Asad Mumtaz

Assistant Professor

School of Natural Sciences

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About

Dr. Asad Mumtaz is working as Assistant Professor in the School of Natural Sciences. Dr. Asad Mumtaz has a PhD in Physical Chemistry/Photocatalysis. Dr. Asad Mumtaz has published 36 research articles & conference papers having a citation count of 774, carried out 2 projects and filed 2 intellectual property.

Qualifications

PhD in Physical Chemistry/Photocatalysis 2013 - 2017
Universiti Teknologi Petronas , Malaysia

MPhil in Physical Chemistry 2008 - 2010
Quaid-i-Azam University , Pakistan

MSc in Physical Chemistry 2006 - 2008
Quaid-i-Azam University , Pakistan

BSc in Maths, Physics, Chemistry 2004 - 2006
Government College University Lahore , Pakistan

F.Sc in Pre-Engineering 2001 - 2004
Board of Intermediate and Secondary Education, Bahawalpur , Pakistan

Matric (SSC) in Sciences 1999 - 2001
Board of Intermediate and Secondary Education, Bahawalpur , Pakistan

Experience

Assistant Professor 2024- Present
School of Natural Sciences

Assistant Professor 2019 - 2019
School of Natural Sciences

Assistant Professor 2018 - 2019
School of Natural Sciences

Graduate Research Assistance 2017 - 2018
Univesiti Teknologi Petronas

Lecturer 2011 - 2013
University of Wah, Wah Cantt , Chemistry Department, University of Wah, Wah Cantt

Awards

PhD Scholarship 2013
PhD Scholarship

HEC Scholarship MSc 2007
HEC TALENT FORMING SCHOLARSHIP M.Sc, QAU, Islamabad

Research Projects

National Projects

Phototocatalytic Reduction of CO2 to Methanol using (M=Mn, Cu, Zn, Cd) MFeO4/TIO2 (P-n) Hetrojunctions under Visible Light Irradiation 2019

Funding Agency: HEC
Amount: PKR 500,000.00
Status: Completed

Phototocatalytic Reduction of CO2 to Methanol using (M=Mn, Cu, Zn, Cd) MFeO4/TIO2 (P-n) Hetrojunctions under Visible Light Irradiation 2019

Funding Agency: HEC
Amount: PKR 437,322.00
Status: Completed

International Projects

Research Articles

Unravelling the role of non-covalent interactions using imidazolium and amino acid based organic salts for efficient CO2capture: Experimental, DFT and COSMO-RS explorations 2025

Hira Karim Sabahat Sardar Asad Mumtaz Anila Tabassum Muhammad Arfan Azhar Mahmood Jean-Marc Leveque Cecilia Devi Wilfred Syed Farooq Adil Mohammad Rafe Hatshan Mujeeb Khan

Journal of Environmental Chemical Engineering, Volume:13, Issue:3, Article Number 116237

Impact Factor: 7.400 | **Quartile:** 1 | **Citations:** 1
DOI: 10.1016/j.jece.2025.116237

Monitoring the synergistic effect of Mn/Ni Co-doping and morphological engineering in α-Fe2O3 for energy storage capacity as battery type electrode material 2024

Aiman Kamal Eesha Ti Razia Maqdoona Zahra Sabahat Sardar Asad Mumtaz

International Journal of Hydrogen Energy, Volume 88, Pages 1280-1292

Impact Factor: 8.100 | **Quartile:** 1 | **Citations:** 5
DOI: https://doi.org/10.1016/j.ijhydene.2024.09.259

Effect of the anionic counterpart of amino acid based Ionic liquids upon efficient CO2 Capture: A correlation of experimental and DFT study 2024

Hira Karim Sabahat Sardar Hajra Bibi Fouzia Perveen Muhammad Arfan Asad Mumtaz

Journal of Molecular Liquids, Volume 405, Article Number 125079

Impact Factor: 5.300 | **Quartile:** 1 | **Citations:** 4
DOI: 10.1016/j.molliq.2024.125079

Enhanced antioxidant activity in Imidazolium-based protic organic salts: An insight into structure activity relationship via experimental and modelling approaches 2024

