

Mustafa Anwar

Assistant Professor

US-Pakistan Center for Advanced Studies in Energy

Email: mustafa@uspcase.nust.edu.pk

Contact: 0514833670

LinkedIn: <https://www.linkedin.com/in/mustafa-anwar-a06b7635/>



About

Dr. Mustafa Anwar is working as Assistant Professor in the US-Pakistan Center for Advanced Studies in Energy. Dr. Mustafa Anwar has a PhD in Fuel Cell Engineering. Dr. Mustafa Anwar has published 81 research articles & conference papers having a citation count of 1404, carried out 7 projects and filed 0 intellectual property.

Qualifications

PhD in Fuel Cell Engineering Universiti Kebangsaan Malaysia , Malaysia	2015 - 2019
MS in Energy Systems Engineering NUST, Islamabad , Pakistan	2012 - 2014
BS in Chemical Engineering UET Lahore , Pakistan	2007 - 2012

Experience

Assistant Professor US-Pakistan Center for Advanced Studies in Energy	2024- Present
Assistant Professor US-Pakistan Center for Advanced Studies in Energy	2023 - 2023
Assistant Professor US-Pakistan Center for Advanced Studies in Energy	2020 - 2024
Assistant Professor US-Pakistan Center for Advanced Studies in Energy	2019 - 2020
Assistant Professor Centre for Energy System	2019 - 2019
Ph.D. Research Scholar Universiti Kebangsaan Malaysia (UKM) , UKM Bangi, Selangor, Malaysia	2015 - 2019
MS Research Scholar National University of Sciences & Technology , NUST, H-12 Islamabad, Pakistan	2013 - 2014

Awards

FDP Abroad - 2014 Dr. Mustafa was awarded by the NUST sponsorship under the Faculty Development Program (FDP) to pursue Ph.D. in Universiti Kebangsaan Malaysia (UKM), Malaysia.	2014
National Academic Award My research paper as a co-author has been nominated from Universiti Kebangsaan Malaysia (The National University of Malaysia) for the National Academic Award 2019 under the category of Journal Publishing Paper Award Following is the link of the nominated paper: https://www.sciencedirect.com/science/article/pii/S0272884218306114	

Professional Memberships

PEC	Since 2012
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Research Projects

National Projects

Developing Climate Resilience Environment through Energy Transition and Knowledge Development	2024
Funding Agency: TARA Climate Foundation	
Amount: PKR 22,401,960.00	
Status: Approved_inprocess	
Creating Climate Resilience through Energy Transition: Fostering Innovation and Awareness in Pakistan	2023
Funding Agency: Tara Climate Ltd	
Amount: PKR 18,900,120.00	
Status: Approved_inprocess	
Zirconia coating on Ti-alloy and ceramic substrates for enhanced thermal protection	2023
Funding Agency: NESCOM	
Amount: PKR 300,000.00	
Status: Completed	
Surface modification of Fiber Reinforced Composite for Fair Thermal Stability and Bonding Strength - Phase II	2023
Funding Agency: NESCOM	
Amount: PKR 400,000.00	
Status: Completed	
To combat climate calamity by promoting energy transition In Pakistan through Knowledge creation, networking, and advocacy for enabling society.	2022
Funding Agency: Tara Climate Ltd	
Amount: PKR 11,312,840.00	
Status: Completed	
Surface Modification of Fiber Reinforced Composite for Fair Thermal Stability and Bonding Strength – (Phase I)	2022
Funding Agency: NESCOM	
Amount: PKR 400,000.00	
Status: Completed	
Solar Driven Building Integrated Heating, Cooling and Electricity Generation System	2022
Funding Agency: HEC	
Amount: PKR 8,590,000.00	
Status: Completed	

International Projects

Research Articles

An integrated evaluation framework for evaluating renewable-based building sector implementation in remote/off-grid areas with varying climatic zones	2025
Rida Maryam Syed Ali Abbas Kazmi Muhammad Hassan Mustafa Anwar	
Energy and Buildings , Volume:341, Article Number 115803	
Impact Factor: 6.600 Quartile: 1	
DOI: https://doi.org/10.1016/j.enbuild.2025.115803	
Parametric analysis and prototype development of smog-free tower for sustainable urban environment	2025
Muhammad Hamza sana yaqub Majid Ali Mustafa Anwar Abeera Ayaz Ansari Qazi Shahzad Ali Awais Bokhari Muhammad Murtaza	
Separation and Purification Technology , Volume 362, Part 2, Article Number 131776	
Impact Factor: 8.100 Quartile: 1	
DOI: https://doi.org/10.1016/j.seppur.2025.131776	
Socio-Economic Analysis for Adoption of Smart Metering System in SAARC Region: Current Challenges and Future Perspectives	2025
Muhammad Hassan Syyed Ahmad Ali Shah Mustafa Anwar Muhammad Yousif Abdul Haseeb Tariq Syed Ali Abbas Kazmi Zain Khalid	
Sustainability , Volume 17(15), Article Number 6786	
Impact Factor: 3.300 Quartile: 2	
DOI: https://doi.org/10.3390/su17156786	

