CURRICULUM VITAE

Mohsin Ahmad Bhat
Associate Professor,
Department of Chemistry, University of Kashmir, Hazratbal, Srinagar-190006, J & K India
Email: mohsin@kashmiruniversity.ac.in; nanoelectrochem@gmail.com **: Phone:+91 9419033125**

Education:

2015-2016	Post-Doctoral Fellowship under supervision of Professor Alen J. Bard, at University of Texas at Austin, Austin, USA.
2007-2010	Ph.D. in Chemistry, University of Pune, Ganeshkhind, Pune-411007, India. Title: "***Electrochemical Investigations in Imidazolium based Ionic Liquids"*** Supervisor: Dr. S. K. Haram.
1998-1999	M.Sc. in Chemistry (**Gold Medalist)**, University of Kashmir, Srinagar-190006, J &K, India. Course work pertaining to Organic, Inorganic, Physical and Analytical Chemistry with one year specialization in Physical Chemistry with the focus on courses Quantum Chemistry, Statistical Thermodynamics, Electrochemistry, Colloid and Interfacial Science and Chemical Kinetics.
1995-1997	B.Sc., Govt. Degree College for Boys, Anantnag, J& K, India. Subjects studied: Botany, Zoology, Chemistry and English Language

Appointments:

- **Associate Professor,** Department of Chemistry, University of Kashmir, Srinagar-190006, India. (**29th November, 2016-Till date**)
- **Assistant Professor,** Department of Chemistry, University of Kashmir, Srinagar-190006, India. (**29th November, 2002-28th November, 2016**)
- **Contractual Lecturer,** Govt. Degree College for Boys, Baramula-193101, J &K , India. (**June**, **2000- July, 2002**)

Teaching Skills

I have worked as contractual Lecturer in the Department of Chemistry, Govt. Degree College for Boys, Baramula-193101, India from June 2000-July,2002 and joined Department of Chemistry, University of Kashmir, Srinagar-190006, India 1n Nov. 2002. Since then I have been teaching Physical Chemistry to students pursuing M.Sc. Chemistry. The main assignments have been teaching the courses pertaining to Electrochemistry, Chemical Kinetics, Interfacial Chemistry, Quantum chemistry and Statistical Mechanics in addition to the Lab courses in Physical Chemistry for M.Sc. Program.

Research Publications/activities

- Published 52 research papers in the international peer reviewed and indexed journals since 2004.
- Presented six research papers in National and International Conferences in India.
- Two scholars awarded with Ph.D., One scholar awarded with M.Phil Degree and 08 Ph. D scholars presently working under my supervision.
- Presented two research papers in the Regional level conferences.
- Scopus Author ID: 7102579013: https://orcid.org/0000-0002-1160-2192, No. of Citations: 554 and Author h-Index: 15, i-Index: 22.
- Life member of Indian Society for Electroanalytical Chemistry (ISEAC).
- Member Board of under graduate and post graduate studies of Department of Chemistry, University of Kashmir.

Fellowships/Awards:

1. Qualified for Junior Research Fellowship (JRF) conducted by CSIR, India in December **2000**.
2. I ranked among the top 20% of the students who had qualified CSIR-JRF NET in year 2001 throughout India and was eligible for more prestigious Shayama Prasad Mukherjee (SPM) Fellowship.
3. Teacher Summer Research Fellowship for year **2013** by IASc-INSA-NASI, India for working in BARC, Mumbai on DFT studies in Room Temperature Ionic Liquids.
4. Awarded with **UGC Raman Fellowship for Post-Doctoral Studies in USA** for the year 2014-2015 to work with Professor Alen J. Bard, at University of Texas at Austin, Austin, USA.

Research Experience

1. ***Summary of Ph.D. Thesis***

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

- Synthesis of Imidazolium based Room Temperature Ionic Liquids (RTILs).
- Structural and interfacial transitions of RTILs due to temperature and co-solvents,
- Understanding of current transients across RTIL/Electrode interface using the concept of Fractals.
- Solvent dynamic control by RTIL on transport and charge transfer in RTILs
- Ion pair effects in RTILs.
- Redox behavior of quinones in RTILs especially there use as ammonia sensors, and catalysis.

