

Sehar Basheer

Date of birth: 28/08/1998 | **Nationality:** Pakistani | **Gender:** Female | **Phone number:** (+92) 3034614066 (Mobile) |
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● ABOUT ME

Passionate and dedicated chemistry enthusiast, eager to contribute to the field with a strong commitment to professional integrity and ethical standards. Adept at grasping complex concepts quickly and applying them effectively in practical settings, excited to collaborate with experienced professionals to deepen understanding and advance knowledge in the realm of chemistry.

● EDUCATION AND TRAINING

19/08/2024 – CURRENT Lahore, Pakistan

PHD - CHEMISTRY University of Education

Website <https://ue.edu.pk/> | **Final grade** 3.93

19/09/2022 – 21/10/2024 Lahore, Pakistan

MPHIL CHEMISTRY University of Education

Website <https://ue.edu.pk/> | **Final grade** 3.94 | **Thesis** Biobase MOF for encapsulation of Curcumin to enhance its bioavailability

09/2018 – 01/2021 Lahore, Pakistan

MASTER OF SCIENCE University of Punjab

Website <https://www.pu.edu.pk/> | **Field of study** Chemistry | **Final grade** 933/1200 |

Thesis Synthesis and structural studies of cobalt ferrite by co precipitation method

2021 – 2023

B.ED Allama Iqbal Open University

Website <https://www.aiou.edu.pk/> | **Field of study** Teacher training with subject specialisation | **Final grade** 1345/1800

2016 – 2018 Lahore, Pakistan

BACHELOR OF SCIENCE University of Punjab

Website <https://www.pu.edu.pk/> | **Field of study** Chemistry | **Final grade** 625/800

● WORK EXPERIENCE

 **BROOKFIELD IDEAL SCIENCE SCHOOL** – GUJRANWALA, PAKISTAN

SCIENCE SUBJECTS TEACHER – 2016 – 2018

 **NATIONAL SCIENCE COLLEGE FOR GIRLS** – GUJRANWALA, PAKISTAN

CHEMISTRY LECTURER – 01/11/2021 – 17/09/2022

 **AL-HAFIZ SCHOOL SYSTEM & ACADEMY** – LAHORE, PAKISTAN

CHEMISTRY TEACHER – 2023 – 2025

● PUBLICATIONS

2025

[Structural development of curcumin: A natural product arsenal for diverse therapeutic targets-seizing opportunities through serendipity and rational design](#)

Curcumin derivatives, modified forms of the natural compound found in turmeric, offer enhanced therapeutic potential compared to curcumin alone. These derivatives are designed to overcome limitations such as poor bioavailability and stability. They retain the beneficial properties of curcumin, such as antioxidant and anti-

inflammatory effects, while also exhibiting improved solubility and targeted activity against specific diseases or pathways. Research into curcumin derivatives includes preclinical studies demonstrating their efficacy and ongoing clinical trials to assess their safety and effectiveness in humans, highlighting their promising role in therapeutic development.

Authors: Sehar Basheer, Dr. Mahmood Ahmad | **Journal Name:** Journal of Molecular Structure | **Volume, Issue and Pages:** Volume 1324

2025

Sulfonamides as a Promising Scaffold in Drug Discovery: An Insightful Review on FDA-Approved Molecules, Synthesis Strategy, Medical Indication, and Their Binding Mode

Sulfonamides are a key scaffold in drug discovery, with wide-ranging biological activities. Since the 1930s, they have led to many FDA-approved drugs. This review highlights sulfonamide-based drugs approved from 2011 to 2024, covering their synthesis, medical uses, and mechanisms of action. It showcases their role in treating cancer, viral infections, inflammation, and more, and explores their action through enzyme inhibition and pathway modulation. The review emphasizes their structural diversity and encourages further research to develop safer, more effective sulfonamide-based therapies.

