

SHABEER AHMAD MIAN (PhD)

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Summary of Qualification and Experiences:

Performing administrative, Teaching and Research responsibilities as an Assistant Professor Department of Physics University of Peshawar.

- BS Program Coordinator responsibilities in the department for, Admissions, fee collection, timetable, subject teachers & examination arrangement, result declaration and transcript preparation.
- Graduate Study Committee (GSC) responsibilities in Physics department.
- Worked as Assistant Director Higher Studies & Research (*ADHS&R*) and Research Associate in the Office of Research, Innovations & commercialization (*ORIC*), Islamia College University Peshawar.
- Experiences of Postdoctoral researcher in Korea Institute of Science and Technology and Korea Research Institute of Standards and Science.
- Research Collaborations with national and international universities and institutes.
- Obtained PhD in Nano Fusion Technology from Pusan National University South Korea.
- Master of Science in Physics from Kyungpook National University South Korea.
- Working experience as reviewer of American Chemical Society (ACS), Royal Society of Chemistry (RSC) advances, Current Analytical Chemistry (Cambridge) and Physical Chemistry and Chemical Physics (PCCP).

PROFESSIONAL EXPERIENCE

1. TEACHING & RESEARCH

- a. **Current Position:** Assistant Professor Department of Physics, University of Peshawar. From Feb 2016 ~ Till Date
- b. **Previous Position:** Assistant Professor Department of Physics, Islamia College University, From Sep 2014 ~ 15 Feb 2016
- c. **Post Doctorate:** Korea Institute of Science & Technology, From June 2013 ~ July 2014
- d. **Post Doctorate:** Korea Research Institute of Standards and Science, From Sep 2012 ~ May 2013
- e. **Research Assistant,** Pusan National University South Korea, From Sep 2007 ~ Aug 2012
- f. **Research Assistant,** Kyungpook National University South Korea, From March 2006~ Aug 2007

2. ADMINISTRATIVE

- a. **BS Program Coordinator** Department of Physics University of Peshawar, Courses Distribution, Teacher 's arrangement, Classes

arrangement's, Timetable, students counseling, Date sheet, Conduction of Mid and Final examination, and Result preparation & declaration, From Oct 2020 ~ Till date

- b. **Graduate Study Committee** member for two years till September 3rd, 2023, department of Physics University of Peshawar. To critically evaluate PhD/MS research proposal and guide students for writing up research proposal at the graduate level & approve the said to complete their study in the department of Physics.
- c. Member of the admission committees for BS & MSc in the department of Physics University of Peshawar-
- d. **Subject Specialist,** KP Public Service Commission for the post Lecturers, for One Week in **June 2016 & Aug 2017**
- e. **Assistant Director Higher Studies** Islamia College University, From Aug 2015 ~ Feb 2016
- f. **Research Associate** Office of Research Innovations & Commercialization (ORIC) Islamia College University Peshawar, From June 2015 ~ Feb 2016
- g. **Quality Control Supervisor & Monitor** EuronAid Peshawar, From Aug 2002 ~ Feb 2003

- h. *Science Teacher*, SunShine Public-School**
Peshawar, From Nov 1991 ~ Nov 1993

3. REVIEWER of JOURNAL'S

- a.** American Chemical Society (ACS)
- b.** Royal Society of Chemistry Advances
- c.** Current Analytical Chemistry
- d.** Physical Chemistry & Chemical Physics
- e.** International Journal of Hydrogen
- f.** International Research journal of Pure and Applied Chemistry

4. AWARDS

- a.** Certificate of excellence in reviewing for Physical Science International Journal
- b.** Density Functional Theory Study of Glycine adsorption on Silica Surface for Bio-adhesive materials, 2015 By Higher Education Commission (HEC) of Pakistan
- c.** Brain Korea (BK21) Doctoral Fellowship, Pusan National University South Korea
- d.** Korean Research Foundation (KRF) Doctoral Fellowship, Pusan National University South Korea

5. PROFESSIONAL DEVELOPMENT

- a.** *Google Ads for Beginners* Certificate from Coursera
- b.** *Position Elements on a Page with CSS* from Coursera
- c.** *The Data Scientist's Toolbox* from JOHNS HOPKIN University Coursera
- d.** Nominated for Seminar on "Intellectual Property Rights" from the Department of Physics University of Peshawar
- e.** Continuing Professional Development Programme, Patents and Their Outcomes & How to Write a Research Paper for High Impact Factor Journals
- f.** Managing Conflict at Workplace, The British Council Peshawar
- g.** Java Training for SUN Programmer Certification, Brains Post Graduate College of Information Technology
- h.** Senior Secretary of Science Society University of Peshawar

