



Wahid Hussain

Pharm-D | M.Phil. Pharmaceutics | ✉ wahid.hussainn1999@gmail.com ☎ +92-3295986928

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Home: Village & P.O. Totakan, Tehsil Batkhela District Malakand, KP, 23050, Pakistan

Work: City University of Science & Information Technology (CUSIT) Dalazak Road, Pakha Ghulam, 25000 Peshawar (Pakistan)

RESEARCH OBJECTIVE

I am a pharmaceutical researcher having MPhil in Pharmaceutics and Drug Design (Pharmacy) from Quaid-i-Azam University, Islamabad, with a strong foundation and expertise in drug delivery systems and pharmaceutical nanotechnology. My goal is to develop next-generation drug delivery systems spanning nanomedicine, transdermal platforms, and cancer-targeted nanoformulations that directly improve patient outcomes. With hands-on laboratory expertise, international certifications, and a strong record of research supervision and academic teaching, I am prepared to contribute meaningfully to any world-class research group from day one.

EDUCATION

M.Phil. Pharmacy — Pharmaceutics

Quaid-i-Azam University (QAU), Islamabad, Pakistan | February 2023 – March 2025

GPA: 4.0 / 4.0 — | 50 Credit Hours

- Thesis: Transfersomal Hydrogel Carrying Carbamazepine for Epilepsy
- Supervised by Prof. Dr. Asim Ur Rehman, a leading national authority in nanomedicine.
- Research focus: Nanomedicine, Lipid-based DDS, Transdermal DDS, Vesicular Systems, Nanoparticle DDS, Bioavailability Enhancement, Pharmacokinetics, and comprehensive In Vitro / Ex Vivo / In Vivo studies.

Doctor of Pharmacy (Pharm-D)

Shaheed Benazir Bhutto University (SBBU), Sheringal, KP, Pakistan | October 2017 – December 2022

GPA: 3.7 / 4.0 | 198 Credit Hours

- Thesis: Overview of SARS-CoV-2 in Admitted Patients at Hayatabad Medical Complex (HMC), Peshawar
- an epidemiological and clinical pharmacy study conducted during the COVID-19 pandemic.
- Core disciplines: Pharmacology, Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy, and Forensic Pharmacy.
- Recipient of the Prime Minister Laptop Scheme Award (2019) for academic excellence.

PUBLICATION

[2025] Wahid Hussain, Naveed Ahmed, Dildar Khan, Noor Ullah, Fazal Hadi, Aneela Mumtaz, Asim Ur Rehman.

Transdermal Transfersomal Hydrogel: A Breakthrough in Carbamazepine Delivery for Effective Epilepsy Management.

Journal of Drug Delivery Science and Technology — Accepted 16 March 2025.

This peer-reviewed publication arose directly from the M.Phil. thesis work. It involves the design, optimization, and characterization of novel transfersomal vesicles loaded into a hydrogel matrix for transdermal delivery of carbamazepine, an antiepileptic drug with notoriously poor oral bioavailability. The formulation achieved significantly enhanced skin permeation and bioavailability compared to conventional gel, demonstrating clear clinical relevance for epilepsy management.

RESEARCH INTERESTS

◆ Nanomedicine & Nanoparticle DDS

◆ Lipid-based Drug Delivery Systems

◆ Transdermal & Targeted DDS

◆ Vesicular Systems (Transfersomes, Liposomes)

◆ Extracellular Vesicle-mediated DDS

◆ Bioavailability Enhancement

◆ Hydrogel-based Drug Delivery

◆ Neuropharmaceutics

◆ Cancer Nanotechnology

◆ Pharmacokinetics & ADMET

◆ Formulation Optimization (DoE)

◆ Preclinical & Clinical Research

WORK EXPERIENCE

Lecturer of Pharmacy (Pharmaceutics) | City University of Science & Information Technology (CUSIT), Peshawar

August 2025 – Present

An academic and research role combining teaching, curriculum leadership, and active research in pharmaceutical sciences at one of KP's prominent universities.

- Deliver comprehensive lectures and hands-on practical sessions in Pharmaceutical Sciences, Drug Delivery Systems, and Nanomedicine to undergraduate pharmacy students.
- Design and continuously update course curricula aligned with the latest advances in nanomedicine, targeted drug delivery, and formulation science.
- Supervise undergraduate final-year research projects and thesis work, mentoring students through experimental design, data analysis, and scientific writing.
- Provide academic, professional, and career mentorship to pharmacy students, fostering the next generation of pharmaceutical researchers.

Intern Pharmacist | MTI Hayatabad Medical Complex (HMC), Peshawar

February 2022 – April 2022

A structured clinical pharmacy internship in one of KP's largest tertiary-care teaching hospitals.