Sabahat Sardar Erum Jabeen Hira Karim Asad Mumtaz

Journal of Molecular Liquids, Volume:404, Article Number: 124964

Impact Factor: 5.3 | **Quartile:** 1 | **Citations:** 1
DOI: 10.1016/j.molliq.2024.124964

Efficient Adsorption of Methylene Blue Using a Hierarchically Structured Metal–Organic Framework Derived from Layered Double Hydroxide 2024

Ghulam Murtaza Syed Shoaib Ahmad Shah Ghayoor Abbas Chotana Ayman Nafady Md A. Wahab Manzar Sohail Asad Mumtaz

ACS Omega, Vol:9, Issue:14, Pages:16334-16345

Impact Factor: 4.1 | **Quartile:** 2 | **Citations:** 10
DOI: 10.1021/acsomega.3c10524

Efficient charge separation and transportation using 1D iron-sulfide@titania heterojunctions as photoanodes for improved interface stability and photoelectrochemical activity to produce hydrogen 2024

Noor Alam Fazeelat Rehman Manzar Sohail Asad Mumtaz

New Journal of Chemistry, Volume 48, Issue 9, Pages 3998-4008

Impact Factor: 3.300 | **Quartile:** 2 | **Citations:** 3
DOI: 10.1039/D3NJ04753A

Boosting the photoexcited charge collection and transportation via BiVO4/Fe-TiO2 NRs in Type-II heterojunction for efficient photoelectrochemical water splitting 2023

Fazeelat Rehman Noor Alam Manzar Sohail Muhammad Ahmad Muhammad Israr Muhammad Imran Irshad Dr Asad Mumtaz

Journal of Photochemistry and Photobiology A: Chemistry, Volume 444, Article Number: 114956

Impact Factor: 5.14 | **Quartile:** 2 | **Citations:** 9

DOI: 10.1016/j.jphotochem.2023.114956

Synthesis of non-cytotoxic Co3O4 nanocatalysts for thermocatalytic methane decomposition by resource recovery 2022

Sheeza Mughal Hafiz Ali Haider Sehole Asad Mumtaz Muhammad Bilal Khan Niazi Fazal Adnan Hongbo Zhao Hussnain Ahmed Janjua

Biomass Conversion and Biorefnery , Pages 1-19

Impact Factor: 4.987 | **Quartile:** 1

DOI: https://doi.org/10.1007/s13399-022-02606-x

Creating Bipolar Junction by Depositing Ultrathin Anion-Exchange Coating on CationExchange Membrane to Dissociate Water in Electrodialysis 2022

Muhammad Ahmad Shabbir Hussain Muhammad Amin Abid Asad Mumtaz Muhammad Ibrar Saz Muhammad

Journal of Membrane Science and Research, Volume 8, Issue 1, Article Number 540358

Impact Factor: N/A | **Citations:** 5

DOI: 10.22079/JMSR.2021.540358.1502

Impedance Spectroscopy Analysis of PbSe Nanostructures Deposited by Aerosol Assisted Chemical Vapor Deposition Approach 2021

Sadia Iram Azhar Mahmood Muhammad Fahad Ehsan Asad Mumtaz Manzar Sohail Effat Sitara Shehla Mushtaq Mohammad Azad Malik Syeda Arooj Fatima Rubina Shaheen Nasir Mahmood Ahmad Sajid Nawaz Malik

Nanomaterials , Volume 11(11), Article Number 2817

Impact Factor: 5.719 | **Quartile:** 1 | **Citations:** 4

DOI: 10.3390/nano11112817

Highly porous Zr-MCM-48 immobilized Cu-porphyrin for photocatalytic reduction of CO2 to methanol in a slurry reactor 2021

Asad Mumtaz Saad Nadeem Mohamad Sahban Alnarabiji Mohamed Ibrahim Abdul Mutalib Bawadi Abdullah

Journal of Materials Science: Materials in Electronics, Volume 32, Pages 22060-22075

Impact Factor: 2.779 | **Quartile:** 2 | **Citations:** 4

DOI: https://doi.org/10.1007/s10854-021-06676-x

Enhanced photoelectrochemical water splitting using zinc selenide/graphitic carbon nitride type-II heterojunction interface 2021