6. CERTIFICATES RECEIVED

- a.** *Organizing Committee Member* of the 1st international Conference on Emerging Trends in Material Sciences, Islamia College University Peshawar
- b.** *Oral presentation* in the 1st international Conference on Emerging Trends in Material Sciences, Islamia College University Peshawar
- c.** *Oral presentation* in the 1st international Conference on Biomedical Engineering & Medical Sciences, Sir Syed University of Engineering & Technology Karachi
- d.** *Workshop on Semester System: Rethinking Education*, Institute of Education & Research University of Peshawar
- e.** *Invited talk* on the Adhesion Mechanism of Bio-adhesive Materials in Marine Environment a DFT study Abdul Wali Khan University Mardan
- f.** *Keynote Speaker International Conference* on Engineering Science and Technology, Sir Syed University of Engineering & Technology Karachi
- g.** *Participated in CPEC Myth & Reality*, Islamia College University Peshawar
- h.** Materials Processing, Base Metal Extraction, Characterization, Properties and Their Economic & Energy Potential

7. EDUCATIONAL QUALIFICATION

- ❖ Ph.D. (2012), Computational Nano Fusion Technology *Pusan National University Korea*
 - **Title:** Density Functional Theory (DFT) Study of Catechol adhesion on Dry and Wet Silica Surfaces
- ❖ Ph.D. (2006 ~ 2007), Applied Physics, Department of Physics, *Kyungpook National University, Korea (Course Work only)*
- ❖ M.S (2006), Applied Physics, *Kyungpook National University Korea*
 - **Title:** Simulation Study for Tungsten Scintillator Calorimeter
- ❖ B. Sc (1994) Applied Physics, Islamia College Peshawar University Pakistan.

8. PATENT FILED

- a.** *Shabeer Ahmad Mian*, Zia Mohy Ud Din, Samir Iqbal, "Stimulus Controlled Detachment of the

Strongly Attached Mussel Adhesive Protein for Critical Biomedical and Technological Applications”
USPTO, USA & IPO, Pakistan.

9. PUBLICATIONS

Journal with Impact Factor	
1	<i>Materials Chemistry & Physics IF (4.3)</i>
1	<i>Materials Advances IF (5.2)</i>
1	<i>International Journal of Hydrogen IF (8.1)</i>
1	<i>ACS Applied Energy Materials IF (5.5)</i>
2	<i>Journal of Molecular Modelling IF (2.1)</i>
1	<i>Cancers IF (6.639)</i>
1	<i>Molecules IF (4.927)</i>
1	<i>New journal of Chemistry RSC IF (3.925)</i>
1	<i>Nature Scientific Reports IF (4.379)</i>
1	<i>Materials Today Communications IF (3.383)</i>
1	<i>ACS Energy & Fuels IF (3.605)</i>
1	<i>Material Chemistry & Physics IF (4.778)</i>
1	<i>Optick IF (2.97)</i>
1	<i>Journal of Carbon Research IF (NO)</i>
1	<i>Journal of Electronic Materials IF (2.047)</i>
1	<i>MOJ Biorg. Org. Chem. IF (NO)</i>
1	<i>Int. J. Biosen. Bioelectron IF (NO)</i>
1	<i>Journal of Chemistry IF (3.241)</i>
1	<i>Materials Science-Poland IF (0.889)</i>
3	<i>Materials Today: Proceedings 4</i>
1	<i>RSC Advances IF (4.036)</i>
1	<i>J. Appl. Electrochem. IF (2.925)</i>
1	<i>ACS Langmuir IF (4.331)</i>
3	<i>Bull. Korean Chem. Soc. IF (1.2419)</i>
1	<i>J. Nanosci. Nanotechnol IF (1.354)</i>
1	<i>Theo. Chem. Acc. IF (2.154)</i>
3	<i>J. Phys. Chem. C IF (4.177)</i>