Energy, exergy and economic analyses of solid oxide fuel cell based polygeneration system with integrated carbon capture, desalination and liquefied natural gas cold energy utilization <i>Muhammad Uzair Azhar Mustafa Anwar Ali Bahadar Mohammed Zwawi Asif Hussain</i> <i>International Journal of Hydrogen Energy</i> , Volume: 141, Pages:512-522 Impact Factor: 8.3 Quartile: 1 DOI: https://doi.org/10.1016/j.ijhydene.2024.10.326	2025
Recent developments and discourse on catalyst systems for partial oxidation of methane to syngas production <i>Nida Naeem Asif Hussain Mehboob Alam Syed Muhammad Shuja Mustafa Anwar Muhammad Arfan Abdulaziz Al Anazi Mallikarjuna N. Nadagouda Bilal Alam Khan Ahad hussain Javed Umair Yaqub Qazi</i> <i>INTERNATIONAL JOURNAL OF HYDROGEN ENERGY</i> , Volume:139, Pages 646-717 Impact Factor: 8.300 Quartile: 1 DOI: https://doi.org/10.1016/j.ijhydene.2025.05.183	2025
Techno-economic analysis and optimization of renewable sources and battery energy storage system across diverse climatic zones considering gas and electrical utilities <i>Kiran Qaisar Fatima Surayya Muhammad Zubair Iftikhar Mustafa Anwar Syed Ali Abbas Kazmi</i> <i>Energy Conversion and Management</i> , Volume:332, Article Number 119692 Impact Factor: 9.900 Quartile: 1 Citations: 3 DOI: https://doi.org/10.1016/j.enconman.2025.119692	2025
Bi-functional V₂O₅ nanorods loaded biomass-derived activated carbon nanocomposites for enhanced photocatalytic dye degradation and hydrogen production <i>Imama Abbas Hajirah Kanwal Asif Hussain Hira Azeem Mustafa Anwar Israf Ud Din Abdulaziz Al-Anazi</i> <i>Diamond and Related Materials</i> , Volume 154, Article Number 112104 Impact Factor: 4.300 Quartile: 2 Citations: 2 DOI: https://doi.org/10.1016/j.diamond.2025.112104	2025
Photo- and electrocatalytic hydrogen production from dye-degraded wastewater using samarium-doped ceria as a catalyst <i>Hijab Haider Hira Azeem Asif Hussain Muhammad Hassan Rabia Liaquat Ali Bahadar Muhammed Ali S.A. Mustafa Anwar</i> <i>International Journal of Hydrogen Energy</i> , Volume:111, Pages:606-622 Impact Factor: 8.100 Quartile: 1 Citations: 4 DOI: https://doi.org/10.1016/j.ijhydene.2025.02.188	2025
Reinforcement of smart campus grid infrastructure for sustainable energy management in buildings across horizon 2030 <i>Mahnoor Abbasi Syed Ali Abbas Kazmi Muhammad Zubair Iftikhar Mustafa Anwar Muhammad Hassan Thamer A.H. Alghamdi Mohammed Alenezi</i> <i>Results in Engineering</i> , Volume:25, Article Number:104300, Pages:30 Impact Factor: 6 Quartile: 1 Citations: 2 DOI: https://doi.org/10.1016/j.rineng.2025.104300	2025
Techno-economic and composite performance assessment of fuel cell-based hybrid energy systems for green hydrogen production and heat recovery <i>Abdul haseeb Tariq Mustafa Anwar Syed Ali Abbas Kazmi Muhammad Hassan Ali Bahadar</i> <i>International Journal of Hydrogen Energy</i> , Volume:104, Pages:444-462 Impact Factor: 8.100 Quartile: 1 Citations: 22 DOI: https://doi.org/10.1016/j.ijhydene.2024.04.018	2025
Effect of dental ceramic coating on thermal, mechanical, and dielectric properties of glass fiber-reinforced wave transparent composite <i>Muhammad Qasim Muhammad talha Shabbir Tayyab Hussain Imran Haider Muhammad Hassan Mustafa Anwar</i> <i>Journal of Materials Science: Materials in Electronics</i> , Volume:36, Issue:6, Article Number 391 Impact Factor: 2.800 Quartile: 2 DOI: https://doi.org/10.1007/s10854-025-14388-9	2025
Photocatalytic performance of dual-function selenium-enriched biomass-derived activated carbon as a catalyst for dye degradation and hydrogen production <i>Hajirah Kanwal Asif Hussain Yassine Hajji Sehar Shakir Mustafa Anwar Rabia Liaquat Israf Ud Din Ali Bahadur Manel Hleili</i> <i>International Journal of Hydrogen Energy</i> , Volume 101, Pages 1288-1303 Impact Factor: 8.100 Quartile: 1 Citations: 1 DOI: https://doi.org/10.1016/j.ijhydene.2024.12.509	2025