2. ***Summary of Research work in Surface and Colloid Chemistry***

- From Nov. 2002 to Jan-2007, carried out research in the area of surface and colloid chemistry and explored the transport and micellization characteristic of cationic surfactants especially the tuning of these behaviors through temperature and Co and Counter-ion effects. The work has been published.

3. ***Summary of Postdoctoral Research work***

Worked under the supervision of Professor Allen J. Bard, Centre of Electrochemistry at University of Texas, Austin, USA on project entitled, "Surface Interrogation Scanning Electrochemical Microscopy (SI-SECM) at Photoilluminated Metal doped/Metal nanoparticle Coupled Oxide based Semiconductor Electrodes" as a UGC Raman Postdoctoral Fellow for a period of twelve months. During this period I was trained for the use of SECM and SI-SECM for electrochemical investigations and successfully carried out some nanogap electrochemical investigations with millisecond time resolution across photoilluminated semiconductor/electrolyte interfaces. Through our investigations we were able to demonstrate that nanogap SECM investigations can be used for mechanistic and kinetic explorations of electrodeposition. We were able to demonstrate that by adding transient measurements. i.e. time as a variable, SECM can be exploited to understand and quantify very complex systems, e.g. involving electrodeposition and dissolution.

4. ***Research Projects***

Projects under implementation:

S.No.	Title	Cost in Lakh	Start date	Role as PI/Co-PI	Agency	Status
1	Surface Interrogation Scanning Electrochemical Microscopy (SI-	87.00	01-04-2019	PI	DST/ Nanomission	Ongoing

	SECM) Screening of Metal nanoparticle Coupled Semiconductor nanocomposites for Photo-Oxidation/reduction of Water and CO_2					
2	Design and Screening of Pd-bimetallic alloy (Pd-M) and Pd-bimetallic-phosphide (Pd-M-P) loaded Covalently linked 3-Dimensional graphene/heteroatom doped/co-doped graphene Network (Pd-M-3DHADG and Pd-M-P-3D-HADG) nano-electrocatalysts for Direct Oxidation Fuel Cells	42.00	24-02-2020	PI	SERB-DST	Ongoing

Projects completed during last 5 years:

S.No.	Title	Cost in Lakh	Month of Submission	Role as PI/Co-PI	Agency	Status
1	Electrochemical Investigations on Electroreduction Of Polyhalogenated Hydrocarbons in Room Temperature Ionic liquids	49.20	2009	PI	DST	Completed

Current Research

Presently I along with my research group are exploring transport and amphiphillic properties of Ionic liquids, use of ionic liquids to tune the stability and activity of enzymes, electrochemistry of semiconductor quantum dots, electrochemical investigation on electroreduction of polyhalogenated hydrocarbons, functionalization of Graphene/Graphene oxide for electrocatalytic, electroanalytic and electrosensonsing applications, and design of mediator based enzyme immobilized electrodes for electrotransformation and electrosensing applications. A new addition to our research interests is our desire to make use of electrochemistry for diagnostic and sensing applications wherein we wish to make use of electrochemical methods for detection and quantification of both redox active as well as redox inactive biomaromolecules (ENZYMES, DNA, Antibodies) , Viruses and besides following the metabolic state of living cells.

The main focus of our research work is the **use** of ***electrochemistry, functional nanomaterials and Ionic Liquids*** to address the various ***Energy, Environment and Health*** related challenges critical for our well-being and future generations. In this regard our group is currently working and plans to work for;

1. **ENERGY:** In this context we are working on the design and synthesis of **graphene based** single metal atom, nano metal/alloy/metal phosphide nanocomposites, metal doped/metal/metal alloy nanoparticle coupled **semiconductor quantum dots**, Metal doped/metal nano particle coupled **Perovskites**, Semiconductor anchored **Metal- Organic Frameworks,** as potential ***electrocatalysts, photo-electrocatalysts*** for ***water splitting and fuel cell reactions***.
2. **ENVIRONMENT**: In this context we are working for the design and synthesis of functional nano dimensional composites for the ***chemical, electrochemical and photoelectrochemical detoxification*** of environmental pollutants like **Carbon dioxide, halohydrocarbons**, **pesticides** and **dyes**. Besides are working for the design and synthesis of functionalized **Metal- Organic Frameworks** for the sensing and removal of water pollutants especially heavy metal ions in **water**.
3. **HEALTH**: In this context we are working for the design of ***electrochemical sensors*** for the selective and sensitive sensing of pollutants, metabolites and various biomarkers. Fabrication of enzyme/antibody functionalized nanoelectrodes for electrochemical sensing and quantification of environmentally and biologically important analytes like bacterial cells, viruses and diseased human cells and disease indicator metabolites via nanoimpact technology is a recent addition to our research activities in this regard.
4. **UNCONVENTIONAL SOLVENTS:** In this context we are working for the design of Ionic liquid (IL) especially amphiphilic ILs based homogenous and heterogenous (micelle, Vesicle based) solvent systems for industrially and synthetically important organic transformations via chemical/electrochemical approaches.