Authors: Sehar Basheer, Dr. Mahmood Ahmad | **Journal Name:** Chemistry and Biodiversity

2025

Development and characterization of a biodegradable film based on guar gum-gelatin@sodium alginate for a sustainable environment

Plastic pollution is a global crisis, and biodegradable plastics (BPs) offer a promising solution. This study developed biodegradable films using sodium alginate with guar gum, corn starch, and gelatin via solution casting. Plasticizers like glycerol, PVA, and latex were added to improve properties. Characterization techniques (SEM, TGA, FTIR, etc.) showed high degradability, strong tensile strength, and good structural features. The films exhibited porous structures and molecular interactions, suggesting their potential as effective biodegradable alternatives to conventional plastics.

Authors: Sehar Basheer, Dr. Mahmood Ahmad | **Journal Name:** Royal Society of Chemistry | **Volume, Issue and Pages:** DOI: 10.1039/D4RA03985H (Paper) RSC Adv., 2024, 14, 19349-19361

2025

Exploring the metal-organic frameworks as a versatile platform for curcumin delivery: An insightful review to overcome bioavailability challenges

This review delves into the potential of metal-organic frameworks (MOFs) as a versatile and efficient platform for curcumin delivery, aiming to address the major challenge of its low bioavailability. It examines how the unique properties of MOFs such as high surface area, tunable porosity, and structural flexibility can enhance curcumin's solubility, stability, and controlled release. The review also discusses various MOF based delivery strategies and their therapeutic implications, offering valuable insights into improving the clinical effectiveness of curcumin through advanced nanocarrier systems.

Submitted

Authors: Sehar Basheer, Dr. Mahmood Ahmad | **Journal Name:** Coordination Chemistry Reviews

● CONFERENCES AND SEMINARS

16/05/2023 – 18/05/2023 University of Education, Lahore

The 2nd International Conference on Trends and Research in Chemistry (TRIC 2023)

Participated in a three-day international conference on trends and research in chemistry at the Department of Chemistry. **TRIC 2023** is a key event for researchers, scientists, and industry professionals to discuss the latest trends and findings in chemistry. The conference features keynote speeches, plenary sessions, and poster presentations covering various chemistry topics. Special sessions focus on emerging areas like green chemistry and nanotechnology. **TRIC 2023** provides a platform for networking, collaboration, and the exchange of ideas among experts in the field.

06/11/2024 – 07/11/2024 University of Education, Lahore

The 3rd International Conference on Trends and Research in Chemistry (TRIC 2024)

Participated as a poster presenter at TRIC 2024, an international conference that brings together researchers, academics, and professionals to explore advancements in chemistry. The presented poster, titled "*Biobased MOF for Encapsulation of Curcumin to Enhance its Bioavailability*", focused on using metal-organic frameworks (MOFs) derived from biocompatible materials to improve the stability and delivery of curcumin. The work highlighted the potential of

MOFs to overcome curcumin's bioavailability challenges through encapsulation techniques. The event offered valuable opportunities for scholarly exchange and feedback from experts in materials chemistry, drug delivery, and nanotechnology.

HONOURS AND AWARDS

2018

Academic Excellence Scholarship – University of Punjab

Recipient of the Academic Excellence Scholarship, awarded for outstanding educational performance, demonstrating dedication and excellence in academics.

2020

Academic Excellence Scholarship – University of Punjab

Awarded the Academic Excellence Scholarship in recognition of exceptional academic performance and unwavering dedication to studies.

2023

PM'S NATIONAL LAPTOP SCHEME – Government of Pakistan

Proud recipient of the PM'S NATIONAL LAPTOP SCHEME, recognized for academic excellence and granted access to essential technology for educational advancement.

LANGUAGE SKILLS

Mother tongue(s): **URDU**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

RECOMMENDATIONS

Dr. Mahmood Ahmed Assistant Professor, University of Education, Lahore

Ms. Sehar Basheer is a highly dedicated and proficient student with strong analytical skills and a solid foundation in inorganic and analytical chemistry. Her research on MOFs, nanoparticles, and spectroscopic techniques, along with her teamwork and problem-solving abilities, make her an excellent candidate for PhD admission and funding consideration.

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Dr. Muhammad Ahmed Assistant Professor

Ms. Sehar Basheer has demonstrated exceptional research aptitude in surface chemistry and nanochemistry, with strong expertise in MOFs for biomedical applications. Her analytical skills, dedication, and passion for scientific innovation make her a highly promising candidate for your PhD program.

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