Techno-economic analysis of green hydrogen production from wind and solar along CPEC special economic zones in Pakistan <i>Joshi Laila Mustafa Anwar Muhammad Hassan Syed Ali Abbas Kazmi Rizwan Ali Muhammed Ali S.A. Muhammad Zeeshan Rafique</i> <i>International Journal of Hydrogen Energy</i> , Volume 96, Pages 811-828 Impact Factor: 8.100 Quartile: 1 Citations: 8 DOI: https://doi.org/10.1016/j.ijhydene.2024.11.140	2024
Impact of atmospheric plasma spraying parameters on microstructure, mechanical properties and thermal cycling performance of YSZ coatings <i>Muhammad Tahir Muhammad Qasim Nisar Ahmed Aamir Naseem Satti Anwaar Ellahi Malik Zuhair S. Khan Mustafa Anwar</i> <i>Ceramics International</i> , Volume 50, Issue 24, Part B, Pages 53976-53986 Impact Factor: 5.100 Quartile: 1 Citations: 8 DOI: https://doi.org/10.1016/j.ceramint.2024.10.253	2024
Socio-economic benefits and policy implications of generating sustainable energy from municipal solid waste in Pakistan <i>Waqas Ahmad Muhammad Hassan Shah Fahad Bin Masud Muhammad Saad Amjad Fatin Samara Zeshan Mustafa Anwar Muhammad Zeeshan Rafique</i> <i>Tahir Nawaz</i> <i>Energy and Climate Change</i> , Volume 5, Article Number 100124 Impact Factor: 5.800 Quartile: 2 Citations: 8 DOI: https://doi.org/10.1016/j.egycc.2023.100124	2024
Photocatalytic activity of molybdenum-doped LOS- zeolite for efficient dye degradation and hydrogen production <i>Hamza Khawaja Nida Naeem Asif Hussain Khoja Hajirah Kanwal Ali Raza Mustafa Anwar Rabia Liaquat Israf Ud Din Salman Raza Naqvi Abdulaziz Al-Anazi</i> <i>Results in Engineering</i> , Volume 24, Article Number 103122 Impact Factor: 6.000 Quartile: 1 Citations: 5 DOI: https://doi.org/10.1016/j.rineng.2024.103122	2024
Recent advancements in perovskite materials and their DFT exploration for dry reforming of methane to syngas production <i>Mehboob Alam Uneeb Masood Khan Animesh Towfiq Partho Neha Kaushal Jawad Gul Nida Naeem Asif Hussain Khoja Mustafa Anwar Majid Ali Abdulaziz Al-Anazi Dai-Viet N. Vo Syed Muhammad Shuja</i> <i>International Journal of Hydrogen Energy</i> , Volume 87, Pages 1288-1326 Impact Factor: 8.100 Quartile: 1 Citations: 3 DOI: https://doi.org/10.1016/j.ijhydene.2024.09.049	2024
Synthesis and Performance Analysis of a Carbon-Doped Titania (C–TiO₂) Counter Electrode (CE) for Dye-Sensitized Solar Cells (DSSCs) <i>Faisal Abbas Muhammad Tahir Asif Hussain Nadia Shahzad Mustafa Anwar Muniba ayub Sehar Shakir</i> <i>Journal of Electronic Materials</i> , Volume 53, Issue 8, Pages 4773-4781 Impact Factor: 2.200 Quartile: 3 Citations: 3 DOI: https://doi.org/10.1007/s11664-024-11222-6	2024
Enhancing Renewable Energy Integration in Developing Countries: A Policy-Oriented Analysis of Net Metering in Pakistan Amid Economic Challenges <i>Noor Saleem Khan Syed Ali Abbas Kazmi Mustafa Anwar Saqib Ur Rehman Mughal Kafait Ullah Mahesh Kumar Rathi Ahmad Salal</i> <i>Sustainability</i> , Volume 16(14), Article Number 6034 Impact Factor: 3.300 Quartile: 2 Citations: 7 DOI: https://doi.org/10.3390/su16146034	2024
Techno-economic and performance assessment of a hybrid fuel cell-based combined heat and power system for dairy industry <i>Kashif Najeeb Abdul Haseeb Tariq Muhammad Hassan Mustafa Anwar Ali Bahadar Syed Ali Abbas Kazmi Muhammad Yousif</i> <i>Environment Development and Sustainability</i> , Pages 1-29 Impact Factor: 4.700 Quartile: 2 Citations: 3 DOI: https://doi.org/10.1007/s10668-024-05044-z	2024
Praseodymium doped nickel oxide as hole-transport layer for efficient planar Perovskite Solar Cells <i>Muhammad Tahir Hafiz Muhammad Abd ur Rehman Asif Hussain Mustafa Anwar Muhammad Adil Mansoor Faisal Abbas Sehar Shakir</i> <i>Optik</i> , Volume:300, Article Number: 171630 Impact Factor: 3.1 Quartile: 2 Citations: 7 DOI: 10.1016/j.jleo.2024.171630	2024

