Dr. Khuram Shahzad

Date of birth: 01/06/1986 | Place of birth: Sheikhupura, Pakistan | Nationality: Pakistani | Phone: (+92) 3333660658 (Mobile) | Email address: Khuram1439@gmail.com | Whatsapp Messenger: 3333660658 | Address: Department of Physics, Baba Guru Nanak University, 39100, Nankana Sahib, Pakistan (Home) | https://sites.google.com/view/drkhuramshahzad/home

About me

"I hold a Ph.D. in Physics from Air University Islamabad Pakistan in (2021), specializing in Magnetoelectric Nanocomposites for Targeted Drug Delivery. During my doctoral studies, I delved deeply into Colloidal synthesis of Drug attached Magnetoelectric Nanocarriers for in-vitro studies, and had the privilege of contributing to many international peer review Q1 Impact factor journals.

Work experience

Assistant Professor (IPFP) | Baba Grounanak University Pakistan | 28/02/2024 - Current | Nankana Sahab, Pakistan

Teaching

Research

Administrative Work

Visiting Faculty | Department of Physics Women University Rawalpindi | 09/08/2021 - 08/01/2023 | Rawalpindi, Pakistan

Research Assistant | Department of Physics, Air University, Sector E-9, Islamabad (Pakistan) | 01/07/2019 - 01/07/2021 | Islamabad, Pakistan

Development of Nanocarriers used for Targeted Drug Delivery on Cancer Cells In vitro and In vivo

Visiting Faculty | Iqra University, Islamabad | 08/09/2022 - 04/02/2023 | Islamabad, Pakistan

Visiting Faculty | Department of Physics Air University, Islamabad | 01/03/2021 - 15/01/2024 | Islamabad, Pakistan

Education & Training

PhD. Physics | Air University, Islamabad (Pakistan) | 01/09/2016 - 01/07/2021 | Islamabad, Pakistan

Colloidal Synthesis of different types of nanoparticles using chemical synthesis methods, their surface functionalization, and targeted drug release in vitro

Field of study Natural sciences | **Final grade:** 3.56 CGPA | **Level in EQF** 6 | **Thesis:** Magnetoelectric Nanocomposites for biological applications (targeted drug delivery) in vitro | **Address:** 46000

M.Phil Physics | Federal Urdu University of Arts, Science and Technology | 08/10/2011 - 10/03/2014 | Pakistan

Synthesis of nanoparticles using chemical synthesis method.

Field of study Natural Science | **Final grade:** 3.82 CGPA | **Level in EQF** 4 | **Thesis:** STRUCTURAL AND MAGNETIC PROPERTIES OF CoFe-CoFe2O4 NANOPARTICLES

Honours and Awards

Gold Medal Merit Certificate (M.Phil Physics) | FUUAST | 01/04/2014

Secured first class first position in M.Phil Physics

Best Poster Award in ICNN 2013 | FUUAST | 09/03/2013

Best Poster Award in an International Conference on Nanomaterial and Nanotechnology 2013.

Publications

PEGylated Fe3O4@Ti3C2 MXene quantum dots for in vitro photothermal cancer therapy

2025. Elsevier Materials Chemistry and Physics

Khuram Shahzad a , Muhammad Ali Abbasi b , Sadaf Mushtaq c , Muhammad Farzik Ijaz f , Denis V. Danilov d , Nageen Naz e , Anna Pestereva b , Muhammad Zaman a , Naseeb Ahmad a , Anna Orlova b

https://doi.org/10.1016/j.matchemphys.2025.130888

https://www.sciencedirect.com/science/article/abs/pii/S0254058425005346

Fabrication and Characterization of Fe3O4/MXene Composite Nanofiber Membranes for Synergistic Photothermal/Chemotherapy

2025. Elsevier Journal of Drug Delivery Science and Technology

Haiyan Cao, Muhammad Farzik Ijaz, Wenbin Song, Khuram Shahzad, Sadaf Mushtaq, Yasir Iqbal

https://www.sciencedirect.com/science/article/pii/S1773224725004642

https://www.sciencedirect.com/science/article/pii/S1773224725004642

Z-scheme Ti3C2 MXene@ CeO2 heterostructures for efficient and secondary pollution free photodegradation of pharmaceutical drug

2025. Nano Materials Science

Muhammad Ali Abbasi, Anna Pestereva, Khuram Shahzad, Madiha Khan, Neri Giovanni, Mika Sillanpää, Enza Fazio. Corsaro, Anna Orlova

https://www.sciencedirect.com/science/article/pii/S2589965125000492

https://www.sciencedirect.com/science/article/pii/S2589965125000492

Cobalt iron oxide nanorods with multi functions: solvothermal synthesis and characterizations as potent antimicrobial agent and photocatalyst

2025. Environmental Nanotechnology, Monitoring & Management

Bushra Uzair a , Zukhra Abbasi a , Basma Gul a , Zulqurnain Ali b , Khuram Shahzad b , Sadaf Mushtaq c , Farid Menaa description...