Effat Sitara Habib Nasir Asad Mumtaz Muhammad Fahad Ehsan Manzar Sohail Sadia Iram Syeda Aqsa Batool Bukhari Sharif Ullah Tehmina Akhtar Azhar Iqbal

International Journal of Hydrogen Energy, Volume 46, Issue 50, Pages 25424-25435

Impact Factor: 5.816 | **Quartile:** 2 | **Citations:** 44

DOI: https://doi.org/10.1016/j.ijhydene.2021.05.054

Electrocatalytic Performance of NiNH2BDC MOF Based Composites with rGO For Methanol Oxidation Reaction 2021

Lubna Yaqoob Tayyaba Noor Naseem Iqbal Habib Nasir Asad Mumtaz

Scientific Reports , Volume 11, Article Number 13402

Impact Factor: 4.379 | **Quartile:** 1 | **Citations:** 37

DOI: https://doi.org/10.1038/s41598-021-92660-8

Impedance Spectroscopic Study of Nickel Sulfide Nanostructures Deposited by Aerosol Assisted Chemical Vapor Deposition Technique 2021

Sadia Iram Azhar Mahmood Asad Mumtaz Manzar Sohail Effat Sitara Syeda Aqsa Batool Bukhari Sumia Gul Syeda Arooj Fatima Muhammad Zarrar Khan Rubina Shaheen Sajid Nawaz Malik Mohammad Azad Malik Muhammad Fahad Ehsan

Nanomaterials , Volume 11(5), Article Number 1105

Impact Factor: 5.076 | **Quartile:** 1 | **Citations:** 4

DOI: https://doi.org/10.3390/nano11051105

Efficient Photoelectrochemical Water Splitting by Tailoring Mos2/Cote Heterojunction in a Photoelectrochemical Cell 2020

Effat Sitara Habib Nasir Asad Mumtaz Muhammad Fahad Ehsan Manzar Sohail Sadia Iram Syeda Aqsa Batool Bukhari

Nanomaterials , Volume 10(12), Article Number 2341

Impact Factor: 5.076 | **Quartile:** 2 | **Citations:** 29

DOI: doi:10.3390/nano10122341

Efficient CO2 sorption in phosphonium-based organic salts 2020

Sabahat Sardar Erum Jabeen Mehwish Taneez Cecilia Devi Wilfred Asma Maqsood Asad Mumtaz

Journal of Molecular Liquids, Volume 318, Article Number 114044

Impact Factor: 6.165 | **Quartile:** 1 | **Citations:** 7

DOI: 10.1016/j.molliq.2020.114044

Photocatalytic reduction of CO2 to methanol over ZnFe2O4 /TiO2 (p–n) heterojunctions under visible light irradiation 2020

Farukh Iqbal Asad Mumtaz Syed Shahabuddin Mohamed Ibrahim Abd Mutalib Maizatul Shima Shaharun Trinh Duy Nguyen Maksudur Rahman Khan Bawadi Abdullah

Journal of Chemical Technology and Biotechnology, Volume 95, Issue 8, Pages 2208-2221

Impact Factor: 3.174 | **Quartile:** 3 | **Citations:** 43

DOI: 10.1002/jctb.6408

Physical reduction of graphene oxide for supercapacitive charge storage 2020

Rajan Jose Asad Mumtaz Asfand Yar John Ojur Dennis Mohamed Shuaib Mohamed Saheed Norani Muti Mohamed Muhammad Imran Irshad

Journal of Alloys and Compounds, Volume 822, Article Number 153636

Impact Factor: 5.316 | **Quartile:** 1 | **Citations:** 42

DOI: 10.1016/j.jallcom.2019.153636

Effect of physicochemical properties of ammonium-based ionic liquids on CO2 capturing: An insight into structure-activity relationship 2020

Sabahat Sardar Asad Mumtaz Jean-Marc Leveque Mehwish Taneez Masoom Yasinzai Muhammad Imran Irshad

Fluid Phase Equilibria, Volume 510, Article Number 112484

Impact Factor: 2.775 | **Quartile:** 2 | **Citations:** 9

DOI: 10.1016/j.fluid.2020.112484

Synthesis, DNA-binding study and antioxidant assay of novel protic ionic liquids: Experimental and computational approaches 2020