Number of Research Scholars:

Currently Registered:	**08**
Ph.D. Awarded:	**03**
M.Phil Awarded:	**01**

Paper presentations at Conferences/Seminar attended:

1. Presented paper entitled "**Electrodics of Methanol Oxidation at Pt-f-MWCNT Composite**", in International Conference on Advanced Material (ICAM 2008): 18-21 February, 2008 held at Kottayam. Organized by School of Chemical Sciences, Mahatama Gandhi University, Kottayam, Kerala, India.
2. Presented paper entitled "**Do CNTS Affect the Electrodics at Ag in Ag-f-MWCNT Composite?** in International Conference on Nanomaterials and Applications -2008 (ICNAMA 2008): 9-11 December, 2008 held at Shivaji University Kolhapur. Jointly Organized by Department of Chemistry and Department of Physics Shivaji University, Kolhapur.
3. Presented a paper entitled, **Synergistic Effect of Carbon Nanotubes Support on Electrocatalytic Properties of Silver in the Nitrate Ions Reduction**, in Raman Memorial Conference 2009 (RMC-2009) at University of Pune,

organized by Department of Physics, University of Pune, 26-27 February, 2009.

4. Presented paper entitled, **"Relevance of Ion Pair Effect to Double Layer Structure in Room Temperature Ionic Systems",** in International Conference on Recent Advances in Industrial Electrochemical Science and Technology (ICRAIEST-2009): 5-7, November-2009**.** Organized by Department of Chemistry, Mangalore University, Mangalagangothri-574199, India.
5. Five day National Work shop on Frontiers of Spectroscopy and Analytical Techniques in Chemical Sciences, 21-25 March-2009, at University of Kashmir, Srinagar, Delivered a Talk on **"Scanning Electrochemical Microscopy".**
6. Presented a paper entitled, **Tuning Electrocatalytic Activity of Ag using CNT**, in APA international Congress on Advances in Human Healthcare Systems, organized by Jamia Hamdard and IIT Delhi, February 20-23, 2012.

Conferences/Seminar/Workshops Organized:

1. Organized a Two Day Workshop on "Hands-on training on Science Laboratory Equipment and Instrumentation for Faculty and Research Scholars" on 28th & 29th November 2018, at Department of Chemistry, University of Kashmir, Srinagar.

Publications:

1. Application of mixed electrolyte mass-action model to the micellization of 1-dodecylpyridinium chloride in aqueous medium *Aijaz A. Dar, **Mohsin A. Bhat** and G. Mohammad Rather, Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2004, Volume 248, Pages 67-74.
2. Temperature dependence of transport and equilibrium properties of alkylpyridinium surfactants in aqueous solutions ***Mohsin Ahmad Bhat**, Aijaz Ahmed Dar, Adil Amin, Peer Irfan Rashid and Ghulam Mohammad Rather The Journal of Chemical Thermodynamics*, 2007, Volume 39, Pages 1500-1507.
3. Co- and Counter Ion effect on the Micellization Characteristics of Dodecylpyridinium chloride ***Mohsin Ahmad Bhat**, Aijaz Ahmed Dar, Adil Amin, Peer Irfan Rashid and Ghulam Mohammad Rather*. *Journal of Dispersion Science and Technology*, 2008, Issue 4, November 2008, Pages 514-521.
4. Effect of sodium alkanoates on micellization of dodecylbenzyldimethylammonium chloride in aqueous medium, Adil Amin, Aijaz Ahmad Dar, **Mohsin Ahmad Bhat**, Musarat Jan, Nuzhat Rehman, Mohammad Amin Mir, and Ghulam Mohammad Rather, *Journal of Dispersion Science and Technology* , 2008, Volume 29, Pages 406–414.
5. Construction of Ag/AgCl Reference Electrode from used Felt-tipped Pen Barrel for Undergraduate Laboratory, Shaukatali N. Inamdar**, Mohsin A. Bhat** and Santosh K. Haram, *Journal of Chemical Education*, 2009, Volume 86, Pages 355-356.
6. Mechanistic Aspects of Nitrate Ion Reduction on Silver Electrode: Estimation of O-NO-2 Bond Dissociation Energy using Cyclic Voltammetry, **Mohsin Ahmad Bhat**, Pravin Popinand Ingole, Vijay Raman Chaudhari, S. K. Haram, *New Journal of Chemistry*, 2009 Volume 33, Pages 207-210.
7. Outer Sphere Electro-reduction of CCl_4 in1-butyl-3-methyl immidazolim Tetrafluoroborate: An Example of Solvent Specific Effect of Ionic Liquid, **Mohsin Ahmad Bhat**, Pravin Popinand Ingole, Vijay Raman Chaudhari, S. K. Haram, *Journal of Physical Chemistry B.* 2009 Volume 113, Pages 2848-2853.
8. Self-Electrocatalysis of Hydroquinone on Gold in Aqueous unbuffered Media, Vijay Raman Chaudhari, **Mohsin Ahmad Bhat**, Pravin Popinand Ingole, S. K. Haram, *Electrochemistry Communication*, 2009, Volume 11, 2009, Pages 994-996.
9. Relevance of Ion Pair Effect to Double Layer Structure in Room Temperature Ionic Liquid Systems, **Mohsin Ahmad Bhat,** Arkaprabha Konar, S. K. Haram in Proceeding of ISEAC International Symposium Cum Workshop on Electrochemistry, 2011, Eds. S.K. Aggarwal et al; ISEAC-2011, Pages 124-131.
10. Evidence for Formation of Ion Pair Stabilized Diiodomethane Radical Anion in 1-butyl-3-methylimidazolium tetrafluoroborate Room Temperature Ionic Liquid. **Mohsin Ahmad Bhat**, Pravin Popinand Ingole, *Electrochimica Acta*, 2012, Volume 72, 18-22.
11. Microwave-assisted synthesis of disulfides using tetrathiomolybdate: A step toward greener synthesis. Naheed Sidiq,

Mohsin Ahmad Bhat, Khaliquz Zaman Khan, Mohammad Akbar Khuroo, Hetroatom Chemistry, 2012, Volume 23, Pages 373–376.

