

Current Address: Rawal College of Pharmacy.
Lethar road, Tramari, Almehraban town, Islamabad,
Pakistan.

Permanent Address: Moh: Umar Khail Khatky
Batkheila, district Malakand, KPK, Pakistan.

snawazpharmacist@gmail.com
Cell #: +8613162984008
+923139572272
WeChat: PharmD09
Nationality: Pakistan



Shah Nawaz Khan, Ph.D. School of Pharmacy, Shanghai Jiao Tong University.

Researcher ID: L-8302-2015

ORCID: 0000-0002-3052-3510

Previous Affiliations: Shanghai Jiao Tong University, University of Malakand, Gomal University.

Summary

A highly motivated and accomplished Pharmaceutical Chemist with a proven track record in organic synthesis, medicinal chemistry. With a PhD from Shanghai Jiao Tong University (SJTU), I specialize in photocatalytic decarboxylation and transition metal catalysis, developing novel synthetic methodologies and their applications in drug discovery. I have led and participated in multiple international research projects, with a focus on innovative solutions for biomedical applications and sustainable chemistry. With a strong foundation in both academic leadership and project management, I aim to contribute to cutting-edge scientific research and drive technological advancements, particularly in biomedical innovation.

Postdoctoral Fellowship, Medicinal Chemistry: Nov 2022 – Oct 2025

(3 Years)

School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, Shanghai, China

- Conducted total synthesis and second-generation derivatization of GR24, including C–C bond formation via Ullmann coupling.
- Conducted the synthesis of cyclopeptide CHP-9 and established its activity as a tyrosinase inhibitor.
- Completed advanced synthetic methodologies for complex small molecules with medicinal relevance and total synthesis of natural products. Includes total synthesis of nucleosides via dehydroxylative glycosidation and derivatization of shikonin,/alkannin hybride derivatives, including probe development for target identification and validation.

Funded Research Projects

Principal Investigator

Foreign Young Talent Program, National Research Funding of China

Project Title: *Total Synthesis of Natural Nucleoside Antibiotics and Their Applications in Medicinal Chemistry and Chemical Biology*

Project Code: QN2023134009 | Jan 2023 – Dec 2023

Specialty Area: Chemical Engineering

- Designed and executed efficient synthetic routes for natural nucleoside antibiotics.
- Optimized key reaction steps to improve yield, selectivity, and scalability.
- Integrated synthetic chemistry with biological evaluation to support applications in drug discovery and chemical biology.

Project Participant

Shanghai Science and Technology Innovation Action Plan

Project Title: *Mechanistic Research on Naphthoquinone Oxime Derivatives and Their Role in Anticancer Stem Cells*

Project Code: 23430761000 | Jun 2023 – May 2026

Specialty Area: Medicinal Chemistry

- Investigating the molecular mechanisms of naphthoquinone oxime derivatives in targeting cancer stem cells.
- Contributing to structure–activity relationship studies and mechanistic insights for anticancer drug development.
- Supporting the identification of novel therapeutic strategies through probe-based and mechanistic medicinal chemistry approaches.

Education:

Sep 2016 – June 2022 <i>Thesis Title</i>	Doctor of Philosophy, Pharmaceutical Chemistry. Photocatalytic decarboxylative C-O, C-C and C-N functionalization of carboxylic acids. School of Pharmacy, Shanghai Jiao Tong University.	Shanghai, China.
Feb 2012 – Nov 2014 <i>Thesis Title</i>	Master of Philosophy, Organic Synthesis. Pharmacological Activities & One-pot Two-step Synthesis of Amide derivative. Department of Pharmacy, University of Malakand.	KPK, Pakistan.
Aug 2004 – Oct 2009	Doctor of Pharmacy, Pharmaceutical Sciences. Faculty of Pharmacy, Gomal University.	KPK, Pakistan.

