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ABOUT ME

PhD in Pharmaceutics, specialization in nanomedicine, microneedle platforms, neuroscience, and advanced drug delivery technologies. Demonstrated expertise in the formulation, optimization, and characterization of polymeric and lipid-based nanocarriers for targeted therapeutic applications. Proficient in advanced analytical and molecular techniques, including HPLC, ELISA, IHC, molecular docking, and genetic assays. Backed by over six years of integrated research and teaching experience, with a strong record of peer-reviewed publications and international conference presentations. Recipient of the prestigious HEC Indigenous Scholarship, underscoring commitment to innovation and academic excellence in pharmaceutical sciences.

WORK EXPERIENCE

Muslim Youth University – Islamabad, Pakistan

Assistant Professor

[22/10/2024 – 01/10/2025]

Deliver lectures in pharmaceutics and related disciplines to undergraduate pharmacy students.
Supervise student research projects and mentor final-year theses.
Contribute to curriculum development and departmental research initiatives.
Engage in ongoing research in pharmaceutics, nanomedicine, and microneedle-based drug delivery

Ibadat International University Islamabad – Islamabad, Pakistan

Assistant Professor

[07/01/2026 – Current]

Teach Physical Pharmacy courses, labs, and tutorials to Pharm-D students per HEC guidelines
Conduct research* in pre-formulation, drug delivery, and physicochemical drug characterization
Supervise* FYP and MPhil/PhD research theses and mentor students academically
Publish* in peer-reviewed journals and apply for research grants
Contribute* to curriculum development, accreditation, and departmental activities

EDUCATION AND TRAINING

PhD

Quaid-i-Azam University [22/02/2019 – 28/08/2024]

City: Islamabad | Country: Pakistan | Level in EQF: EQF level 8 | Thesis: DISSOLVABLE MICRONEEDLES CARRYING GLUCOSE-LYSINE ORNAMENTED NANOCHOCLEATES OF ROFLUMILAST FOR MULTIPLE SCLEROSIS

This project focused on the design and development of a **microneedle-based transdermal delivery system** for Roflumilast, a phosphodiesterase-4 inhibitor with potential therapeutic benefits in multiple sclerosis. To enhance brain targeting and therapeutic efficacy, Roflumilast was encapsulated into **glucose-lysine ornamented nanochocleates**, providing improved stability, bioavailability, and site-specific delivery.

The work involved a multidisciplinary approach combining **nanotechnology, pharmaceutical formulation, and advanced drug delivery techniques**, including:

- Fabrication and characterization of **dissolvable polymeric microneedles**

- **Nanochocleate preparation and surface modification** with glucose-lysine conjugation
- **Physicochemical and morphological characterization** (particle size, zeta potential, SEM, FTIR, DSC, XRD)
- **Ex vivo skin permeation studies** using Franz diffusion cells
- **In vitro release kinetics** and stability assessment
- **Neuropharmacological evaluations** for assessing therapeutic potential against multiple sclerosis

This research demonstrates a novel **transdermal nanomedicine platform** capable of overcoming the limitations of oral drug delivery for neurological disorders, highlighting translational potential for clinical applications in **neurodegenerative disease management**.

MPhil

Quaid-i-Azam University [09/2016 – 10/2018]

City: Islamabad | **Country:** Pakistan | **Level in EQF:** EQF level 7 | **Thesis:** DEVELOPMENT OF LONG-ACTING ENEMA FOR INTRACOLONIC ADMINISTRATION OF VANCOMYCIN IN LIEU OF PEDIATRIC INFECTIOUS COLITIS THERAPY

his work focused on the **innovative development of a thermosensitive enema system** designed for localized and sustained intrarectal delivery of Vancomycin to manage **infectious and ulcerative colitis**, particularly in pediatric patients where systemic therapy presents limitations.

The study addressed the clinical challenge of *Clostridium difficile* overgrowth, which is a leading cause of antibiotic-associated colitis, by creating a **temperature-responsive formulation** that undergoes sol-to-gel transition at body temperature, ensuring prolonged mucosal contact and effective drug release at the target site.

Key highlights and techniques included:

- **Formulation of thermoresponsive polymeric gels** capable of intrarectal administration and in situ gelling.
- **Rheological and thermal analysis** to evaluate gelation behavior, viscosity, and structural stability.
- **In vitro release kinetics** demonstrating sustained Vancomycin delivery for extended therapeutic action.
- **Mucoadhesion studies** to ensure improved retention at the colonic mucosa.
- **Stability profiling** under gastrointestinal physiological conditions.

This research demonstrated the **potential of intrarectal, thermosensitive delivery systems** as a patient-friendly and effective alternative to conventional systemic administration, reducing drug exposure, minimizing side effects, and enhancing therapeutic efficacy in pediatric ulcerative colitis caused by *C. difficile* infection.