10. RESEARCH SUPERVISION

Graduated Students		Enrolled Students
PhD	3	2
MS	38	1
BS	39	8
M. Sc	17	0

11. PROJECT COMPLETED

- Invitation program for Excellent Foreigner Student, as a Research Assistant in several projects of Korea Research Foundation Pusan National University South Korea.
- Participated as research assistant in National Project of Nano Fusion Technology under Korea Research Foundation, South Korea.
- Participated as Researcher Team member in the Collider Detector at Fermilab (CDF) Foundation, South Korea.
- Unrevealing Formation Mechanism of Solid Electrolyte Interface on Silicon Anode Using Ethylene Carbonate for Lithium-Ion Battery by Density Functional Theory Simulation
- Investigation of the Electronic and Optical Properties of Cadmium Sulphide (CdS), Cadmium Telluride (CdTe), Zinc Sulphide, Zinc Selenide (ZnSe), using Density Functional Theory Study (DFT)

12. RESEARCH COLLABORATIONS

- Prof. Dr. Joon Kyung Jang, Department of Nanoenergy Engineering, Pusan National University South Korea
- Dr. Bruce P. Lee, Associate Professor, Department of Biomedical Engineering, Michigan Technological University U.S.A.
- Dr. Eric Ganz, Associate Professor, School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota 55455, U.S.A.

- d. Research Collaboration with Ghulam Ishaq Khan Institute (GIKI) Using Supercomputer facility for Computational Nano Fusion Technology Department of Physics Islamia College Peshawar.
- e. Started Research Collaboration with Department of Physical Chemistry, Institute of Chemical Sciences University of Peshawar for sharing expertise and available resources.
- f. Dr. Ejaz Ahmad, Associate Professor, Abdul Wali Khan University Mardan, KP, Pakistan.

13. **SKILLS, EXPERTISE & RESEARCH INTERESTS**

- a. Data Scientist's Toolbox certificate from JOHN'S HOPKIN University
- b. Position Elements on a Page Course certificate
- c. Since 2003 working on Linux operating system, software's installation on parallel nodes.
- d. 14 years of experience in Density Functional Theory calculation using SIESTA, Gaussian, VASP, Molecular Dynamics simulation.
- e. Experience in handling all kind of Materials modelling software and data analysis using origin, VMD etc.
- f. Hands on experience on the surface interactions, physisorption, chemisorption, binding energy calculations.
- g. Structural, electronic, and optical properties calculation of intrinsic and extrinsic doped materials.
- h. Biomaterials, Energy materials, Gas sensing materials, black phosphorene, ZnO nanocage, thiomolybdate for hydrogen evolution and gas sensing & lung cancer detection, modification of carbon nanotube for targeted drug delivery.

Published Research Articles

1. Sheraz Ahmad, **Shabeer Ahmad Mian***, Akbar Hussain, Ejaz Ahmed, Muhammad Saleem Khan, Gul Rahman, Joonkyung Jang, Environmental carbonaceous aerosols conversion into methanol using a zinc-decorated ZnO nanocage, *Materials Chemistry and Physics*, 339, **2025**, 130648.
2. Sheraz Ahmad, Akbar Hussain, Shabeer Ahmad Mian*, Gul Rahman, Shaikat Ali and Joonkyung Jang, Sensing and conversion of carbon dioxide to methanol using Ag-decorated zinc oxide nanocatalyst, *Mater. Adv.*, **2024**, 5, 1119–1129.
3. NA Khan, G Rahman, SY Chae, AHA Shah, OS Joo, **Shabeer Ahmad Mian**, A Hussain, Boosting electrocatalytic hydrogen generation from water splitting with heterostructured MoS₂/NiFe₂O₄ composite in alkaline media, *international Journal of Hydrogen Energy*, **2024**, 261-271.
4. NA Khan, G Rahman, SY Chae, N Yoon, AHA Shah, Shabeer Ahmad Mian, Unraveling the electrocatalytic response of Zn-substituted nickel ferrite for overall water splitting, *ACS Applied Energy Materials*, **2024**, 4960-4974
5. Amjad Khan, Gul Rahman, Anwar Ul Haq, Sang Youn Chae, Shabeer Ahmad Mian, Shape Controlled Growth of Hierarchical Ni_xS_y on Stainless Steel by Solution Processing with Enhanced Electrochemical Energy Storage Performance, *New J. Chem.*, **2023**, 47 (28), 13269-13278.
6. Akbar Hussain, Abdur Rauf, Ejaz Ahmed, Muhammad Saleem Khan, Shabeer Ahmad Mian*, and Joonkyung Jang "Modulating Optoelectronic and Elastic Properties of Anatase TiO₂ for Photoelectrochemical Water Splitting" *Molecules* **2023**, 28(7), 3252.
7. Akbar Hussain, **Shabeer Ahmad Mian**, Ejaz. Ahmed, Joonkyung. Jang, Orchestrating the impact of antisites and vacancy defects