

Part A. PERSONAL INFORMATION

CV date

01/09/2026

First and Family name	Dr. Bilal Ahmad Shiekh		
Social Security, Passport, ID number	Z5838810	Age	42
Researcher codes	WoS Researcher ID	S-1404-2019	
	SCOPUS Author ID	57095000700	
	Open Researcher and Contributor ID (ORCID)	0000-0001-6842-1723	

A.1. Current position

Name of University/Institution	Govt.Degree College Boys, Anantnag		
Department	Department of Chemistry		
Address and Country	GDC, Anantnag Jammu and Kashmir-192101, India		
Phone number	+91-7006805524	E-mail	bilal.ahmad459@gmail.com bilalchem.rsh@gndu.ac.in
Current position	Assistant Professor	From	02/12/2024
Key words	Catalyst Design for Sustainable Catalysis, CO ₂ Conversion to HCOOH, CH ₃ OH, CH ₄ , Reaction Mechanism Prediction,		

A.2. Education

PhD	University	Year
PhD in Chemistry	Guru Nanak Dev University	2020
Master in Chemistry	University of Pune	2012

A.3. JCR articles, h Index

Total number of publications: 27

Total number of citations: 758

h index: 11 (Google Scholar)

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Dr. Bilal Ahmad Shiekh obtained his master's degree in Physical Chemistry from University of Pune, India during which he was awarded with best University of Pune – National Chemical Laboratory Postgraduate Student Scholarship. He then moved to Guru Nanak Dev University where he worked on biomimetic catalyst design for activation of CO₂ under the supervision of Dr. Damanjit Kaur, which was later on awarded with **University Grants Commission Basic Scientific Research (UGC-BSR)** research fellowship grant from University Grants Commission, India for five years. He qualified both **CSIR-UGC NET** and **J&K SET** exams conducted by CSIR a contemporary R&D organization established by Government of India as eligibility for the recruitment of Assistant Professors in Indian Universities and Colleges. Moreover, he also qualified Graduate Aptitude Test of Engineering (**GATE**) conducted jointly by the highly reputed Indian Institute of Science and seven premium Indian Institutes of Technology. He is the only student of his batch in University of Pune who qualified these three examinations (CSIR-UGC NET, J&K SET and GATE).

Dr. Bilal has published overall 18 research articles and he is single author in many of them. His research focuses on catalyst design for the activation of small molecules that can be used as C1 feedstocks for sustainable chemical transformations and to provide accurate solutions to complex chemical reaction problems.

Part C. RELEVANT MERITS

C.1. Some of the Publications (including books)

1. **Shiekh, B. A.**; Kaur, D.; Kumar, S. Bio-mimetic self-assembled computationally designed catalysts of Mo and W for hydrogenation of CO₂/dehydrogenation of HCOOH inspired by the active site of formate dehydrogenase. **Phys. Chem. Chem. Phys.** 2019, 21, 21370-21380.
2. **Shiekh, B. A.** Biomimetic Heterobimetallic Architecture of Ni(II) and Fe(II) for CO₂ Hydrogenation in Aqueous Media. A DFT Study. **RSC Advances** 2019, 9, 33107-33116.
3. **Shiekh, B. A.** Hierarchy of Commonly used DFT-Methods for Predicting Thermochemistry of Rh-Mediated Chemical Transformations. **ACS Omega** 2019, 4, 15435-15443.
4. **Shiekh, B. A.**; Kaur, D. Mechanism of atom economical conversion of alcohols and amines to amides using Fe(II) pincer catalyst. An outer-sphere metal-ligand pathway or an inner-sphere elimination pathway? **RSC Advances** 2019, 9, 17479-17489.
5. Singh, G.; Kaur, M.; **Shiekh, B. A.**; Kang, T. S. Luminescent micellar nano-interfaces of surface-active ionic liquid for the selective recognition of ADP in aqueous medium. **Chem. Comm.** 2018, 54, 7463-7466.
6. **Shiekh, B. A.**; Kaur, D.; Godara, S. K. Unprecedented Synthesis of Symmetrical Azines from Alcohols and Hydrazine Hydrate using Nickel Based NNN-Pincer Catalyst: An Experimental and Computational study. **Cat. Comm.** 2019, 124, 19-23.
7. Singh, G.; Kaur, M.; **Shiekh, B. A.**; et. Al. Concentrated Aqueous Dispersions of Low-Defect Few-Layered Thick Graphene using Surface Active Ionic Liquid for Enhanced Enzyme Activity. **Mater. Adv.** 2020, 1, 1364-1370.
8. Arora, K.; Sekar, K.; **Shiekh, B. A.**; et al. In-Situ Preparation of Nanocomposite comprising Graphene and Fe₂O₃ Nanospindles for Photodegradation of Antibiotic Under Visible Light. **New J. Chem.** 2020, 44, 15567-15573.
9. Rana, L. K.; Sharma, R.; **Ahmed, B.**; Kaur, D.; Kumar, S.; Hundal, G.; Mittal, S. K. Dicarboxamide polymorph derivatives for trace level electrochemical sensing of Cu(II) supported with crystal structure and theoretical studies. **Analytical Methods** 2018, 10, 5643-5648.
10. Kaur, A.; Garg, S.; **Shiekh, B. A.**; et al. In Silico Studies and In Vivo MAO Inhibitory Activity of Coumarins Isolated from Angelica Archangelica Extract: An Approach Towards Antidepressant Activity. **ACS Omega** 2020, 5, 15069-15076.
11. **Shiekh, B. A.**; Kaur, D. The role of torsional motion on the properties of propiolic acid and its H/D isotopic analogs: A density functional study using SCTST and a full anharmonic VPT2 model. **Chem. Phys. Lett.** 2016, 646, 168-173.
12. **Shiekh, B. A.**; Kaur, D. The theoretical-cum-statistical approach for the investigation of reaction NO₂ + O(3P) → NO + O₂ using SCTST and a full anharmonic VPT2 model. **Chem. Phys. Lett.** 2016, 662, 244-249.
13. Kaur, R.; **Shiekh, B. A.**; Banipal, P. K.; Banipal, T. S. Unravelling the binding and Micellization behavior of dioctyl sulphosuccinate sodium salt with vitamin B1 and B6. A physiochemical and computational study. **Colloids and Surfaces A: Physiochemical and Engineering Aspects** 2020, 605, 125324.