- Rotated across multiple hospital departments including inpatient wards, outpatient pharmacy, and intensive care units.
- Conducted dispensing, patient medication counselling, and drug utilization review under the supervision of senior clinical pharmacists.

Intern Pharmacist | DHQ Hospital Batkhela, Malakand, KP

February 2021 – April 2021

Community and district-level hospital pharmacy internship providing foundational clinical experience.

- Managed community and hospital pharmacy operations including prescription dispensing and patient medication management.

M.PHIL. THESIS HIGHLIGHTS

Thesis Title: Transfersomal Hydrogel Carrying Carbamazepine for Epilepsy

- Designed and synthesized novel transfersomal vesicles ultra-deformable lipid-based nanocarriers specifically engineered to penetrate the stratum corneum barrier for effective transdermal drug delivery of carbamazepine.
- Conducted rigorous in vitro drug release studies using Franz diffusion cell, ex vivo skin permeation assays using excised animal skin, and in vivo pharmacokinetic studies in animal models to validate therapeutic efficacy.
- Performed comprehensive physicochemical characterization including particle size, polydispersity index (PDI), zeta potential, entrapment efficiency, FTIR spectroscopy (compatibility studies).
- Optimized the formulation using Design of Experiments (DoE) via Design Expert software, a data-driven, systematic approach that significantly reduced experimental runs while maximizing predictive accuracy.
- Demonstrated statistically significant enhancement in transdermal drug flux and bioavailability compared to conventional Carbopol gel, a major finding with direct clinical implications for epilepsy patients who face gastric side effects with oral therapy.

CERTIFICATIONS

Introduction to Good Clinical Practice (GCP) | NOVARTIS — via Coursera

Covered ICH-GCP E6 guidelines, ethical principles for clinical research, informed consent procedures, adverse event reporting, and investigator responsibilities in conducting clinical trials.

Drug Development | University of California, San Diego — via Coursera

Comprehensive overview of the pharmaceutical drug development pipeline from target identification and preclinical studies through IND filing, Phase I–III clinical trials, FDA review, and post-marketing surveillance.

Clinical Trials Management and Advanced Operations | Johns Hopkins University — via Coursera

Advanced training in clinical trial design, protocol development, regulatory compliance (ICH/GCP), site management, data integrity, and adaptive trial methodologies used in modern pharmaceutical research.

TECHNICAL SKILLS

Laboratory & Formulation	In Vitro Drug Release Studies, Ex Vivo Permeation Assays, In Vivo Animal Studies, Formulation Development, Design of Experiments (DoE), Design Expert Software
Analytical & Characterization	FTIR Spectroscopy, DSC Thermal Analysis, Particle Size Measurement, Zeta Potential Analysis, Origin / GraphPad Software
Scientific & Professional	Scientific Writing & Publication, Statistical Data Analysis, MS Office Suite, Curriculum Development, Research Supervision

CONFERENCES & SEMINARS

- ICETEMS | International Conference on Emerging Trends in Engineering, Management & Health Sciences | CUSIT Peshawar | Presenter / Author (2025) Presented original research findings to an international audience of engineers, scientists, and healthcare professionals.
- Applied AI in Teaching: Extending Textbook Knowledge to Real-World Scenarios | CUSIT Peshawar | Attendee (2025) Participated in a faculty development workshop on integrating AI tools into pharmaceutical sciences education.
- Phytomedicine: Current and Future Perspective National Conference | SBBU Sheringal & UOM | Participant (2022) Attended a multidisciplinary national conference on herbal medicine, ethnopharmacology, and future directions in plant-based drug development.
- Setting Standards in Clinical Pharmacy Workshop | SBBU Sheringal | Participant (2021) Engaged in hands-on training sessions on clinical pharmacy standards, patient safety, and pharmacy practice quality improvement.

HONOURS & AWARDS

★ Fellowship for Outstanding Student Quaid-i-Azam University, Islamabad June 2023 Awarded in recognition of academic excellence and outstanding research performance during M.Phil. studies.	★ Prime Minister Laptop Scheme (Merit Award) Shaheed Benazir Bhutto University August 2019 Received a laptop through the PM merit-based award scheme for top-performing pharmacy students.
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LANGUAGES

Pashto Native / Mother Tongue	Urdu Proficient (C2)	English Proficient — C2 Reading/Writing, B2 Speaking
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ACADEMIC REFERENCES

Prof. Dr. Asim Ur Rehman MPhil Supervisor, QAU Islamabad arehman@qau.edu.pk +92-3229821867	Prof. Dr. Naveed Ahmed MPhil Co-Supervisor, QAU Islamabad natanoli@qau.edu.pk +92-3212466312	Prof. Dr. Hussain Ali Faculty, QAU Islamabad h.ali@qau.edu.pk +92-3471919606
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