https://www.sciencedirect.com/science/article/abs/pii/S2215153225000406

Moringa Gum derived Biocompatible Core@ Shell Fe3O4@ Tiƒ C, MXene Nan Photothermal Cancer Therapy

Abdinn Albadri, Muhammad Farzik Ijaz, Yamen El Touati, Nidhal Ben Khedher, Khuram Shahzad, Sadaf Mushtaq, Madiha Khan (2025). Science Direct Materials Today Communications 49, 113972.

https://www.sciencedirect.com/science/article/abs/pii/S2352492825024845

Fabrication and characterization of ZnO/Ag nanocomposite using phoenix dactylifera mucilage for antibacterial applications

A. Iqbal a , M. F. Ijaz b* , M. A. Dilbraiz c , T. Tahir d , I. Ahmed e , Y. Iqbal a, f,* , K. Shahzad g (2025). BioResources 3, 3, .

https://www.chalcogen.ro/173_IqbalA.pdf

Multifunctional magnetic SiO,/Feƒ O„@ MXene nanofiber membranes for reu organic dyes from industrial wastewater

Jiang Rong, Bi Haipeng, Muhammad Farzik Ijaz, Khuram Shahzad, Sadaf Mushtaq, Yasir Iqbal (2025). Elsevier Inorganic Chemistry Communications

https://www.sciencedirect.com/science/article/abs/pii/S1387700325017964

Exchange bias behavior in cobalt ferrite-cobalt oxide CoFe2O4/CoO nanocomposites for data storage applications

2024. Khuram Shahzad et al 2024 Phys. Scr. 99 085942.

Khuram Shahzad1,, Muhammad Ali Abbasi2, Ayesha Jabeen3, Muhammad Zaman1, Umar Shehzad1 and Muhammad Hassan Rafe4

Physica Scripta, Volume 99, Number 8

Citation Khuram Shahzad et al 2024 Phys. Scr. 99 085942DOI 10.1088/1402-4896/ad5e0e

https://automatedtest.iopscience.iop.org/article/10.1088/1402-4896/ad5e0e

Doxorubicin-loaded Core@Shell Cobalt Ferrite-Barium Titanate Magnetoelectric Nanofibers for Improved Anticancer Activity

2024. iop Biomedical Materials. Biomedical Materials

Khuram Shahzad1, Muhammad Ali Abbasi2*, Muhammad Hassan Rafe3, Anna Pestereva2 Faheem Ullah4, Muhammad Zaman1, Muhammad Irfan1, Muhammad Afzal1, Anna Orlova2*,

Structure–Property Behavior of Nanofibers Based on Polyacrylonitrile/Mesoporous Silica (SBA-15) Composites Prepared by Electrospinning

2023. Arabian Journal for Science and Engineering

Muhammad Hassan Rafe, Khuram Shahzad, Ludovic Josien, Magali Bonne, Elham Mohsenzadeh,Christelle Delaite, Benedicte Lebeau, Muhammad Anam Khubaib & Dominique C. Adolphe

https://link.springer.com/article/10.1007/s13369-023-08320-8

Magnetoelectric core–shell CoFe 2 O 4@ BaTiO 3 nanorods: their role in drug delivery and effect on multidrug resistance pump activity in vitro

2022. RCS Advances.

Sadaf Mushtaq, Khuram Shahzad, Muhammad Rizwan, Anwar Ul-Hamid, Bilal Haider Abbasi, Waqas Khalid, Muhammad Atif, Nafees Ahmad, Zulqurnain Ali and Rashda Abbasi

https://doi.org/10.1039/D2RA03429H

Drug Response Prediction of Liver Cancer Cell Line Using Deep Learning

2022. COMPUTERS, MATERIALS AND CONTINUA #G@548B5;8: Tech Science P

Mehdi Hassan, Safdar Ali, Muhammad Sanaullah, Khuram Shahzad, Sadaf Mushtaq, Rashda Abbasi, Zulqurnain Ali, Hani Alquhayz

https://doi.org/10.32604/cmc.2022.020055

Optical, morphological, and impedance characteristics of Ni (x)–(CdO)(1-x) nanofibers fabricated by electrospinning technique

2022. Materials Science and Engineering: B.

Zahid Qamar, Taj Muhammad Khan, Zain Ul Abideen, Khuram Shahzad, Ather Hassan, Salah Uddin Khan, Sajjad Haider, Muhammad Saeed Akhtar

https://doi.org/10.1016/j.mseb.2022.115779

Biocompatibility and cytotoxicity in vitro of surface-functionalized drug-loaded spinel ferrite nanoparticles

2021. Beilstein Journal of Nanotechnology.

Sadaf Mushtaq, Khuram Shahzad, Tariq Saeed, Anwar Ul-Hamid, Bilal Haider Abbasi, Nafees Ahmad, Waqas Khalid, Muhammad Atif, Zulqurnain Ali, Rashda Abbasi

https://doi.org/10.3762/bjnano.12.99

Structural, magnetic, and dielectric properties of Ti 4 +" M 2 + co-doped hexaferrites (M = Co 2 + , Ni 2 + , Zn 2 +)