Synergistic transformation: Kinetic and thermodynamic evaluation of co-pyrolysis for low-rank bituminous coal and polyurethane foam waste <i>Zaid Mohammad Banyhani Waqar Ul Habib Khan Hala H. Abd El-Gawad Dr. Mustafa Anwar Dr. Asif Hussain Khoja Dr. Muhammad Hassan Dr. Rabia Liaquat Zeinhom M. El-Bahy</i> <i>Process Safety and Environmental Protection</i> , Volume 184, Pages 907-921 Impact Factor: 7.8 Quartile: 1 Citations: 12 DOI: 10.1016/j.psep.2024.01.041	2024
Energy, economic and environmental (3E) analyses of solar photovoltaic and fuel cell based hybrid energy system for a developing country: a worldwide approach to sustainable energy <i>Maham Fazal Abdul Kashif Janjua Mustafa Anwar Muhammad Hassan Sehar Shakir Ali Bahadar</i> <i>Environment, Development and Sustainability</i> , Pages 1-28 Impact Factor: 4.9 Quartile: 2 Citations: 4 DOI: https://doi.org/10.1007/s10668-024-04677-4	2024
An integrated assessment framework of renewable based Microgrid deployment for remote isolated area electrification across different climatic zones and future grid extensions <i>Zain-ul-Abdeen Qureshi Syed Ali Abbas Kazmi Safdar Mushtaq Mustafa Anwar</i> <i>Sustainable Cities and Society</i> , Volume 101, February 2024, 105069 Impact Factor: 11.7 Quartile: 1 Citations: 14 DOI: https://doi.org/10.1016/j.scs.2023.105069	2024
Thermodynamic analysis of different modes of a multigeneration SOFC-CCHP system with freshwater production and LNG cold energy utilization <i>Muhammad Uzair Azhar Mustafa Anwar Uneeb Masood Khan Muhammad Hassan Muhammed Ali S.A. Adeel Waqas Mahendra Rao Somalu Dr. Faisal Alresheedi</i> <i>Energy Conversion and Management</i> , Volume 297, Article Number 117730 Impact Factor: 10.4 Quartile: 1 Citations: 25 DOI: https://doi.org/10.1016/j.enconman.2023.117730	2023
Performance evaluation of direct Z-scheme based modified titania composite for photocatalytic degradation of organic pollutants <i>Tayab Hussain Talha Shabbir Mustafa Anwar Ali Bahadur Sehar Shakir</i> <i>Optical Materials</i> , Volume 145, Article Number 114442 Impact Factor: 3.9 Quartile: 2 Citations: 1 DOI: https://doi.org/10.1016/j.optmat.2023.114442	2023
Comparison of Techno-Economic Models for Upgrading PV System without Net-Metering Option and Long-Term Impact on Energy Bills <i>Arslan Ahmed Syed Ali Abbas Kazmi Mustafa Anwar Adeel Waqas</i> <i>Pakistan Journal of Engineering and Technology (PAKJET)</i> , Volume 6, No. 3, Pages 16-24 Impact Factor: 0 DOI: https://doi.org/10.51846/vol6iss3pp16-24	2023
Enhancement in the photocatalytic and optoelectronic properties of erbium oxide by adding zinc oxide and molybdenum <i>Muhammad Talha Shabbir Tayyab Hussain Sehar Shakir Mustafa Anwar Asif Hussain Khoja Syed Nawaz Aamir Naseem Satti</i> <i>Ceramics International</i> , Volume 49, Issue 12, Pages 19691-19700 Impact Factor: 5.2 Quartile: 1 Citations: 9 DOI: https://doi.org/10.1016/j.ceramint.2023.03.086	2023
Techno-economic analysis of PV systems installed by using innovative strategies for smart sustainable agriculture farms <i>Yahya Aziz Abdul Kashif Janjua Muhammad Hassan Mustafa Anwar Saira Kamwal Muhammad Yousif</i> <i>Environment, Development and Sustainability</i> , Pages 1-22 Impact Factor: 4.080 Quartile: 2 Citations: 15 DOI: https://doi.org/10.1007/s10668-023-02919-5	2023
Thermal steam methane reforming over bimetal-loaded hemp-derived activated carbon-based catalyst for hydrogen production <i>Rashid Minhas Asif Hussain Khoja Nida Naeem Mustafa Anwar Sehar Shakir Rabia Liaquat Israf Ud Din</i> <i>Research on Chemical Intermediates</i> , Pages 1-23 Impact Factor: 3.134 Quartile: 3 Citations: 12 DOI: https://doi.org/10.1007/s11164-022-04924-1	2022