Publication Highlights:

1. Tingting Liu[#], Xingyue Chen[#], **Shah Nawaz Khan**, Xiaoxu Li, Bo Kong, Yingjun Zhou, Yangyan Li, Yuhua Ge, Gang Chen, Xu Deng: “Phytohormone Strigolactams Overcomes Oxaliplatin Resistance in Colorectal Cancer by Blocking the Late-Stage Autophagy to Tip the Metabolic Balance toward Ferroptosis.” *Journal of Medicinal Chemistry.*, 2025, 68(22), 24546–24559, DOI: [10.1021/acs.jmedchem.5c02567](https://doi.org/10.1021/acs.jmedchem.5c02567) (IF 7.1)
2. Huailong Chang, Kan Tao, Hu Huang, Jinping Jia, **Shah Nawaz Khan***, Jiahua Cui*: *Discovery of A Novel Cyclopeptide as Tyrosinase Inhibitor for Skin Lightening* *Skin Research and Technology.*, 2025, 31(9), e70207: DOI: [10.1111/srt.70207](https://doi.org/10.1111/srt.70207) (IF 2.59)
3. Wei Ding, Diwen Ying, Feng Hong, **Shah Nawaz Khan**, Yingping, Huang Jinping Jia: *Establishment and validation of a multiscale hydrodynamic cavitation model for radical yield: New insights into optimal pressure phenomenon* *Separation and Purification Technology.*, 2025, 379(3), 135187: DOI : [10.1016/j.seppur.2025.135187](https://doi.org/10.1016/j.seppur.2025.135187) (IF 8.1)
4. Jinhuan Cheng, Jiahua Cui, Jianxing Liang, **Shah Nawaz Khan**, Jinping Jia “Synergy between Oxygen Vacancies and Surface Plasmon Resonance Effect in of Bi@Vo-Bi2O3 for Efficient Photocatalytic Performance under Visible Light ” *ChemSusChem.*, 2025, 18(12), e202402175: DOI: [10.1002/cssc.202402175](https://doi.org/10.1002/cssc.202402175) (IF 8.4)
5. Shouyan Xiang[#], Yubei Li[#], Shah Nawaz Kha*, Weixin Zhang, Jiahua Cui*: “Exploiting the Antimicrobial Potential of Naphthoquinone Derivatives: Recent Advances and Future Prospects.” *Pharmaceuticals.*, 2025, 18(3), 350: DOI: [10.3390/ph18030350](https://doi.org/10.3390/ph18030350) (IF 4.3)
6. Wei Ding, Feng Hong, Diwen Ying, Yingping Huang, **Shah Nawaz Khan**, Jinping Jia: “A Comprehensive Study on the Effects of Annular Protrusion for Cavitation Intensification in Venturi Tubes” *Chemical Engineering Journal.*, 2024, 498, 155306: DOI: [10.1016/j.cej.2024.155306](https://doi.org/10.1016/j.cej.2024.155306) (IF 13.4)
7. Yuhua Ge, Xingyue Chen, **Shah Nawaz Khan**, Shuhe Jia, Gang Chen, “Synthesis and germination activity study of novel strigolactam/strigolactone analogues.” *Tetrahedron Letters.* , 2023, 115, 154315: DOI: [10.1016/j.tetlet.2022.154315](https://doi.org/10.1016/j.tetlet.2022.154315) (IF 1.5)
8. Muhammad Kashif Zaman, **Shah Nawaz Khan**, Yuanyuan Cai, Zhankui Sun, “Photocatalytic Decarboxylative Oxidation of Carboxylic Acids Using Molecular Oxygen.” *Synlett.*, 2023; 34(17): 2029–2033: DOI: [10.1055/a-2102-7006](https://doi.org/10.1055/a-2102-7006) (IF 1.6)