2021. Ceramics International.

M Atif, S Ullah, Atta Ur Rehman, K Shahzad, W Khalid, Z Ali, Y Chen, H Guo, M Nadeem

https://www.sciencedirect.com/science/article/pii/S0272884221004442?via%253Dihub

Phase pure synthesis of lanthanum doped bismuth ferrite nanostructures for the adsorption of doxorubicin

2021. Ceramics International.

Muhammad Ali Abbasi, Zeeshan Ali, Zahid Qamar, Khurram Shahzad, Humera Khatoon Siddiqui, Muhammad Atif, Zulqurnain Ali, Waqas Khalid

https://www.sciencedirect.com/science/article/pii/S0272884221003539?via%253Dihub

Field-controlled magnetoelectric core-shell CoFe2O4@BaTiO3 nanoparticles as effective drug carriers and drug release in vitro

2020. Materials Science and Engineering: C.

Khuram Shahzad , Sadaf Mushtaq , Muhammad Rizwan, Waqas Khalid, Muhammad Atif, Fakhar Ud Din, Nafees Ahmad, Rashda Abbasi, Zulqurnain Ali

https://doi.org/10.1016/j.msec.2020.111444

Effect of Magnesium Substitution on Structural, Magnetic and Biological Activity of Co(1-x)Mg(x)Fe2O4 Nano-colloids

2020.

Khuram Shahzad, Sadaf Mushtaq, Shehreyar Shah, Farukh Bashir Kayani, Waqas Khalid, Muhammad Atif, Rashda Abbasi & Zulqurnain Ali

https://link.springer.com/article/10.1007%252Fs10876-020-01862-z

Effect of lanthanum substitution on shape and cytotoxicity of zinc oxide (LaxZn1-XO) nano-colloids

2019. Materials Research Express.

Khuram Shahzad5,1, Sadaf Mushtaq2, Sara Akhtar3, Kiran Yaseen1, Faheem Amin4 and Zulqurnain Ali5,1

DOI%2010.1088/2053-1591/ab024e

Antibacterial and antiviral potential of colloidal Titanium dioxide (TiO2) nanoparticles suitable for biological applications

2019. Materials Research Express.

Sara Akhtar1, Khuram Shahzad2, Sadaf Mushtaq3, Iftikhar Ali1, Muhammad Hassan Rafe4 and Syed Muhammad Fazal-ul-Karim5

DOI%2010.1088/2053-1591/ab3b27

Synthesis and characterization of amphotericin B stabilized gold nanoparticles sensor for detection of clindamycin drug

2019. Materials Research Express.

Sara Akhtar, Khuram Shahzad, Sadaf Mushtaq, Fayaz Safi, Iftikhar Ali, Khurshid Aslam Bhatti

DOI%2010.1088/2053-1591/ab193f

In Vitro Cytotoxicity of Secondary Metabolites Extracted from Pseudomonas aeruginosa BS25 Strain

2019.

https://link.springer.com/article/10.1007/s13369-019-04092-2

Skills

Origin Pro | %ª Reference Management softwares Zotero, EndNote, Mendeley | Xpert HighScore | Rietveld programs (Maud, GSAS, FullProf) | Gatan Microscopy software | Imaje J | SEM, XRD, OM & TEM | Surface Functionalization of Nanocomposites | Colloidal Synthesis of Nanoparticles | Microsoft Office (Word , Excel and Power Point)

Language Skills

Mother tongue(s): **Panjabi; Punjabi**

	Understanding		Speaking		Writing
	Listening	Reading	Spoken production	Spoken interaction	

English			
Urdu			

Conferences & Seminars

International Conference on Physics | 17/05/2022 - 19/05/2022 | Islamabad, Pakistan

Oral Talk on Ferromagnetic / Ferroelectric core@shell nanocomposites for targeted drug delivery in vitro

Member of organizing team for international conference

International Conference on Physics | 19/05/2017 - 22/05/2017 | Pakistan

Oral Talk on Colloidal synthesis and surface functionalization of Mangetoelectricc core@shell nanocomposites for targeted drug delivery in vitro

International Conference on Nanomaterial and Nanotechnology (ICNN) | 09/03/2014 - 13/03/2014 | FUUAST Karachi

Member of organizing team for international conference on nanomaterial and nanotechnology March 2014 at FUUAST Karachi.

Scientific talk and Poster presentation on topic " Effect of exchange bias phenomena in core-shell CoFe@CoFe2O4 nanoparticles.

ICICTT 2013 | 02/09/2013 - 05/09/2013 | Karachi

Computer simulation of Magnetic Phenoneon in Nanoparticles

Communication and interpersonal skills

Good Presentation and written communication skills gained through teaching experience and scientific talks.