12. Unusual Aspects of Ion Pairing Effects in Room Temperature Ionic Liquids, **Mohsin Ahmad Bhat**, Arkaprabha Konar , Pravin Popinand Ingole, Altaf HussainPandith, *J. Phys. Org. Chem 2012,* Volume *2,* Pages *1243–1246.*
13. Mechanistic, Kinetic and Electroanalytical Aspects of Quinone-Hydroquinone Redox System in N-alkylimidazolium Based Room Temperature Ionic Liquids, **Mohsin Ahmad Bhat,** *Electrochimca Acta,* 2012, Volume 8, Pages 275-282.
14. Pseudo-indicator behaviour of platinum electrode explored for the potentiometric estimation of non-redox systems, Syed Raashid, Oyais Ahmad Chat, Masood A. Rizvi, **Mohsin Ahmad Bhat**, Badruddin Khan, *Talanta,* 2012, Volume 101, Pages 246-252.
15. Mechanistic, Kinetic, Electroanalytical and Electrosynthetic Aspects of Quinone-Hydroquinone Redox System in N-alkylimidazolium Based Room Temperature Ionic Liquids, **Mohsin Ahmad Bhat** in Proceeding of Fifth ISEAC Triennial International Conference an Advances and Recent Trends in Electrochemistry, 2013, Eds. S.K. Aggarwal et al; ELAC-2013, Pages 233-241.
16. Exploring Physicochemical Aspects of N-alkylimidazolium Based Ionic Liquids, **Mohsin Ahmad Bhat** , Chanmeet K. Dutta and G. M. Rather, *J. Mol. Liquids* 2013, Volume 181, Pages 142-151.
17. Association of ionic liquids in solution: Conductivity studies of [BMIM][Cl] and [BMIM][PF_6] in binary mixtures of acetonitrile + methanol, Roohi Jan, G. M. Rather and **Mohsin Ahmad Bhat** , *J. Sol. Chem. 2013,* Volume 42, Pages 738–745.
18. Electroanalytical, Kinetic and Mechanistic Investigations of Coordination inspired electron transfer between Fe(II) / Cu (II). Syed Raashid Maqsood, **Mohsin Ahmad Bhat** and Badruddin Khan, *J Coordination Chem, 2013, Volume 66, Pages 1211-1219.*
19. Anomalous Fluctuations in Current Transient at Glassy Carbon|Room Temperature Ionic Liquid Interface, **Mohsin Ahmad Bhat** , Shailendra K. Jha, *Electrochimica Acta,* 2013, Volume 105 pages 593– 598.
20. Electrochemical Investigations on Pd^{2+} plus Benzoquinone in Imidazolium Based Room Temperature Ionic Liquids: A Step towards Greener Wacker Catalysis. **Mohsin Ahmad Bhat** , Pravin P. Ingole, Electrocatalysis 2013,4, 154-158.
21. Effect of Cosolvent on Bulk and Interfacial Characteristics of Imidazolium based Room Temperature Ionic Liquids, Roohi Jan, G. M. Rather and **Mohsin Ahmad Bhat**, ***J. Sol. Chem.*** 2014, Volume 43, Pages 685–695
22. Kinetic investigations into the synthesis of disulphides via tetrathiomolybdate as a sulphur-transfer reagent, Naheed Sidiq, Mohsin Ahmad Bhat, Khaliquz Zaman Khan, Mohammad Akbar Khuroo, Transition Metal Chemistry, 2014, Volume 39, Pages 781–787.
23. 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.
24. Targeting copper induced oxidative damage to proteins by ligation: a novel approach towards chelation therapy for oxidative stress disorders, Syed Raashid Maqsood, Badruddin Khan, Mohsin Ahmad Bhat, Tanvir Ali Dar, Syed Hussain Mir, *New Journal of Chemistry*, 2015, Volume 39 (4), 2720-2727.
25. 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.
26. Ionic Liquids: Additives for Manipulating the Nucleophilicity, Mudasir Ahmad Rather, Ghulam Mohammad Rather, Sarwar Ahmad Pandit, Sajad Ahmad Bhat, Khaliquz Zaman Khan, **Mohsin Ahmad Bhat**, *Journal of Solution Chemistry, 2015,* 44 (7), Pages, 1518-1528.
27. Micellar Effect of Ammonium Based Cationic Surfactants on Kinetics of Methylene Blue-Assisted Ru (III) and Cu (II) Catalyzed Cysteine/Cystine Transformation in Acidic Aqueous Media, Roheena Jan, **Mohsin Ahmad Bhat**, Nasarul

Islam, Badruddin Khan, *Journal of Surfactants and Detergents, 2015,* 18 (5), Pages 855-862.

