CURRICULUM VITAE

Dr. Sajad Ahmad Bhat
Ph.D., JRF (NET), SET, Gold Medalist
Department of Chemistry, University of Kashmir, Hazratbal, Srinagar-190006, J & K India
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Education:

2013-2017	Ph.D. in Chemistry, University of Kashmir, Hazratbal Srinagar, India. Title: "***Electrocatalytic and Electroanalytic Investigations on Graphene oxide modified electrodes.***" **H-Index: 10, i10-index: 13, Citations: 475** Supervisor: **Prof**. (**Dr). Mohsin Ahmad Bhat** Ph.D. Examiner: **Prof. (Dr.) Ashok K. Ganguly** (Professor, Department of Material Science and Engineering, IIT Delhi, Director ISER Berhampur.)
2009-2010	M.Sc. in Chemistry **(Gold Medalist)**, University of Kashmir, Srinagar-190006, J &K, India. Course work pertaining to Organic, Inorganic, Physical and Analytical Chemistry specialization in Physical Chemistry with the focus on courses-Quantum Chemistry, Statistical Thermodynamics, Electrochemistry, Colloid and Interfacial Science and Chemical Kinetics.
2006-2008	B.Sc., Govt. Degree College, Pulwama, J& K, India. Subjects studied: Botany, Zoology, Chemistry and English Language

Teaching Experience:

- **Lecturer (10 + 2) (2011-2012),** National Institute of education and training (NIET), Higher secondary Pulwama-192301, Kashmir.
- **Assistant Professor (Contractual) (21-April to 30-August 2017)**, Department of Chemistry, University of Kashmir, Hazratbal Srinagar-190006
- **Appointed as Lecturer (10 + 2) (31-August 2017-02 December 2024)** in school education department J& K through JK-PSC.
- **Appointed as Assistant Professor, Chemistry Department of Higher Education (03 December 2024 till date)** through JK-PSC.

Fellowships/Awards:

1. Qualified for Junior Research Fellowship (**JRF, AIR 82/823**) conducted by CSIR, India in June **2013**.
2. Qualified for State Eligibility Test (**SET, State Rank 03**) conducted by J & K SET Agency and UGC, India in September **2013**.
3. Qualified for National Eligibility Test (**NET, AIR 47/898**) conducted by CSIR, India in December **2012**.
4. Awarded with **DST INSPIRE [IF130639] Fellowship for Doctoral Studies in Chemistry, Department of Chemistry, University of Kashmir** for the period 14-Oct-2013 to 21-04-2017.
5. Awarded **Gold Medal** during 18th Annual Convocation Convocation-2012 for securing Ist class Ist position in the order of merit in Master of Science (Chemistry).

Teaching Skills at PG level

The applicant has taught the following courses of M. Sc Chemistry (semester III and IV) during his JRF/SRF tenure in the Department of Chemistry, University of Kashmir, Srinagar-190006, India from 2013-2016 during his research program.

a. Course: CHM 412
   1. Instrumental methods in Electrochemistry.
   2. Applied electrochemistry.
   3. Self-assembly of surfactants and its consequences.

b. Material Chemistry.

c. CHM 315 (Laboratory course in physical chemistry)
d. CHM 415 (Laboratory course in physical chemistry)

Research Publications/activities

- Published 25 research papers in the international peer reviewed and indexed journals since 2013.
- Presented a poster in 4th National symposium on recent advances in analytical sciences and applications held on February 9-10, 2015, at Jamia Hamdard, New Delhi.
- Participated in workshop on Chemistry popularization, Organized by the Department of Chemistry, University of Kashmir, Srinagar 19006, in collaboration with Association of Chemistry teachers, Homi Bhaba Centre for science education, TIFR, Mumbai.
- Participated in Science Academies lecture workshop-2017 on Modern trends in Chemistry and Chemistry Education, July 19-20, 2017, Organized by the Department of Chemistry, University of Kashmir, Srinagar 19006.

Research Experience

1. Summary of Ph.D. research project:

During Ph.D. I have worked on projects related to;

- Optimization of Synthetic methods for Graphene Oxide and its different forms
- Modification of Graphene oxide with metal, metal-oxide, metal alloys and biomolecules.
- Fabrication of metal, metal-oxide, metal alloy and biomolecule-graphene based electrodes.
- Use of fabricated modified graphene-based electrodes for electrocatalysis of important electrochemical reactions involved in Biosystems and energy systems and for electrosensing/bio-sensing of important biological analytes.