Sardar Sabahat Asad Mumtaz Masoom Yasinzai Jean-MarcLeveque Erum Jabeen

Journal of Molecular Liquids, Volume 300, Article Number 112255

Impact Factor: 6.165 | **Quartile:** 1 | **Citations:** 11

DOI: 10.1016/j.molliq.2019.112255

Cytoxicity, Hammett acidity and CO2 solubility of AMPS-based organic salts: A comparative analysis of experimental and computational tools 2020

Sabahat Sardar Cecilia Devi Wilfred Asad Mumtaz Masoom Yasinzai Girma Gonfa Jean-Marc Leveque

Journal of Molecular Structure, Volume 1202, Article Number 127255

Impact Factor: 3.196 | **Quartile:** 3 | **Citations:** 7

DOI: 10.1016/j.molstruc.2019.127255

Synthesis, thermophysical properties and CO2 sorption of imidazolium, thiazolium, iminium and morpholinium-based protic ionic liquids paired with 2-acrylamido-2-methyl-1-propanesulfonate anion 2020

Sabahat Sardar Asad Mumtaz Masoom Yasinza Cecilia Devi Wilfred

Journal of Molecular Liquids, Volume 297, Article Number 111843

Impact Factor: 6.165 | **Quartile:** 1 | **Citations:** 5

DOI: 10.1016/j.molliq.2019.111843

Facile synthesis of molybdenum multisulfide composite nanorod arrays from single-source precursor for photoelectrochemical hydrogen generation 2019

Chu Er Lim Mei Lee Ooi Richard C. S. Wong Kian Eang Neo Muhammad Mazhar Norani Muti Mohamed Mohamed Shuaib Mohamed Saheed Asad Mumtaz

Applied nanoscience, Pages 1-12

Impact Factor: 2.880 | **Quartile:** 3 | **Citations:** 3

DOI: https://doi.org/10.1007/s13204-019-00957-y

Visible light driven CO2 reduction to methanol by Cu-porphyrin impregnated mesoporous Ti-MCM-48 2018

Saad Nadeem Mudassar Mumtaz M.I. Abdul Mutalib Maizatul Shima Shaharun Bawadi Abdullah Asad Mumtaz

Journal of Molecular Liquids, Volume 272, Pages 656-667

Impact Factor: 4.561 | **Quartile:** 1 | **Citations:** 42

DOI: 10.1016/j.molliq.2018.09.077

Synthesis, thermophysical properties, Hammett acidity and COSMO-RS study of camphorsulfonate-based Brönsted acidic ionic liquids 2018

Sabahat Sardar Cecilia Devi Wilfred Zeeshan Rashid Jean-Marc Leveque Asad Mumtaz

Journal of Molecular Liquids, Volume 271, Pages 621-630

Impact Factor: 4.561 | **Quartile:** 1 | **Citations:** 11

DOI: 10.1016/j.molliq.2018.09.024

Physicochemical properties, Brönsted acidity and ecotoxicity of imidazolium-based organic salts: Non-toxic variants of protic ionic liquids 2018

Sabahat Sardar Cecilia Devi Wilfred Jean-Marc Leveque Amir Sada Khan Sooridarsan Krishnan Asad Mumtaz

Journal of Molecular Liquids, Volume 269, Pages 178-186

Impact Factor: 4.561 | **Quartile:** 1 | **Citations:** 25

DOI: 10.1016/j.molliq.2018.08.017

Mutual effect of extrinsic defects and electronic carbon traps of M-TiO2 (M ¼ V, Co, Ni) nanorod arrays on photoexcited charge extraction of CdS for superior photoelectrochemical activity of hydrogen production 2018

Norani Muti Mohamed Muhammad Imran Irshad Asfand Yar Mohamed Shuaib Mohamed Saheed Asad Mumtaz

International Journal of Hydrogen Energy, Volume 43, Issue 31, Pages 14388-14405

Impact Factor: 4.084 | **Quartile:** 2 | **Citations:** 16

DOI: 10.1016/j.ijhydene.2018.06.006

Investigation of tip sonication effects on structural quality of graphene nanoplatelets (GNPs) for superior solvent dispersion 2018

Zeeshan Baig Othman Mamat Mazli Mustapha Khurram S. Munir Mansoor Sarfraz Asad Mumtaz