Mussel shell based CaO nano-catalyst doped with praseodymium to enhance biodiesel production from castor oil <i>Sana Gohar Khan Muhammad Hassan Mustafa Anwar Zeshan Uneeb Masood Khan Chao Zhao</i> <i>Fuel</i> , Volume 330, Article Number 125480 Impact Factor: 8.035 Quartile: 1 Citations: 40 DOI: https://doi.org/10.1016/j.fuel.2022.125480	2022
Technical and Economic Evaluation of a 50 MW Solar Power Plant in Quetta † <i>Gohram Khan Dr. Muhammad Hassan Dr. Mustafa Anwar Dr. Adeel Waqas Dr. Sehar Shakir Jamsheed Sajid</i> <i>Engineering Proceedings</i> , Volume:20, Issue:1, Article Number: 46 Impact Factor: N/A Citations: 2 DOI: 10.3390/engproc2022020046	2022
Proximate and elemental analysis of solid recovered fuel, its comparison with existing fossil fuels in terms of physical characteristics and economic benefits <i>Waqas Ahmad Muhammad Hassan Zeshan Shah Fahad Bin Masud Saira Kamwal Ram Sarup Singh Mustafa Anwar Esmaeil Mehryar Chao Zhao</i> <i>Bioresource Technology Reports</i> , Volume 18, Article Number 101049 Impact Factor: 0 Citations: 10 DOI: https://doi.org/10.1016/j.biteb.2022.101049	2022
Praseodymium-doped Sr₂TiFeO_{6-δ} double perovskite as a bi-functional electrocatalyst for hydrogen production through water splitting <i>Qassam Sarmad Uneeb Masood Khan Mutawara Mahmood Baig Muhammad Hassan Faaz Ahmed Butt Asif Hussain Rabia Liaquat Zuhair Subhani Khan Mustafa Anwar Muhammed Ali S.A.</i> <i>Journal of Environmental Chemical Engineering</i> , Volume 10, Issue 3, Article Number 107609 Impact Factor: 5.909 Quartile: 1 Citations: 38 DOI: 10.1016/j.jece.2022.107609	2022
Co-digestion of chicken manure with goose manure and thermo-oxidative-treated wheat straw in CSTR: co-digestion synergistics and OLR optimization through kinetic modeling <i>Muhammad Hassan Mustafa Anwar Ram Sarup Singh Chao Zhao Esmaeil Mehryar</i> <i>Biomass Conversion and Biorefinery</i> , Pages 1-12 Impact Factor: 4.987 Quartile: 1 Citations: 7 DOI: https://doi.org/10.1007/s13399-022-02757-x	2022
Environmental Impact Assessments of the Renewable Energy Technologies Adaptation <i>Abdul Basit Muhammad Hassan Saira Kamwal Mustafa Anwar Syed Ali Abbas Kazmi Abeera Ayaz Ansari</i> <i>Pakistan Journal of Engineering and Technology</i> , Volume 5, Number 2, Pages 100-103 Impact Factor: N/A DOI: 2664-2042, ISSN (e): 2664-2050	2022
Performance Analysis of Calcium-Doped Titania (TiO₂) as an Effective Electron Transport Layer (ETL) for Perovskite Solar Cells <i>Zafar Arshad Sehar Shakir Asif Hussain Khoja Ahad Hussain Javed Mustafa Anwar Abdur Rehman Rahat Javaid Umair Yaqoob Qazi Sarah Farrukh</i> <i>Energies</i> , Volume 15(4), Article Number 1408 Impact Factor: 3.004 Quartile: 3 Citations: 20 DOI: https://doi.org/10.3390/en15041408	2022
Role of bi-layered CuSCN based hole transport films to realize highly efficient and stable perovskite solar cells. <i>Muhammad Ali Tariq Nadia Shahzad Abdul Sattar Muneeza Ahmad Mustafa Anwar Muhammad Imran Shahzad</i> <i>Surfaces and Interfaces</i> , Volume 28, Article Number 101657 Impact Factor: 4.837 Quartile: 1 Citations: 7 DOI: https://doi.org/10.1016/j.surfin.2021.101657	2022
Methane enhancement by the co-digestion of thermochemical alkali solubilized rice husk and cow manure: Lignocellulosics decomposition perspectives <i>Muhammad Hassan Shah Fahad Bin Masud Mustafa Anwar Chao Zhao Ram Sarup Singh Esmaeil Mehryar</i> <i>Biomass Conversion and Biorefinery</i> , Pages 1-13 Impact Factor: 4.987 Quartile: 1 Citations: 9 DOI: https://doi.org/10.1007/s13399-022-02310-w	2022
Methane Refinement by Iron Oxide, Packed Column Water Scrubbing, and Activated Charcoal Scrubbing Techniques <i>Shah Fahad Bin Masud Muhammad Hassan Faaz Ahmed Butt Ram Sarup Singh Asif Hussain Khoja Mustafa Anwar Waqas Ahmad</i>	2021

