Amna Safdar

Assistant Professor

School of Chemical & Materials Engineering

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About

Dr. Amna Safdar is working as Assistant Professor in the School of Chemical & Materials Engineering. Dr. Amna Safdar has a PhD in Solar Energy Materials And Devices. Dr. Amna Safdar has published 25 research articles & conference papers having a citation count of 386, carried out 4 projects and filed 0 intellectual property.

Qualifications

PhD in Solar Energy Materials And Devices 2018 - 2018
University of York , United Kingdom

MS in Surface And Material Engineering 2011 - 2013
NUST, Islamabad , Pakistan

BS in Physics 2006 - 2010
BZU, Multan , Pakistan

Experience

Assistant Professor 2021- Present
School of Chemical & Materials Engineering

Assistant Professor 2018 - 2021
School of Chemical & Materials Engineering

Assistant Professor 2018 - 2018
School of Chemical & Materials Engineering

Awards

Silver Medallist 2010
Silver Medallist (2nd Position holder in BS Physics 4 year program)

President Gold Medallist
President Gold Medallist in MS (NUST, 2013)

Professional Memberships

ASS

Research Projects

National Projects

PAK-UK Education Gateway Mobility Partnership Grant for Faculty 2023

Funding Agency: British Council, UK
Amount: PKR 40,227,000.00
Status: Completed

Exploration of experimental and computational synergetic analysis of 2D nanomaterials based mixed matrix membranes for carbon capture 2023

Funding Agency: National University of Sciences and Technology Islamabad Pakistan
Amount: PKR 1,000,000.00
Status: Completed

Fabrication of Highly Stable Perovskite and All Oxide Solar Cells for Their Application as Solar Windows for Renewable Electricity Generation 2024

Funding Agency: Pakistan Science Foundation
Amount: PKR 2,215,860.00
Status: Approved_inprocess

Fabrication of high efficiency perovskite solar cells for their application as solar windows for renewable electricity generation 2022

Funding Agency: NUST Research Fund (Grant for Young Researchers)
Amount: PKR 1,000,000.00
Status: Approved_inprocess

International Projects

Research Articles

Ultra-low concentration and flame-retardant electrolyte for next-generation lithium metal batteries 2025

Ziye Wang Qianchen Wang Yingshuai Wang Tinglu Song Yuhang Xin Qingbo Zhou Lei Liu Amna Safdar Feng Wu Hongcai Gao
Journal of Colloid and Interface Science, Volume 697, Article Number 137949

Impact Factor: 9.400 | **Quartile:** 1
DOI: https://doi.org/10.1016/j.jcis.2025.137949

Advanced Cellulose Triacetate-Based Mixed Matrix Membranes Enhanced by Bimetallic Ni-Cu-BTC MOFs for CO2/CH4 Separation 2025

Esha Asad Ayesha Raza Amna Safdar Muhammad Nouman Aslam Khan Humais Roafi
Polymers, Volume 17(16), Article Number 2258

Impact Factor: 4.900 | **Quartile:** 1
DOI: https://doi.org/10.3390/polym17162258

Investigating the synergistic effect of defect rich V2O5/MWCNTs heterostructure for improved electrochemical performance of supercapacitors† 2025

Usama Younas Shakeel Abbas Amina Zafar Saqib Javed Atia Khalid Shafqat Hussain Shafqat Karim Yasir Faiz Faisal Faiz Amna Safdar Amjad Nisar Mashkoor Ahmad
RSC Advances, Volume 15(30), 24760–24768

Impact Factor: 4.600 | **Quartile:** 2
DOI: 10.1039/d5ra03394b

Tailoring the redox activity of manganese dioxide/cerium dioxide/multi-walled carbon nanotube (MnO2/CeO2/MWCNTs) ternary composites for high capacity coin cell supercapacitors 2025

Shakeel Abbas Shafqat Karim Hongyu Sun Atia Khalid Yasir Faiz Yanlong Yu Hira Sultan Rao Tahir Ali Khan Amjad Nisar Mashkoor Ahmad Faisal Faiz Amina Zafar Amna Safdar Muhammad Mahad Ahmed Siddiqui
New Journal of Chemistry, Volume:49, Issue:21, Pages 8888-8897

Impact Factor: 2.500 | **Quartile:** 3 | **Citations:** 1
DOI: https://doi.org/10.1039/D5NJ00603A

Elucidating bimetallic CuMnSe2/MWCNTs composite as redox-active electrode material for hybrid supercapacitors 2025

Rehan Ullah Zeeshan Ali Umaima Hamayun Amna Safdar Sofia Javed Muhammad Talha Masood Ghulam Ali Ayesha Siddique Syed Rizwan Hussain
Journal of Energy Storage, Volume 109, Article Number 115124

Impact Factor: 8.900 | **Quartile:** 1 | **Citations:** 4
DOI: https://doi.org/10.1016/j.est.2024.115124

Exploring the Effect of TiO2 Coating on Na0.85Li0.12Ni0.22Mn0.66O2 Cathode Materials for Na-Ion Batteries 2024