14. Kaur, S.; **Shiekh, B. A.**; Kaur, D.; Kaur, I. Highly sensitive sensing of Fe(III) harnessing Schiff based ionophore: An electrochemical approach supported with spectroscopic and DFT studies. *J. Mol. Liq.* 2021, 333, 115954.
15. Kaur, S.; **Shiekh, B. A.**; Kumar, V.; Kaur, I. Triazole-tethered naphthalimide-ferrocenyl-chalcone based voltammetric and potentiometric sensors for selective electrochemical quantification of Copper (II) ions. *J. Electro. Chem.* 2021, 115966.
16. Kaur, R.; Kaur, D.; **Shiekh, B. A.** Effects of substituents and charge on the RCHO_X–Y halogen-bonded complexes. *Struct. Chem.* 2016, 27, 961-971.
17. **Shiekh, B. A.**; Kaur, D.; Kaur, R. Probing non-covalent interactions of phosphine and arsine derivatives: an energy decomposition analysis using localized molecular orbitals. *Struct. Chem.* 2019, 30, 2191-2204.

C.2. Conferences

2019: Paper entitled “Biomimetic Heterobimetallic Architecture of Ni(II) and Fe(II) for CO₂ Hydrogenation in Aqueous Media. A DFT Study” presented at 8th National Symposium on ‘Advances in Chemical Sciences’, in Amritsar India.

2018: Paper entitled “Biomimetic Self-assembled Computationally Designed Catalysts of Mo and W for Hydrogenation of CO₂/Dehydrogenation of HCOOH Inspired by the Active Site of Formate Dehydrogenase” presented at 7th National Symposium on ‘Advances in Chemical Sciences’ in Amritsar India

2015: Attended workshop on ‘Material Characterization Techniques’ organized by Guru Nanak Dev University Amritsar India.

2011: Attended ‘International Year of Chemistry’ Conference at National Chemical Laboratory, Pune’ India.

C.3. Teaching and Supervision

2022-23: Currently working as **Assistant Professor** at PG Department of Chemistry, Govt College for Women, Nawakadal Srinagar

2020-22: Worked as **Assistant Professor** in Department of Chemistry Govt. College Samba and Govt Degree College Pampore J&K, India.

2019: Taught Applied Chemistry Postgraduate students at Department of Chemistry, Guru Nanak Dev University Amritsar India.

2019: Laboratory Demonstrator to BSc Chemistry Students at Department of Chemistry, Guru Nanak Dev University Amritsar India.

2014-2019: Project Supervisor to Final Year Students of Postgraduate Students of Chemistry Department: Guru Nanak Dev University, Amritsar India.

C.4. Review Work

2019: Reviewed one research article for RSC Advances.