Pharm D

Quaid-i-Azam University Islamabad [08/2011 – 08/2016]

City: Islamabad | **Country:** Pakistan | **Field(s) of study:** Pharmacy | **Final grade:** CGPA: 3.8/4.0 (A) | **Level in EQF:** EQF level 6 | **Thesis:** Project: Comparison between Paracetamol and Nalbuphine in Burn Care Units of Pakistan Institute of Medical Sciences (PIMS) for Pain Management

F.Sc (Higher Secondary School Exam)

Punjab group of colleges [04/2009 – 05/2011]

City: Rawalpindi | **Country:** Pakistan | **Level in EQF:** EQF level 4

SSC (Secondary School Exam)

Beacon School System

City: Rawalpindi | **Country:** Pakistan | **Level in EQF:** EQF level 2

PUBLICATIONS

[2023]

Integrative validation method of Roflumilast by quantification and detection in lipid nanoparticles via reverse phase HPLC. Chemistry Africa.

Publisher: Willey

Chaudhery, I., Malik, M.N., Ur-Rehman, T., Fatima, H., Ur-Rehman, A., Ahmed, N., Elaissari, A. (2023). Integrative validation method of Roflumilast by quantification and detection in lipid nanoparticles via reverse phase HPLC. Chemistry Africa.

[2025]

Transdermal microneedle platform for enhanced delivery of Roflumilast encapsulated in Poly-L-Lysine glucose-coated nanochocleates targeting multiple sclerosis.

Publisher: Elsevier

Chaudhery, I., Ahmed, N., ... (2025). Transdermal microneedle platform for enhanced delivery of Roflumilast encapsulated in Poly-L-Lysine glucose-coated nanochocleates targeting multiple sclerosis. Journal of Drug Delivery Science and Technology,

[2020]

Design of enzyme decorated mucopermeating nanocarriers for eradication of H. pylori infection.

Publisher: Springer

Zafar, H., Kiani, M.H., Raza, F., Rauf, A., Chaudhery, I., ... (2020). Design of enzyme decorated mucopermeating nanocarriers for eradication of H. pylori infection. Journal of Nanoparticle Research.

[2021]

Polysaccharide chemistry in drug delivery, endocrinology, and vaccines.

Publisher: Willey

Khalida, A., Rehman, A.U., Ahmed, N., Chaudhery, I., Al-Jafary, M.A., Al-Suhaimi, E.A., Tarhini, M., Lebaz, N., Elaissari, A. (2021). Polysaccharide chemistry in drug delivery, endocrinology, and vaccines. Chemistry – A European Journal.

[2019]

Co-encapsulating CoFe₂O₄ and Methotrexate for hyperthermia.

Publisher: Willey

Ahmed, N., Saleh, N., Asad, M., Chaudhery, I., Malik, N. (2019). Co-encapsulating CoFe₂O₄ and Methotrexate for hyperthermia. IET Nanobiotechnology. Institution of Engineering and Technology (IET). <https://doi.org/10.1049/iet-nbt.2019.0148>

[2021]

Polymeric nanoparticles used in tissue engineering.

Hassan, N.U., Chaudhery, I., Ahmed, N. (2021). Polymeric nanoparticles used in tissue engineering. Advances in Polymeric Nanomaterials for Biomedical Applications.

[2024]

Folate-decorated chitosan–chondroitin sulfate nanoparticles loaded hydrogel for targeting macrophages against rheumatoid arthritis.

Publisher: Elsevier

Siddiqui, B., Rehman, A.U., Gul, R., Chaudhery, I., Shah, K.U., Ahmed, N. (2024). Folate-decorated chitosan–chondroitin sulfate nanoparticles loaded hydrogel for targeting macrophages against rheumatoid arthritis. Carbohydrate Polymers.

SKILLS

Microsoft Office / Microsoft Word / Microsoft Excel / Microsoft Powerpoint / Social Media / Analytical Techniques

LANGUAGE SKILLS

Mother tongue(s): Panjabi; Punjabi | Urdu

Other language(s):

English

LISTENING C1 READING C2 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

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

CONFERENCES AND SEMINARS

OIC, COMSTECH

International Conference on Nanomedicine Presented research on advanced nanomedicine platforms for neurological disorders.

Quaid-i-Azam University

Workshop on Research Methods in Pharmacy Practice and Clinical Pharmacy Training in advanced methodologies for clinical and pharmaceutical research.

Quaid-i-Azam University, Islamabad

Scientific Symposia on Pharmaceuticals and Drug Delivery Attended multiple national events focused on nanotechnology, targeted delivery, and neuropharmacology.

HONOURS AND AWARDS

[04/2009] Punjab group

Merit-Based Scholarship (HSSC Level) Awarded for outstanding performance in Higher Secondary School Certificate examinations, granted as a full **fee waiver**.

[09/2016] Quaid-i-Azam University Islamabad, Pakistan

University Fellowship Awarded Fellowship by Quaid-i-Azam University in recognition of academic excellence during MPhil studies.

[2019] Higher Education Commission (HEC) Pakistan

HEC Indigenous Scholarship (MPhil leading to PhD) Prestigious national award supporting advanced research training and studies.