9. Li Ruining*, Ya Dong*, **Shah Nawaz Khan**, Muhammad Kashif Zaman, and Zhankui Sun* "Decarboxylative oxidation enabled consecutive C-C bond cleavage." *Nature communication.*, 2022, 3, 7061: DOI: [10.1038/s41467-022-34829-x](https://doi.org/10.1038/s41467-022-34829-x) (IF 15.7)
10. **Shah Nawaz Khan**, Muhammad Kashif Zaman, Ruining Li, and Zhankui Sun: "A General Method for Photocatalytic Decarboxylative Hydroxylation of Carboxylic Acids." *Journal of Organic Chemistry.*, 2020, 85, 7, 5019–5026: DOI: [10.1021/acs.joc.0c00312](https://doi.org/10.1021/acs.joc.0c00312) (IF 4.3)
11. Shuai Shi, **Shah Nawaz Khan**, Muhammad Kashif Zaman and Zhankui Sun: "Advances in Enantioselective C–H Activation/Mizoroki–Heck Reaction and Suzuki Reaction." *Catalysis.*, 2018, 8(2), 90: DOI: [10.3390/catal8020090](https://doi.org/10.3390/catal8020090) (IF 3.5)
12. Mohammad Shoaib, Shah, Syed Wadood Ali Shah, Shafiullah, **Shah Nawaz Khan**, Muhammad Naeem Ahmed: "Synthesis, characterization and antinociceptive activities of Novel 2-(2,4-dichlorophenyl)-4H-chromen-4-one." *Pakistan Journal of Pharmaceutical Science.*, 2017, 30(6):2085-2089: PMID: [29175777](https://pubmed.ncbi.nlm.nih.gov/29175777/) (IF 0.7)
13. Aftab Ali Shah, Hazir Muhammad, Nadia Farooqi, Nigar Gul, Ayaz Ali Khan, Gulam Nabi, **Shah Nawaz Khan**: "Association of TORCH Agents with Spontaneous Abortion in Patients with Bad Obstetric History." *World Journal of Zoology.*, 2015, 10(4): 291-294: DOI: [10.5829/idosi.wjz.2015.10.4.9614](https://doi.org/10.5829/idosi.wjz.2015.10.4.9614)
14. **Shah Nawaz Khan**, Mohammad Shoaib, Sayed Wadood Ali Shah, Muhammad Shuaib, Hazir Mohammad, Ghulam Nabi: "Pharmacological Activities and One Pot Two Step Synthesis of Novel (E)-N-(1-methyl-4-oxoimidazolidin-2-ylidene)benzamide." *World Journal of Zoology.*, 2015, 10(4): 241-246: DOI: [10.5829/idosi.wjz.2015.10.4.95261](https://doi.org/10.5829/idosi.wjz.2015.10.4.95261)
15. Ghulam Nabi, Hazir Muhammad, **Shah Nawaz Khan**, Amir Abdullah Khan: "Etiological Factors of Esophageal Cancer." *American-Eurasian Journal of Toxicological Sciences.*, 2015, 7(3): 188-197: DOI: [10.5829/idosi.aejts.2015.7.3.94286](https://doi.org/10.5829/idosi.aejts.2015.7.3.94286)

Teaching Experience:

(4 Years, 7 Months)

1. **Rawal College of Pharmacy Islamabad Pakistan (Nov 2025 - Present)**
Assistant Professor Department of Pharmacy.
 - Teaching undergraduate and professional (Pharm-D) courses i-e Pharmaceutical chemistry-III, Pharmacognosy-II (Advanced) and Pharmacy Practice-VIII, in accordance with HEC guidelines.
 - Contributing to curriculum development, assessment design, and academic quality assurance.
 - Participating in departmental committees, examinations, and academic administration.
 - Assisting in admission, migration and student affair activities.
2. **Vertex Institute of Science and Technology Abbottabad, KPK, Pakistan (Jan 2020 - Oct 2022).**
Deputy Director Academics and Assistant Professor Department of Pharmacy.
 - Delivered lectures in Pharmacology, and allied sciences subjects.
 - Managed academic planning, timetabling, faculty coordination, and implementation of regulatory requirements.
 - Led curriculum mapping, examination moderation, and academic audits.
 - Coordinated between faculty and administration to maintain academic standards and compliance.
 - Supported institutional accreditation and quality enhancement processes.
3. **Liaquat Institute of Medical Sciences, Batkhela, KPK, Pakistan (Dec 2014 – Aug 2016).**
Lecturer, Pharmacology.

