

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 University of York , United Kingdom	2018 - 2018
MS in Surface And Material Engineering NUST, Islamabad , Pakistan	2011 - 2013
BS in Physics BZU, Multan , Pakistan	2006 - 2010

Experience

Assistant Professor School of Chemical & Materials Engineering	2021- Present
Assistant Professor School of Chemical & Materials Engineering	2018 - 2021
Assistant Professor School of Chemical & Materials Engineering	2018 - 2018

Awards

Silver Medallist Silver Medallist (2nd Position holder in BS Physics 4 year program)	2010
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 Na_{0.85}Li_{0.12}Ni_{0.22}Mn_{0.66}O₂ 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 Ittikhar 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 <i>Amna Safdar</i> <i>2019 MRS spring Meeting & Exhibition</i> , res.country(233,) Citations: N/A DOI: https://mrsspring2019.zerista.com/event/member/557369	2019
Quasi-random light trapping structures fabrication and application to silicon solar devices <i>Yue Wang Thomas F. Krauss AMNA SAFDAR</i> <i>European Materials Research Society (EMRS)</i> , res.country(178,) Citations: N/A DOI: https://www.european-mrs.com/material-and-device-integration-silicon-advanced-applications-emrs	2017
Organic-Inorganic perovskite film fabrication and application in solar and laser devices (Poster) <i>Juntao Li Thomas F. Krauss Amna Safdar</i> <i>The 12th international symposium on Photonics and Electromagnetic Crystal Structures (PECS)</i> , res.country(231,) Citations: N/A DOI: N/A	2016
Solar cell fabrication with novel materials <i>Thomas F. Krauss AMNA SAFDAR</i> <i>Department of Physics Postgraduate Conference 2015</i> , res.country(231,) Citations: N/A DOI: N/A	2015

Editorial Activities

Symmetry Reviewed Papers for Journals Impact Factor: 2.3	2024
Symmetry Reviewed Papers for Journals Impact Factor: 2.2	2024
Journal of Environmental Chemical Engineering Reviewed Papers for Journals Impact Factor: 7.7	2024
Processes Reviewed Papers for Journals Impact Factor: 3.5	2024
Solar RRL Reviewed Papers for Journals Impact Factor: 9.173	2024
Molecules Reviewed Papers for Journals Impact Factor: 4.6	2024
Materials Reviewed Papers for Journals Impact Factor: 3.478	2023
Catalysts Reviewed Papers for Journals Impact Factor: 3.9	2023
Catalysts Reviewed Papers for Journals Impact Factor: 2.67	2023
Sustainability Reviewed Papers for Journals Impact Factor: 3.9	2023

Micromachines Reviewed Papers for Journals Impact Factor: 3.523	2023
Molecules Reviewed Papers for Journals Impact Factor: 4.927	2023
Materials Reviewed Papers for Journals Impact Factor: 3.478	2023
Sustainability Reviewed Papers for Journals Impact Factor: 3.9	2023
Materials Reviewed Papers for Journals Impact Factor: 3.478	2023
Coatings Reviewed Papers for Journals Impact Factor: 3.236	2023
Crystals Reviewed Papers for Journals Impact Factor: 2.67	2022
 Reviewed Papers for Journals Impact Factor: 3.894	2020
 Reviewed Papers for Journals	2019
 Reviewed Papers for Journals	2019
 Reviewed Papers for Journals Impact Factor: 3.589	2018