28. Probing crystal structure and composition dependent absolute energy levels and electro-catalytic properties of silver indium sulfide nanostructures, Pravin Popinand Ingole, Pintu Saji, Ashok Ganguli, **Mohsin Ahmad Bhat,** *ChemPhysChem*, 2016, 17(8), Pages 1195-1203.
29. Citrate-stabilized Q-CdSe seed-mediated synthesis of silver nanoparticles: The role of citrate moieties anchored to the Q-CdSe surface, Pravin P Ingole, **Mohsin A Bhat**, *Materials Research Express, 2016, 3(3) Pages* 03500.
30. Effect of Chemical Charging/Discharging on Pl asmonic Behavior of Silver Metal Nanoparticles Prepared using Citrate-Stabilized Cadmium Selenide Quantum Dots, Pravin P Ingole, **Mohsin A Bhat**, *ChemPhysChem*, 2016, 17(20), Pages, 3209-3216.
31. 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 Mohd Rather, **Mohsin Ahmad Bhat**, *Journal of Solution Chemistry*, 2016, 45(12), Pages 1641-1658.
32. 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*, 783, Pages 280-287.
33. 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.
34. Towards Understanding the Solvent-Dynamic Control of the Transport and Heterogeneous Electron-Transfer Processes in Ionic Liquids, **Mohsin Ahmad Bhat**, Pravin P Ingole, H Randriamahazaka, *ChemPhysChem*, 2017, 18 (4), 415-426.
35. Self-assembled AuNPs on sulphur-doped graphene: a dual and highly efficient electrochemical sensor for nitrite (NO 2−) and nitric oxide (NO) SA Bhat, SA Pandit, MA Rather, GM Rather, N Rashid, PP Ingole, **Mohsin Ahmad Bhat**, *New Journal of Chemistry* 2017, 41 (16), 8347-8358.
36. 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, **Mohsin Ahmad Bhat**, *Electroanalysis*, 2017, 29 (7), Pages 1772-1782.
37. 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, Mohsin Ahmad Bhat, ChemistrySelect, 2017, 2(18), Pages 5115-5127.
38. Anisotropic Plasmonic Copper/Copper Oxide Nanostructures by DC Electrophoretic Dissolution of Copper in Water for Plasmonic Sensing of Glucose K Saini, H Devnani, PP Ingole, **Mohsin Ahmad Bhat,**, *Journal of The Electrochemical Society*, 2017 164 (13), B674-B680.
39. In-Situ Detection of the Adsorbed Fe (II) Intermediate and the Mechanism of Magnetite Electrodeposition by Scanning Electrochemical Microscopy, **Mohsin A Bhat**, Nikoloz Nioradze, Jiyeon Kim, Shigeru Amemiya, Allen J Bard, *Journal of the American Chemical Society, 2017, 139 (44), Pages 15891–15899*.
40. 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, **Mohsin Ahmad Bhat,** *ACS applied materials & interfaces*, 2018, 10 (19), Pages 16376-16389.
41. Cu^{2+}-BTC based Metal–Organic Framework: A Redox Accessible and Redox Stable MOF for Selective and Sensitive Electrochemical Sensing of Acetaminophen and Dopamine, Feroz Ahmad Sofi, **Mohsin Ahmad Bhat**, Kowsar Majid, *New J. Chem.*, 2019,43, 3119-3127.
42. Aqueous micellar solutions of surface active ionic liquids as eco-green solvents for electrodexoification of halocarbons: A case study of dodecylmethylimidazolium chloride micelle solubilized carbon tetrachloride, Parvaiz Ahmad Bhat,

Sarwar Ahmad Pandit, Mudasir Ahmad Rather, **Mohsin Ahmad Bhat**, *J. Mol. Liquids*, 2019, 289, 111129.

43. 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(8), 2195–2203.
44. Vitamin B12 functionalized 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, **Mohsin Ahmad Bhat**, *Electrochimica Acta*, **2020,** 337, 135730.
45. Structural-functional integrity of lysozyme in imidazolium based surface active ionic liquids, Mudasir Ahmad Rather, Tanveer A.Dar, Laishram R. Singh, Ghulam Mohammad Rather, **Mohsin Ahmad Bhat**, *International Journal of Biological Macromolecules*, **2020,** 156, 271-279.
46. Dendritic copper microstructured electrodeposits for efficient and selective electrochemical reduction of carbon dioxide into C1 and C2 hydrocarbons, Nusrat Rashid, Mohsin Ahmad Bhat, Pravin P. Ingole, *Journal of CO2 Utilization*, **2020**, 38, 385-397
47. 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 Ahmad Butt, Parvaiz Ahmad Bhat, Sajad Ahmad Bhat, Nusrat Rashid, Mudasir Ahmad Rather, Sarwar Ahmad Pandit, Pravin Ingole, Ghulam Mohammad Rather, **Mohsin Ahmad Bhat**, *Phys. Chem. Chem. Phys.*, **2020**, 22(20), 11337-11347.
48. Unprecedented Lower Over-potential for CO2 Electro-reduction on Copper oxide Anchored to Graphene Oxide Microstructures, Nusrat Rashid, **Mohsin Ahmad Bhat**, Anirban Das, *Journal of CO2 Utilization*, **2020**, 39, 101178.
49. Au-nanoparticle Loaded Nickel-Copper Bimetallic MOF: An Excellent Catalyst for Chemical Degradation of Rhodamine B, S Nabi, FA Sofi, N Rashid, PP Ingole, **Mohsin Ahmad Bhat**, Inorganic Chemistry Communications, **2020**, 117, 107949.
50. Electrochemical reduction of CO2 to ethylene on Cu/Cu x O-GO composites in aqueous solution, N Rashid, **Mohsin Ahmad Bhat**, UK Goutam, PP Ingole, *RSC Advances* , **2020**, 10 (30), 17572-17581.
51. 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,* **2020**, 754, 137724.
52. 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,** *Physical Chemistry Chemical Physics*, **2020**, 22(29), 16985-16997.
53. 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, **Mohsin Ahmad Bhat, ACS Omega**, **2020**, 5(49), 31640-31643.
54. Aqueous micellar solutions of Imidazolium based surface active ionic liquids: Promising solvent systems to boost the electrocatalytic performance of Vitamin B12 toward eco-green electro-detoxification of halocarbons, Sarwar Ahmad Pandit, Sajad Ahmad Bhat, Pravin P Ingole, **Mohsin Ahmad Bhat**, *Electrochimica Acta*, **2021**, 369, 137655.
55. 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,*2021, 247, 119154.