Waste and Biomass Valorization , Pages 1-13	
Impact Factor: 3.703 Quartile: 2 Citations: 6	
DOI: https://doi.org/10.1007/s12649-021-01629-1	
Synthesis of cobalt loaded double perovskite Sr₂TiFeO_{6-δ} (STF) as a stable catalyst for enhanced hydrogen production via methane decomposition	2021
Uneeb Masood Khan Qassam Sarmad Mustafa Anwar Asif Hussain Khoja Muhammed Ali S.A. Zuhair S. Khan Muhammad Hassan Sehar Shakir <i>International Journal of Energy Research</i> , Volume 45, Issue 14, Pages 20073-20088	
Impact Factor: 4.672 Quartile: 1 Citations: 9	
DOI: http://dx.doi.org/10.1002/er.7084	
Catalytic Performance of Calcium-Lanthanum co-doped Ceria (Ce_{0.85}-xLa_{0.15}CaxO_{2-δ}) in Partial Oxidation of Methane	2021
Zuhair Subhani Khan Andanastuti Muchtar Qassam Sarmad Uneeb Masood Khan Mustafa Anwar Asif Hussain Khoja Muhammed Ali Mahendra Rao Somalu <i>Bulletin of Chemical Reaction Engineering and Catalysis</i> , Volume 16, Issue 3, Pages 548-554	
Impact Factor: -	
DOI: https://doi.org/10.9767/bcrec.16.3.10528.548-554	
A review on the preparation of anode materials and anode films for solid oxide fuel cell applications	2021
Nur Hanisah Hadi Mahendra Rao Somalu Abdullah Abdul Samat Andanastuti Muchtar Nurul Akidah Baharuddin Mustafa Anwar <i>International Journal of Energy Research</i> , Volume 45, Issue 10, Pages 14357-14388	
Impact Factor: 4.672 Quartile: 1 Citations: 20	
DOI: https://doi.org/10.1002/er.6763	
Performance Analysis of TiO₂-Modified Co/MgAl₂O₄ Catalyst for Dry Reforming of Methane in a Fixed Bed Reactor for Syngas (H₂, CO) Production	2021
Arslan Mazhar Asif Hussain Khoja Abul Kalam Azad Faisal Mushtaq Salman Raza Naqvi Sehar Shakir Muhammad Hassan Rabia Liaquat Mustafa Anwar <i>Energies</i> , Volume 14(11), Article Number 3347	
Impact Factor: 3.004 Quartile: 3 Citations: 24	
DOI: https://doi.org/10.3390/en14113347	
Synthesis of metallic copper nanowires using dielectric barrier discharge plasma and their application in hydrogen evolution reaction	2021
Faaz Ahmed Butt Mustafa Anwar Ugur Unal <i>International Journal of Hydrogen Energy</i> , Volume 46, Issue 36, Pages 18866-18877	
Impact Factor: 7.139 Quartile: 2 Citations: 12	
DOI: https://doi.org/10.1016/j.ijhydene.2021.03.020	
Photo-electrochemical water splitting through graphene-based ZnS composites for H₂ production	2021
Ahmed Hassan Rabia Liaquat Naseem Iqbal Ghulam Ali Xue Fan Zelong Hu Mustafa Anwar Awais Ahmad <i>Journal of Electroanalytical chemistry</i> , Volume 889, Article Number 115223	
Impact Factor: 4.598 Quartile: 1 Citations: 31	
DOI: https://doi.org/10.1016/j.jelechem.2021.115223	
Effect of Synthesis Method of Nickel–Samarium-Doped Ceria Anode on Distribution of Triple-Phase Boundary and Electrochemical Performance	2021
Muhammed Ali Shaikh Abdul Ahmad Zubair Yahaya Mustafa Anwar Mun Teng Soo Andanastuti Muchtar Vadim M. Kovrugin <i>Crystals</i> , Volume 11, Issue 5, Article Number 513	
Impact Factor: 2.670 Quartile: 2	
DOI: https://doi.org/10.3390/cryst11050513	
Enhanced CO₂ capture using organic acid structure modified waste eggshell derived CaO sorbent	2021
Azra Nawar Asif Hussain Khoja Mustafa Anwar Mariam Mahmood Adeel waqas Majid Ali <i>Journal of Environmental Chemical Engineering</i> , Volume 9, Issue 1, Article Number 104871	
Impact Factor: 7.968 Quartile: 1 Citations: 68	
DOI: 10.1016/j.jece.2020.104871	
Effect of structural promoters on calcium based sorbents from waste derived sources	2020
Azra Nawar Majid Ali Mariam Mahmood Mustafa Anwar Muhammad Zeeshan Ali Khan <i>Materials Today Communications</i> , Volume 24, Article No. 101075	
Impact Factor: 3.383 Quartile: 2 Citations: 12	
DOI: 10.1016/j.mtcomm.2020.101075	
Thermal dry reforming of methane over La₂O₃ co-supported Ni/MgAl₂O₄ catalyst for hydrogen-rich syngas production	2020

Impact Factor: 2.914 | Quartile: 3 | Citations: 29

DOI: <https://doi.org/10.1007/s11164-020-04174-z>

Carbonate-Based Lanthanum Strontium Cobalt Ferrite (LSCF)–Samarium-Doped Ceria (SDC)

2020

Composite Cathode for Low-Temperature Solid Oxide Fuel Cells

Muhammed Ali S.A. Jarot Raharjo Mustafa Anwar Deni Shidqi Khaerudini Andanastuti Muchtar Luca Spiridigliozi Mahendra Rao Somalu

Applied Sciences, Volume 10, Issue 11, Article Number 3761

Impact Factor: 2.679 | Quartile: 2 | Citations: 19

DOI: <https://doi.org/10.3390/app10113761>

Performance of Ni/10Sc1CeSZ anode synthesized by glycine nitrate process assisted by microwave

2020

heating in a solid oxide fuel cell fueled with hydrogen or methane

Abdul Azim Jais Wan Nor Roslam Wan Isahak Nurul Akidah Baharudin Kean Long Lim Nigel P. Brandon S.A. Muhammed Ali Mustafa Anwar Mahendra Rao