2. Summary of Research work in Surface and Colloid Chemistry

- Also assisted and carried out research in surface and colloid chemistry and explored the transport and micellization characteristic of normal and surface-active imidazolium based ionic liquids.

Research Instrumental Expertise:

- Potentiostat/Galvanostat (Cyclic Voltammetry, Linear Sweep Voltammetry, Differential Pulse Voltammetry, Chronoamperometry, Chronocoulometry, Electrochemical Impedance spectroscopy).
- Surface Interrogation Scanning Electrochemical Microscopy **(SI-SECM)**.
- UV-Visible Spectrophotometer.
- Data interpretation of SEM, FE-SEM, TEM, XRD, XPS, IR.

Paper presentations at Conferences/Seminar attended:

1. Presented poster entitled "**Oxides in silver-graphene nanocomposites: Electrochemical signatures and electrocatalytic implications**", in in 4th National symposium on recent advances in analytical sciences and applications held on February 9-10, 2015, at Jamia Hamdard, Delhi, India.
2. Participated in workshop on Chemistry popularization, Organized by the Department of Chemistry, University of Kashmir, Srinagar 19006, in collaboration with Association of Chemistry teachers, Homi Bhaba Centre for science education, TIFR, Mumbai.
3. Participated in Science Academies lecture workshop-2017 on Modern trends in Chemistry and Chemistry Education, July 19-20, 2017, Organized by the Department of Chemistry, University of Kashmir, Srinagar 19006.

Publications:

1. PdAg Bimetallic Nanoalloy-Decorated Graphene: A Nanohybrid with Unprecedented Electrocatalytic, Catalytic, and Sensing Activities. **Sajad Ahmad Bhat**, Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Ghulam Mohammad Rather, Pravin P. Ingole, and Mohsin Ahmad Bhat*. ***ACS Appl. Mater. Interfaces,* 2018, 10, 16376-16389.**

2. Self-assembled AuNPs on sulphur-doped graphene: a dual and highly efficient electrochemical sensor for nitrite (NO_2^-) and nitric oxide (NO). **Sajad Ahmad Bhat**, Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Ghulam Mohammad Rather, Pravin P. Ingole, and Mohsin Ahmad Bhat*. ***New J. Chem.*, 2017, 41, 8347-8358**

3. Oxides in silver-graphene nanocomposites: electrochemical signatures and electrocatalytic implications, **Sajad Ahmad Bhat**, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Pravin Popinand Ingole, Mohsin Ahmad Bhat*,

***Analyst*, 2015, 140, 5601-5608.**

4. Sensitive electrochemical sensing of acetaminophen and hydroquinone over single-pot synthesized stabilizer free Ag/Ag-oxide-graphene nanocomposites, **Sajad Ahmad Bhat**, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Pravin Popinand Ingole, Mohsin Ahmad Bhat*, ***Journal of Electroanalytical Chemistry*, 2016, 783, 280-287.**

5. Self-Assembled Monolayers of Vitamin B_{12} over N-Doped Graphene: A Promising Electro-Catalyst for Hydrogen Evolution and Electro-Oxidative Sensing of H_2O_2, **Sajad Ahmad Bhat**, Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Pravin P. Ingole, and Mohsin Ahmad Bhat*, ***Electrochimica Acta*, 2020, 337, 1357302.**

6. Highly efficient catalytic reductive degradation of Rhodamine-B over Palladium-reduced graphene oxide nanocomposite. **Sajad Ahmad Bhat,** Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Bhat, Pravin P. Ingole, Mohsin Ahmad Bhat,* ***Chemical Physics Letters*, *754 (2020) 137724.***

7. Surface active ionic liquid assisted metal-free electrocatalytic-carboxylation in aqueous phase: A sustainable approach for CO_2 utilization paired with electro-detoxification of halocarbons. Sarwar Ahmad Pandit, **Sajad Ahmad Bhat**, Mudasir Ahmad Rather, Feroz Ahmad Sofi, Pravin P. Ingole, Zahid Manzoor Bhat, Musthafa Ottakam Thotiyl, Khursheed Ahmad Bhat, Shakeel U. Rehman and Mohsin Ahmad Bhat*. ***Green Chemistry*., 2021, *23, 9992-10005.***