Ultrasonics Sonochemistry, Volume 45, Pages 133-149

Impact Factor: 7.279 | **Quartile:** 1 | **Citations:** 116

DOI: 10.1016/j.ultsonch.2018.03.007

Surfactant-decorated graphite nanoplatelets (GNPs) reinforced aluminum nanocomposites: sintering effects on hardness and wear 2018

Zeeshan Baig Othman Mamat Mazli Mustapha Asad Mumtaz Sadaqat Ali Mansoor Sarfraz

International Journal of Minerals, Metallurgy and Materials, Volume 25, Issue 6, Pages 704-715

Impact Factor: 1.221 | **Quartile:** 3 | **Citations:** 11

DOI: 10.1007/s12613-018-1618-3

Photoelectrochemical water splitting with tailored TiO2/SrTiO3@g-C3N4 heterostructure nanorod in photoelectrochemical cell 2018

Robabeh Bashiri Norani Muti Mohamed Nur Amirah Suhaimi Muhammad Umair Shahid Chong Fai Kait Suriati Sufian Mehboob Khatani Asad Mumtaz

Diamond and Related Materials, Volume 85, Pages 5-12

Impact Factor: 2.290 | **Quartile:** 2 | **Citations:** 46

DOI: 10.1016/j.diamond.2018.03.019

An Efficient Approach to Address Issues of Graphene Nanoplatelets (GNPs) Incorporation in Aluminium Powders and Their Compaction Behaviour 2018

Zeeshan Baig Othman Mamat Mazli Mustapha Mansoor Sarfraz Sajjad Haider Asad Mumtaz

Metals , Volume 8, Issue 2

Impact Factor: 2.259 | **Quartile:** 2 | **Citations:** 30

DOI: 10.3390/met8020090

Investigation of the Thermophysical Properties of AMPS-Based Aprotic Ionic Liquids for Potential Application in CO2 Sorption Processes 2017

Cecilia Devi Wilfred Asad Mumtaz Sabahat Sardar Jean-Marc Leveque

JOURNAL OF CHEMICAL AND ENGINEERING DATA, Volume: 62 Issue: 12 Pages: 4160-4168 DOI: 10.1021/acs.jced.7b00552

Impact Factor: 2.196 | **Quartile:** 2 | **Citations:** 16

DOI: https://pubs.acs.org/doi/abs/10.1021/acs.jced.7b00552

Photoelectrochemical water splitting over mesoporous CuPbI3 films prepared by electrophoretic technique 2017

Muhammad Adil Mansoor Rabia Naeem Rosiyah Yahya Mohd Asri Mat Teridi Mehran Sookhakian Asad Mumtaz Muhammad Mazhar

Monatshefte für Chemie, Volume: 148 Issue: 6 Pages: 981-989

Impact Factor: 1.285 | **Quartile:** 3 | **Citations:** 17

DOI: 10.1007/s00706-016-1880-x

Core–Shell Vanadium Modified Titania@β-In2S3 Hybrid Nanorod Arrays for Superior Interface Stability and Photochemical Activity 2016

Norani Muti Mohamed Muhammad Mazhar Muhammad Ali Ehsan Mohamed Shuaib Mohamed Saheed Asad Mumtaz

ACS Applied Materials and Interfaces , Volume 8, Issue 14, Pages 9037-9049

Impact Factor: 7.504 | **Quartile:** 1 | **Citations:** 75

DOI: 10.1021/acsami.5b10147

Influence of the electrodeposition potential on the crystallographic structure and effective magnetic easy axis of cobalt nanowires 2016

M. I. Irshad N. M. Mohamed M. Z. Abdullah M. S. M. Saheed M. Yasar A. Yar M. A. Zeeshan J. Sort Asad Mumtaz

RSC Advances , Volume 6, Issue 17, Pages 14266-14272

Impact Factor: 3.108 | **Quartile:** 2 | **Citations:** 15

DOI: 10.1039/c6ra01311b

Intellectual Property

Copyrights

Patents

CoTe/MoS2 Composites for Efficient Photoelectrochemical Water Splitting 2020

Status: Filed

Hydrogen Fuel Production Device 2020

Status: Filed

Industrial Designs

Trademarks