Somalu Andanastuti Muchtar

Journal of Solid State Electrochemistry, Volume 24, Pages 711-724

Impact Factor: 2.647 | Quartile: 3 | Citations: 21

DOI: [10.1007/s10008-020-04512-6](https://doi.org/10.1007/s10008-020-04512-6)

Effect of ball milling time on the properties of nickel oxide-samarium-doped cerium composite anodes for solid oxide fuel cells

2019

Nor Fatina Raduwan S.A. Muhammed Ali Mustafa Anwar Andanastuti Muchtar Mahendra Rao Somalu

International Journal of Materials and Product Technology, Volume 59, Issue 1, Pages 16-24

Impact Factor: 0.714 | Quartile: 4 | Citations: 1

DOI: [10.1504/IJMPT.2019.100820](https://doi.org/10.1504/IJMPT.2019.100820)

Influence of current collecting and functional layer thickness on the performance stability of

2019

La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ}-Ce_{0.8}Sm_{0.2}O_{1.9} composite cathode

S. A. Muhammed Ali Lily Siong Mahmud Noor Shieela Kalib Andanastuti Muchtar Mustafa Anwar Mahendra Rao Somalu

Journal of Solid State Electrochemistry, Volume 23, Issue 4, Page 1155-1164

Impact Factor: 2.646 | Quartile: 3 | Citations: 13

DOI: [10.1007/s10008-019-04208-6](https://doi.org/10.1007/s10008-019-04208-6)

Influence of strontium co-doping on the structural, optical, and electrical properties of erbium-doped ceria electrolyte for intermediate temperature solid oxide fuel cells

2019

S. A. Muhammed Ali Andanastuti Muchtar Mahendra Rao Somalu Mustafa Anwar

Ceramics International, Volume 45, Issue 5, Pages 5627-5636

Impact Factor: 3.830 | Quartile: 1 | Citations: 38

DOI: [10.1016/j.ceramint.2018.12.023](https://doi.org/10.1016/j.ceramint.2018.12.023)

Synthesis and characterization of M-doped ceria-ternary carbonate composite electrolytes (M = ¼ erbium, lanthanum and strontium) for low-temperature solid oxide fuel cells

2019

S. A. Muhammed Ali Andanastuti Muchtar Mahendra Rao Somalu Mustafa Anwar

Journal of Alloys and Compounds, Volume 775, Pages 571-580

Impact Factor: 4.650 | Quartile: 1 | Citations: 28

DOI: [10.1016/j.jallcom.2018.10.076](https://doi.org/10.1016/j.jallcom.2018.10.076)

Structural, optical and electrical properties of Ce_{0.8}Sm_{0.2}-xEr_xO_{2-δ} (x = 0–0.2) Co-doped ceria electrolytes

2018

S. A. Muhammed Ali Nurul Akidah Baharuddin Nor Fatina Raduwan Andanastuti Muchtar Mahendra Rao Somalu Mustafa Anwar

Ceramics International, Volume 44, Issue 12, Pages 13639-13648

Impact Factor: 3.45 | Quartile: 1 | Citations: 37

DOI: [10.1016/j.ceramint.2018.04.200](https://doi.org/10.1016/j.ceramint.2018.04.200)

Influence of oxygen ion enrichment on optical, mechanical, and electrical properties of LSCF perovskite nanocomposite

2018

S.A. Muhammed Ali Nurul Ashikin Andanastuti Muchtar Mahendra Rao Somalu Mustafa Anwar

Ceramics International, Volume 44, Issue 9, Pages 10433-10442

Impact Factor: 3.45 | Quartile: 1 | Citations: 28

DOI: [10.1016/j.ceramint.2018.03.060](https://doi.org/10.1016/j.ceramint.2018.03.060)

Effect of lanthanum and hydrogen peroxide on the thermal and microstructural properties of NiO-Ce_{0.8}Sm_{0.2}O_{1.9} composite

2018

M. Naveed Akbar Zuhair S. Khan Naveed K. Janjua Mustafa Anwar

Impact Factor: 0.692 | **Quartile:** 3

DOI: 10.1007/s41779-017-0140-9

Optical, mechanical and electrical properties of LSCF–SDC composite cathode prepared by sol–gel assisted rotary evaporation technique

2018

S. A. Muhammed Ali Nor Fatina Raduwan Andanastuti Muchtar Mahendra Rao Somalu Mustafa Anwar

Journal of Sol-Gel Science and Technology, Volume 86, Issue 2, Pages 493-504

Impact Factor: 1.986 | **Quartile:** 1 | **Citations:** 23

DOI: 10.1007/s10971-018-4636-8

Effects of sintering temperature on the structural and electrochemical properties of SrFe_{0.5}Ti_{0.5}O_{3-δ} perovskite cathode

2018

Nurul Akidah Baharuddin Andanastuti Muchtar Mahendra Rao Somalu Muhammed Ali Shaikh Abdul Kader Abdul Hameed Joelle Mah Mustafa Anwar

International Journal of Applied Ceramic Technology, Volume 15, Issue 2, Page 338-348