8. Mechanistic insight into the electrocatalytic performance of reduced graphene oxide supported palladium, silver and palladium-silver nanodeposits toward electro-dehalogenation of halocarbons in room temperature ionic liquids. Sarwar Ahmad Pandit, **Sajad Ahmad Bhat**, Mudasir Ahmad Rather, Pravin P. Ingole, Mohsin Ahmad Bhat*. ***Phys. Chem. Chem. Phys*., *2020, 22, 6985-16997.***

9. Aqueous micellar solutions of Imidazolium based surface active ionic liquids: Promising solvent systems to boost the electrocatalytic performance of Vitamin B_{12} toward eco-green electro-detoxification of halocarbons. Sarwar Ahmad Pandit, **Sajad Ahmad Bhat**, Pravin P. Ingole, Mohsin Ahmad Bhat*. ***Electrochimica Acta 369 (2021) 137655.***

10. Imidazolium Based Surface Active Ionic Liquids as Novel Micellar Media for Simultaneous and Sensitive Electrochemical Detection of Dopamine and Ascorbic Acid. Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Sarwar Ahmad Pandit, Ghulam Mohammad Rather, Khaliquz Zaman Khan, and Mohsin Ahmad Bhat*. ***Electroanalysis,* 2017, *29, 1772-1782.***

11. As Catalytic as Silver Nanoparticles Anchored to Reduced Graphene Oxide: Fascinating Activity of Imidazolium Based Surface Active Ionic Liquid for Chemical Degradation of Rhodamine B. Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Sarwar Ahmad Pandit, Fayaz Ahmad Bhat, Ghulam Mohammad Rather, Mohsin Ahmad Bhat*. ***Catalysis Letters, 2019*, *149, 2195-2203.***

12. Determination of *cmc* of imidazolium-based surface-active ionic liquids through probe-less UV-vis spectrophotometry (Short Communication), Mudasir Ahmad Rather, Ghulam Mohammad Rather, Sarwar Ahmad Pandit, **Sajad Ahmad Bhat,** Mohsin Ahmad Bhat*, ***Talanta*, 2015**, Volume 131, Pages 55–58.

13. Ionic Liquids: Additives for Manipulating the Nucleophilicity, Mudasir Ahmad Rather, Ghulam Mohammad Rather, Sarwar Ahmad Pandit, **Sajad Ahmad Bhat,** Khaliq uz Zaman Khan, Mohsin Ahmad Bhat*, ***Journal of Solution Chemistry*, 2015, *44 (7), Pages, 1518-1528.***

14. Influence of the Anion on the Equilibrium and Transport Properties of 1-Butyl-3-methylimidazolium Based Room Temperature Ionic Liquids, Sarwar Ahmad Pandit, Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Ghulam Mohammad Rather, Mohsin Ahmad Bhat*, ***Journal of Solution Chemistry*, 2016, *45(12), Pages 1641-1658.***

15. Ionic Liquid Induced Enhancement in the Stickiness of Sticky Dissociative Electroreductive C-Cl Bond Cleavage: A Key to Eco-Green Detoxification of Chloroacetonitrile, Sarwar Ahmad Pandit, Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Khaliquz Zaman Khan, Pravin P Ingole, Mohsin Ahmad Bhat*, ***Electrochimica Acta*, 2016, 222, Pages 1128-1136.**

16. An Insight into a Fascinating DMF-Water Mixed Solvent System: Physicochemical and Electrochemical Studies. Sarwar Ahmad Pandit, Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Roohi Jan, Ghulam Mohd Rather, and Mohsin Ahmad Bhat*. ***ChemistrySelect,* 2017, 2, 5115-5127.**

17. Transforming micelles into mixed micelles: a promising approach to tune the catalytic performance of imidazolium-based surface active ionic liquids toward degradation of rhodamine B. Fayaz Ahmed Butt, Parvaiz Ahmad Bhat, **Sajad Ahmad Bhat**, Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Pravin P. Ingole, Ghulam Mohammad Rather and Mohsin Ahmad Bhat *. ***Phys. Chem. Chem. Phys., 2020, 22, 11337-11347.***