Invited Lectures:

1. A series of two lectures under the title, **Understanding Electrochemiluminescence** in collaboration with EMMRC, university of Kashmir, Srinagar, for **Consortium of Educational Communication.**

2. **"Scanning Electrochemical Microscopy".** In the **National Work shop on Frontiers of Spectroscopy and Analytical Techniques in Chemical Sciences**, 21-25 March-2009, at University of Kashmir, Srinagar,

3. Delivered a short Lecture, **Relevance of Ion Pair Effect to Double Layer Structure in Room Temperature Ionic Liquid Systems** at International Symposium cum Workshop on Electrochemistry, held from 7-10th December at Goa (India).

4. Delivered an invited talk at**, Indo-UK Newton-Bhabha Workshop on " Electrochemical Technologies for Sustainable Fuels, Chemicals and Industrial Processes "** held from December 2-5, 2019 at IISER Pune, Pune, India.

Other Contributions:

1. Participated in the **Legends of the Legacy Archives Contest,** of **American Chemical Society.**

2. Completed DST sanctioned research scheme of Rs. 50 Lakhs sanctioned vide letter No. SR/S1/PC-11/2009, dated: 23-10-2009.

3. DST under the NANO mission scheme has sanctioned research scheme of Rs. 87 Lakhs sanctioned vide letter No. C/4578/IFD 2018-19, dated: 08-01-2019.

4. DST under the Core Research Grant scheme has sanctioned research scheme of Rs. 42 Lakhs sanctioned vide letter No. CRG/2019/006051, dated: 14-Dec-2019.

Referees:

1. **Prof. Allen J. Bard,**
   Department of Chemistry,
   The University of Texas at Austin,
   105 E 24th St. Sta A5300,
   Austin, Texas 78712-1224,
   United States,
   Phone: 512/471-3761
   Fax: 512/471-0088
   Email: ajbard@cm.utexas.edu

2. **Dr. Shigeru Amemiya**
   Professor of Chemistry,
   Department of Chemistry,
   University of Pittsburgh,
   219 Parkman Avenue, Pittsburgh, PA 15260, USA
   Phone: 1-412-624-1217
   E-mail: amemiya@pitt.edu
3. **Dr. Santosh K. Haram**
   Professor,
   Department of Chemistry,
   University of Pune,
   Ganeskhind-411007, India
   Email: haram@chem.unipune.ernet,.in

4. **Prof. Vijayamohanan K Pillai,**
   Professor,
   Chairman Chemistry, Indian Institute of Science Education and Research, Tirupati,
   Tirupati-517507, Andhra Pradesh, India.
   Phone: +91 8772500 Extn. 236
   E-mail: vijay@iisertirupati.ac.in; vijak.vijayamohanan@gmail.com.

5. **Professor S. Sampath**
   Department of Inorganic and Physical Chemistry
   Indian Institute of Science
   Bangalore- 560 012
   India.
   Email: sampath@iisc.ac.in

Mohsin Ahmad Bhat