- Delivered lectures in pharmacology and therapeutics to paramedical diploma-level students.
- Conducted practical classes and assessments in core pharmacology subjects.
- Contributed to curriculum delivery and academic coordination within the department.

Professional Experience:

(3 Years)

1. Stanley Pharmaceuticals, Peshawar, KPK, Pakistan (Apr 2009 - Feb 2012).

Quality Control Analyst:

- Performed quality control testing of raw materials, in-process samples, and finished pharmaceutical products.
- Conducted pharmacopeial analyses using titration, UV-Vis spectroscopy, dissolution, and related methods.
- Maintained GMP documentation, batch records, and analytical reports.
- Assisted in stability studies, deviation handling, and compliance with regulatory standards.
- Gained practical exposure to pharmaceutical manufacturing and quality assurance systems.

2. Clinical Internship, Institute of Child Health Lahore: Oct 15 2008 - Nov 30 2008 Lahore, Pakistan.

Skills and Techniques:

<i>Laboratory Skills:</i>	• Organic Synthesis and Medicinal Chemistry: Expertise in developing new methodologies for small molecules, total synthesis of natural product & nucleosides, multi-step and from micro-to-multigram synthesis. • Photocatalysis and Transition Metal Catalysis: Specialized in photocatalytic decarboxylation and functionalization reactions (C-O, C-C, C-N) using Photoredox, transition metal, and organometallic catalysis.
<i>Advanced Analytical Techniques:</i>	• Proficient in NMR, HPLC, GC-MS, LC-MS, HRMS, IR, and singlecrystal X-ray diffraction (SCXRD) for molecular structure elucidation. • Experienced in chromatographic techniques for compound isolation and purification, HPLC MPLC. Successfully managed and led several research projects in organic synthesis, medicinal chemistry, and drug discovery.
<i>Project Management and Leadership</i>	• Successfully managed research projects, including funding applications, team leadership, and milestone management. • Led research teams in organic synthesis, medicinal chemistry, and chemical biology projects, guiding them to successful completion.
<i>Research and Data Analysis Tools</i>	• Skilled in using scientific software for research, including Reaxys, SciFinder for literature search, Chem Office and MestReNova for chemical structure analysis, Agilent Mass Hunter Workstation and Peak View for mass spectrometry analysis, GraphPad for data analysis and visualization and Endnote for managing bibliographic references.
<i>Problem Solving and Critical Thinking</i>	• Expertise in Structure-Activity Relationship (SAR) analysis to guide the design and optimization of biologically active molecules. • Strong problem-solving skills in optimizing reactions, troubleshooting synthetic pathways, and overcoming technical challenges in the lab.
<i>Molecular Docking</i>	• Skilled in Autodoc tools, Autodoc Vina, MgTools, Discovery Studio, Pymol, PRAS, Open Babel, Avogadro
<i>Computer Skills</i>	• MS Office, Hardware and software troubleshooting.
<i>Languages:</i>	• English (bilingual / Professional), Pashto (Native), Urdu (Native) and Hindi (working proficiency) with basic proficiency in Chinese.

Awards and certificates:

Certificate of appreciation for organizing a Two-day workshop on Faculty Capacity Building.	2022
Certificate of appreciation for organizing a one-day seminar on the Scope of Allied Health Science.	2021
Certificate of appreciation for organizing one one-day seminar on Nursing and the history of nursing.	2020
Personal Protective Equipment Training certificate (awarded by Gov. of Pakistan).	2020
CSC Type A Scholarship (fully funded scholarship).	2016
Certificate of participation "GSK Gold challenge special edition."	2010
The organizer of all Pakistan declamation contests (Gomal University D.I. Khan).	2008
Organizing function (Alumni, Gomal University D.I. Khan).	2007
More than 10 certificates in sports were obtained during my educational career.	

Reference:

References will be furnished upon request