18. Eureka Moment: An Archimedean Alternative for the Determination of cmc of Surfactants via Weight Measurements. Mudeha Shafat Khan, Adil Amin Wani, Tabasum Ismail, **Sajad Ahmad Bhat**, Feroz Ahmad Sofi, and Mohsin Ahmad Bhat*. ***ACS Omega, 2020, 5, 31640-31643.***

19. Vitamin B_{12} plus Graphene Based Bio-Electrocatalyst for Electroreduction of Halocarbons in 1-butyl-3-methylimidazolium tetrafluoroborate: A special Use of the Synergism between Graphene, Ionic Liquid and Vitamin B_{12}. Sarwar Ahmad Pandit, Mudasir Ahmad Rather, **Sajad Ahmad Bhat**, Pravin P. Ingole and Mohsin Ahmad Bhat,* ***Russian Journal of Electrochemistry, 2021, 57, 214-227.***

20. Exploiting the unique specialty of hydrazone functionality: Synthesis of a highly sensitive UV-Vis active solvatochromic probe. Mudeha Shafat Khan, Romana Khanam, **Sajad Ahmad Bhat**, Naheed Sidiq, Tabasum Ismail, Pravin P. Ingole, Rahul V. Pinjari, Mohsin Ahmad Bhat, ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 247 (2021) 119154.***

21. Nano-spinel cobalt decorated sulphur doped graphene: An efficient and durable electrocatalyst for oxygen evolution reaction and non-enzymatic sensing of H_2O_2. Adil Amin Wani, Murtaza Manzoor Bhat, Feroz Ahmad Sofi, **Sajad Ahmad Bhat**, Pravin P. Ingole, Nusrat Rashid and Mohsin Ahmad Bhat*. ***New J. Chem., 2021, 45, 15544-15554.***

22. Imidazolium Based Surface Active Ionic Liquids: Promising Boosters to Enhance the Radical Scavenging and Antioxidant Activity of Conventional Surfactant Solubilised Quercetin. Fayaz Ahmad Butt, Murtaza Manzoor Bhat, Umar Rashid, Imtiyaz Ahmad Lone, Parvaiz Ahmad Bhat, **Sajad Ahmad Bhat**, Mudasir Ahmad Rather, Ghulam Mohammad Rather, Mohsin Ahmad Bhat*. ***Catalysis Letters,*** **https://doi.org/10.1007/s10562-021-03738-x.**

23. Pt_xAg_{100-x} nano-alloy decorated N-doped reduced graphene oxide: a promising electrocatalyst for direct urea fuel cells. Iram Amin, **Sajad Ahmad Bhat**, Murtaza Manzoor Bhat, Feroz Ahmad Sofi, Aamir Y. Bhat, Pravin P. Ingole, Ritwik Mondal, Musthafa Ottakam Thotiyl and Mohsin Ahmad Bhat. ***New J. Chem., DOI: 10.1039/d3nj04229d.***

24. Photoseeded Silver on Two-Dimensional Nanosheets of Cu-Porphyrin Metal-Organic Framework as a Tandem Electrocatalyst for Highly Efficient Electrochemical Reduction of CO_2 to CH_4. Feroz Ahmad Sofi, Paras Kalra, Murtaza Manzoor Bhat, Adil Amin Wani, **Sajad Ahmad Bhat**, Aamir Yaseen Bhat, Kowsar Majid, Pravin Popinand Ingole*, Mohsin Ahmad Bhat*. ***ACS Appl. Nano Mater. 2023, 6, 21, 19689-19700.***

25. Redox-Couple Mediation: A promising strategy to enhance the electrocatalytic performance of Surface-Active ionic liquid interfaces. Ummar Ramzan Sheikh, Fayaz Ahmad Butt, Murtaza Manzoor Bhat, Sana Zahoor, Nadia Hassan, Mohammad Yaseen Kuchey, Tabasum Ismail, **Sajad Ahmad Bhat**, Pravin P. Ingole, Mohsin Ahmad Bhat, ***Journal of Electroanalytical Chemistry, 15 February 2025, Volume 979, 118902***.

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