Hongfeng Liu Yingshuai Wang Yusong Wang Amna Safdar Feng Wu Hongcai Gao

Journal of The Electrochemical Society, Volume 171, Number 6, Article Number 060523

Impact Factor: 3.100 | **Quartile:** 2 | **Citations:** 4

DOI: DOI: 10.1149/1945-7111/ad51a8

NiCo2O4@SnS2 nanosheets on carbon cloth as efficient bi-functional material for high performance supercapacitor and sensor applications 2024

Maria Bibi Yanlong Yu Amjad Nisar Amina Zafar Yanguo Liu Shafqat Karim Sheeraz Mehboob Yasir Faiz Hongyu Sun Tahir Ali Amna Safdar Faisal Faiz Mashkoor Ahmad Atia Khalid

Nanotechnology , Volume 35, Number 25, Article Number 255701

Impact Factor: 2.900 | **Quartile:** 2 | **Citations:** 6

DOI: https://doi.org/10.1088/1361-6528/ad3219

Tuning electrocatalytic activity of Co3O4 nanosheets using CdS nanoparticles for highly sensitive non-enzymatic cholesterol biosensor 2024

Hamza Waleed Haroon Ur Rasheed Amjad Nisar Amina Zafar Yanguo Liu Shafqat Karim Yanlong Yu Hongyu Sun Shafqat Hussain Yasir Faiz Tahir Ali Amna Safdar Naeem Ahmad Faisal Faiz Mashkoor Ahmad

Materials Science in Semiconductor Processing, Volume 173, Article Number 108154

Impact Factor: 4.1 | **Quartile:** 2 | **Citations:** 3

DOI: https://doi.org/10.1016/j.mssp.2024.108154

Enhancing Tandem Solar Cell's efficiency through convolutional neural network-based optimization of metasurfaces 2023

Ayesha Razi Amna Safdar Rabia Irfan

Materials & Design , Volume 236, Article Number 112475

Impact Factor: 8.4 | **Quartile:** 1 | **Citations:** 7

DOI: https://doi.org/10.1016/j.matdes.2023.112475

In-situ synthesis of crystalline MoS2@ZIF-67 nanocomposite for efficient removal of Methyl Orange Dye from aqueous media 2023

Tahreem Haq Nawz Muhammad Talha Masood Amna Safdar Muhammad Shahid Tayyaba Noor Muzammil Hussain Ayesha Razi Malik Adeel Umer

Micromachines , Volume 14(8), Article Number 1534

Impact Factor: 3.4 | **Quartile:** 2 | **Citations:** 6

DOI: https://doi.org/10.3390/mi14081534

The Potential Effect of Annealing Mesostructured Titanium Dioxide Electrode in a Closed Box Furnace on the Concentration of Lead (II) Iodide Solution Required for Optimal Performance of Mesoscopic Perovskite Solar Cells 2022

Muhammad Talha Masood Amna Safdar Aftab Akram Sofia Javed Syeda Qudsia

Crystals , Volume 12, Issue 6, Article Number 833

Impact Factor: 2.670 | **Quartile:** 2 | **Citations:** 1

DOI: https://doi.org/10.3390/cryst12060833

MWCNT synergy for boosting the electrochemical kinetics of V2O5 cathode for lithium-ion batteries 2022

Hamna Mustafa Amina Zafar Yanguo Liu Hongyu Sun Shafqat Hussain Atta Ullah Shah Syed Zahid Hussain Amna Safdar Amjad Nisar Mashkoor Ahmad Yanlong Yu Shafqat Karim Saqib Javed Sheeraz Mehboob

New Journal of Chemistry, Volume 46, Issue 7, Pages 3417-3425

Impact Factor: 3.925 | **Quartile:** 2 | **Citations:** 8

DOI: 10.1039/d1nj06245j

Controlled Morphology and Its Effects on the Thermoelectric Properties of SnSe2 Thin Films 2021

Muhammad Siyar Maroosha Farid Haad Khan Malik Adeel Umer Waqas Hassan Amna Safdar

Crystals , Volume 11(8), Article Number 942

Impact Factor: 2.589 | **Quartile:** 1 | **Citations:** 5

DOI: 10.3390/cryst11080942

Graphene to Advanced MoS2: A Review of Structure, Synthesis, and Optoelectronic Device Application 2020

Amna safdar Tahreem Haq Nawz Muzammil Hussain Dae Sung Lee Muhammad Siyar

Crystals , Volume 10(10), Article Number 902

Impact Factor: 2.589 | **Quartile:** 2 | **Citations:** 55

DOI: 10.3390/cryst10100902

Synthesis and Characterization of PVA/Starch Hydrogel Membranes Incorporating Essential Oils Aimed to be Used in Wound Dressing Applications 2020

Farrukh Altaf Muhammad Bilal Khan Niazi Zaib Jahan Tahir Ahmad Muhammad Aftab Akram Amna Safdar Muhammad Shoaib Butt Tayyaba Noor Farooq Sher

Journal of Polymers and the Environment, Pages 1-19

Impact Factor: 3.667 | **Quartile:** 2 | **Citations:** 145

DOI: https://doi.org/10.1007/s10924-020-01866-w

Interplay between Optical and Electrical Properties of Nanostructured Surfaces in Crystalline Silicon Solar Cells 2019

