the Department of Chemistery, IIT Kanpur (03–05th December, 2011).

13. Attend a Mini-symposium in Honour of Prof, S. Sarkar in the Department of Chemistery, IIT Kanpur (02nd March, 2012).

14. Attend Chemistfest, In – House Symposium, in the Department of Chemistery, IIT Kanpur (Ist September, 2012).

15. Attend a International Collaborative and Cooperative Chemistry Symposium in the IIT Kanpur (24–26th October, 2013).

16. Attend a international conference on Dynamics of Complex Chemical and Biological Systems (DCCBS-14) in the Department of Chemistery, IIT Kanpur (13–15th February, 2014).

17. Attend a conference on Complex Chemical System in the Department of Chemistery, IIT Kanpur (02-03 November, 2015).

18. Attend a RSC-IIT Kanpur Symposium in Chemical Science in the Department of Chemistery, IIT Kanpur (23rd November, 2015).

19. Attend a workshop on Column Structure and Chemistry (Merck) and Mass Spectrometry (Agilent) in the Department of Chemistery, IIT Kanpur (2nd November, 2015)

Book Chapters

01. Srivastava, A. and **Ali, A.** (2019). Ground Water depletion. *In*: Environmental Challenges And Issues In Present Scenario. (edited by P. K. Singh, A. Srivastava, V. Srivastava, R. Kumar.). pp 129-133. Chemical Society, CMP College, Prayagraj, Firstprint Publications. ISBN No. 978-93-88018-18-0.
02. Ali, A. (2020). Mechanism and spectroscopy analysis of the reversible binding of nitric oxide to aquated iron (II). An undergraduate textbook reaction revisited. *In*: Advances in Chemical and Applied Sciences- Vol-III (edited by A.K. Shukla, A. Pandey and D. Srivastava). pp 200-205. Chemical Society, CMP College, Prayagraj, Firstprint Publications. ISBN: 978-93-88018-19-7.

03. **Ali, A.** and Tripathi, P. "Red Chillies as an antioxidant" In Chem-World-Vol. IV & V, pg-13-16 published by Department of Chemistry, C.M.P. Degree College, Prayagraj.

04. Srivastava, A.; Singh, P.K.; **Ali, A**. and Srivastava, V. (2021). Book chapter entitled with "Hybrid materials and their applications" in book entitled with "Versatile Solicitations of Material Science in Diverse Science Fields" published by NOVA SCIENCE PUBLISHERS, INC, USA. (2021). ISBN No. 978-1-53619-763-1.

05. Kumar, M.; Ahmad, S. and **Ali, A.** (2022). Book chapter entitled with "Recent Studies on Biological Activity of Transition Metal Complexes" in "Insights in Chemistry and Applied Sciences", published by Firstprint Publication, Tagore Town, Prayagraj. (2022). ISBN No. 978-93-93647-07-8.

06. Kumar, M.; Ahmad, S. and **Ali, A.** (2022). Book Chapter entitled with "Photo-Redox Catalysis in Chemistry" in Book entitled with "CHEM WORLD" published by First print Publication, Tagore Town, Prayagraj (2022). ISBN No. 978-93-93647-09-2

07. Tiwari, S.; Kumar, M.; Ahmad, S., **Ali, A.** and Srivastava, V. (2023). Book Chapter entitled with "Nanomaterials in Organic Synthesis" in Book entitled with "Materials Science: A field of Diverse Industrial Applications" published by Bentham Science Publishers Singapore (2023). ISBN No.978-981-5051-24-7

Memberships

1. Life Member, Indian Science Congress Association.
2. Member, AUCCTA
3. Appointed as Member of College Internal Complaints Committee.
4. Appointed as Member of Proctorial Board as an Assistant Proctor
5. Appointed as Member of College NAAC Task Force
6. Appointed as Member of DBT Star College Scheme

Faculty Development Programs

1. 120th Orientation Program of UGC-HRDC held during 25th July-21st August 2018

2. UGC-HRDC XXIV Refresher Course in Chemistry at Department of Chemistry, University of Allahabad from 10th-23rd December 2019

3. Participated in the e-Faculty Development Program on **The Role of Advanced Materials & Nanotechnology in Present Scenario,** which organized by Vemana Institute of Technology, Bengaluru. (from 22nd to 26th June 2020)

4. Participated in the e-Faculty Development Program Cum Workshop on **Waste to Bioenergy,** which jointly organized by Department of Life Sciences and Research, Sharda University, Uttar Pradesh and Department of Agricultural Engineering, Maharashtra Institute of Technology, Aurangabad. (From June 28 to July 4, 2020)

5. Participated in the e-Faculty Development Program on Academic Leadership by Centre for Academic Leadership and Education Management (CALEM) Aligarh Muslim University, Aligarh. (From March 24 to March 31, 2021)

6. Participated in Five Days Workshop on NAAC organized by University of Allahabad, Prayagraj. (From August 23 to August 27, 2021)

7. Participated in NAAC orientation workshop, organized by CMP College, University of Allahabad, Prayagraj. (From January 09 to January 13, 2023)

8. Participated in UGC Sponsored refresher course organized by UGC-HRDC center, Jai NarainVyas University, Jodhpur, Rajasthan. (From January 27 to February 10, 2023)

Editor and Associate Editor of Books

Advances in Chemical and Applied Sciences-Vol.II. (2019) Chemical Society, CMP	Edited Book	**Editors:** Mridula Tripathi, Santosh Srivastava, Roli Srivastava. **Associate Editors:-** A.K. Shukla, Archana Pandey, Sunanda Das, Babita Agrawal, Arti Gupta, Dharmendra Kumar Sahu, Monika Singh, Ashok K. Ranjan, **Akram Ali,** Arjita Srivastava	First Print Publications-Prayagraj;	978-81-9350520-5.

Research Scholars

Mr. Seraj Ahmad Supervisor: Dr. Akram Ali	Inorganic Chemistry	Transition metal complexes of redox active ligands: molecular and electronic structures	M	CRET-19	GEN	05/03/2020
Mr. Manoj Kumar Supervisor: Dr. Akram Ali	Inorganic Chemistry	Bioinspired coordination chemistry of transition metal complexes with redox-active ligands	M	CRET-19	OBC	26/05/2020