Amna Safdar Yue Wang Christopher Reardon Juntao Li Guilherme S. de Arruda Augusto Martins Emiliano R. Martins Thomas F. Krauss

IEEE Photonics Journal, Volume 11, Number 4, August 2019

Impact Factor: 2.833 | **Quartile:** 2 | **Citations:** 2

DOI: 10.1109/JPHOT.2019.2923562

Random lasing in uniform perovskite thin films 2018

Amna Safdar Yue Wang Thomas F. Krauss

Optics Express, Volume: 26, Issue: 2, Pages: A75-A84

Impact Factor: 3.561 | **Quartile:** 1 | **Citations:** 59

DOI: 10.1364/OE.26.000A75

Arrays of CZTS sensitized ZnO/ZnS and ZnO/ZnSe core/shell nanorods for liquid junction nanowire solar cells 2016

Muhammad Aftab Akram Sofia Javed Mohammad Islam Mohammad Mujahid Amna Safdar

Solar Energy Materials and Solar Cells, Volume 146, Pages 121-128

Impact Factor: 4.784 | **Quartile:** 1 | **Citations:** 45

DOI: doi:10.1016/j.solmat.2015.11.034

Reaction Time and Film Thickness Effects on Phase Formation and Optical Properties of Solution Processed Cu2ZnSnS4 Thin Films 2016

Amna Safdar Mohammad Islam Muhammad Aftab Akram Muhammad Mujahid Yasir Khalid S.Ismat Shah

Journal of Materials Engineering and Performance, Volume 25, Issue 2, Pages 457-465

Impact Factor: 1.331 | **Quartile:** 3 | **Citations:** 15

DOI: 10.1007/s11665-015-1874-6

Quantum confinement and size effects in Cu2ZnSnS4 thin films produced using solution processed ultrafine nanoparticles 2016

Amna Safdar Mohammad Islam Iftikhar Ahmad Muhammad Aftab Akram Muhammad Mujahid Yasir Khalid Yanqiu Zhu

Materials Science in Semiconductor Processing, Volume 41, Pages 420-427

Impact Factor: 2.359 | **Quartile:** 2 | **Citations:** 20

DOI: 10.1016/j.mssp.2015.09.027

Conference Proceedings

Quasirandom Nanophotonic Light Trapping Structures Integration into Wafer-Based Silicon Solar Devices 2019

Amna Safdar

2019 MRS spring Meeting & Exhibition , res.country(233,)

Citations: N/A

DOI: https://mrsspring2019.zerista.com/event/member/557369

Quasi-random light trapping structures fabrication and application to silicon solar devices 2017

Yue Wang Thomas F. Krauss AMNA SAFDAR

European Materials Research Society (EMRS) , res.country(178,)

Citations: N/A

DOI: https://www.european-mrs.com/material-and-device-integration-silicon-advanced-applications-emrs

Organic-Inorganic perovskite film fabrication and application in solar and laser devices (Poster) 2016

Juntao Li Thomas F. Krauss Amna Safdar

The 12th international symposium on Photonics and Electromagnetic Crystal Structures (PECS), res.country(231,)

Citations: N/A

DOI: N/A

Solar cell fabrication with novel materials 2015

Thomas F. Krauss AMNA SAFDAR

Department of Physics Postgraduate Conference 2015, res.country(231,)

Citations: N/A

DOI: N/A

Editorial Activities

Symmetry 2024

Reviewed Papers for Journals

Impact Factor: 2.3

Symmetry 2024

Reviewed Papers for Journals

Impact Factor: 2.2

Journal of Environmental Chemical Engineering 2024

Reviewed Papers for Journals

Impact Factor: 7.7

Processes 2024

Reviewed Papers for Journals

Impact Factor: 3.5

Solar RRL 2024

Reviewed Papers for Journals

Impact Factor: 9.173

Molecules 2024

Reviewed Papers for Journals

Impact Factor: 4.6

Materials 2023

Reviewed Papers for Journals

Impact Factor: 3.478

Catalysts 2023

Reviewed Papers for Journals

Impact Factor: 3.9

Catalysts 2023

Reviewed Papers for Journals

Impact Factor: 2.67

Sustainability 2023

Reviewed Papers for Journals

Impact Factor: 3.9

Micromachines 2023
Reviewed Papers for Journals
Impact Factor: 3.523

Molecules 2023
Reviewed Papers for Journals
Impact Factor: 4.927

Materials 2023
Reviewed Papers for Journals
Impact Factor: 3.478

Sustainability 2023
Reviewed Papers for Journals
Impact Factor: 3.9

Materials 2023
Reviewed Papers for Journals
Impact Factor: 3.478

Coatings 2023
Reviewed Papers for Journals
Impact Factor: 3.236

Crystals 2022
Reviewed Papers for Journals
Impact Factor: 2.67

2020
Reviewed Papers for Journals
Impact Factor: 3.894

2019
Reviewed Papers for Journals

2019
Reviewed Papers for Journals

2018
Reviewed Papers for Journals
Impact Factor: 3.589