Impact Factor: 1.074 | **Quartile:** 2 | **Citations:** 18

DOI: 10.1111/ijac.12825

Enhanced electrochemical performance of LSCF cathode through selection of optimum fabrication parameters

2018

S. A. Muhammed Ali Nurul Akidah Baharuddin Mahendra Rao Somalu Andanastuti Muchtar Mustafa Anwar

Journal of Solid State Electrochemistry, Volume 22, Issue 1, Pages 263-273

Impact Factor: 2.531 | **Quartile:** 3 | **Citations:** 34

DOI: 10.1007/s10008-017-3754-5

Enhanced ionic conductivity of scandia-ceria-stabilized-zirconia (10Sc1CeSZ) electrolyte synthesized by the microwave-assisted glycine nitrate process

2017

Abdul Azim Jais S.A. Muhammed Ali Mahendra Rao Somalu Andanastuti Muchtar Wan Nor Roslam Wan Isahak Chou Yong Tan Ramesh Singh Nigel P.

Brandon Mustafa Anwar

Ceramics International, Volume 43, Issue 11, Pages 8119-8125

Impact Factor: 3.057 | **Quartile:** 1 | **Citations:** 116

DOI: 10.1016/j.ceramint.2017.03.135

Enhancement of the interfacial polarization resistance of La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-δ} cathode by microwave-assisted combustion method

2017

S.A. Muhammed Ali Mahendra Rao Somalu Andanastuti Muchtar Mustafa Anwar

Ceramics International, Volume 43, Issue 5, Pages 4647-4654

Impact Factor: 3.057 | **Quartile:** 1 | **Citations:** 34

DOI: 10.1016/j.ceramint.2016.12.136

Effect of sintering temperature on the microstructure and ionic conductivity of Ce_{0.8}Sm_{0.1}Ba_{0.1}O_{2-δ} delta electrolyte

2017

(Ali, Muhammed S. A Abdalla, Abdalla M Somalu, Mahendra Rao Muchtar, Andanastuti Mustafa Anwar

PROCESSING AND APPLICATION OF CERAMICS, Volume: 11 Issue: 1 Pages: 67-74

Impact Factor: 1.152 | **Quartile:** 2 | **Citations:** 25

DOI: 10.2298/PAC1701067A

Ce_{0.8}Sm_{0.1}Ba_{0.05}Er_{0.05}O_{2-δ} multi-doped ceria electrolyte for intermediate temperature solid oxide fuel cells

2017

S.A. Muhammed Ali Abdalla M. Abdalla Mahendra Rao Somalu Andanastuti Muchtar Mustafa Anwar

Ceramics International, Volume 43, Issue 1, Part B, Pages 1265-1271

Impact Factor: 3.057 | **Quartile:** 1 | **Citations:** 44

DOI: 10.1016/j.ceramint.2016.10.075

Effects of some rare earth and carbonate-based co-dopants on structural and electrical properties of samarium doped ceria (SDC) electrolytes for solid oxide fuel cells

2015

Mustafa Anwar Zuhair S. Khan Kamal Mustafa Akmal Rana

International Journal of Modern Physics B, Volume 29, Issue 24, Article Number 1550179

Impact Factor: 0.850 | **Quartile:** 3 | **Citations:** 3

DOI: 10.1142/S0217979215501799

Development of cobalt doped lithiated NiO nano-composites and hot corrosion testing of LiAlO₂ matrices for molten carbonate fuel cell (MCFC) applications

2015

Mustafa Anwar Kamal Mustafa M. Akmal Rana Zuhair S. Khan

Materials Chemistry and Physics, Volume 164, Pages 198-205

Conference Proceedings

- Double perovskites as a stable catalyst for enhanced hydrogen production via methane decomposition** 2022
- As a keynote speaker
Dr. Mustafa Anwar
3rd International Conference on Advances in Materials Science, res.country(177,)
Citations: N/A
DOI: <https://aims.ue.edu.pk/>
- Performance Analysis Of Fuzzy Logic Based Grid Connected PV with integrated Battery Storage System** 2021
Hafsa Ijaz Abasin Ulasyar Haris Sheh Zad Abraiz Khattak Kashif Imran Mustafa Anwar
International Conference & Exposition on Modern Energy and Power Systems (ICMEPS2021), res.country(224,)
Citations: N/A
- Biomass pelletizing: Characterization of cow dung assisted solid recovered bio-fuel from agricultural waste** 2021
Hamza Sohail Muhammad Hassan Mustafa Anwar Shah Fahad Bin Masud Waqas Ahmad
4th International Conference on Energy Conservation and Efficiency (ICECE), res.country(177,)
Citations: N/A
DOI: 978-0-7381-1148-3/21
- A Short Review on Triple Conducting Oxide Cathode Materials for Proton Conducting Solid Oxide Fuel Cell** 2020
Abdullah Abdul Samat Murizam Darus Nafisah Osman Nurul Akidah Baharuddin Mustafa Anwar
6th international conference on Green Design and Manufacture 2020, res.country(157,)
Citations: N/A
DOI: <https://doi.org/10.1063/5.0044224>
- Influence of layer numbers on the structural and electrical performance of cobalt-free SrFe0.5Ti0.5O3-δ cathode for intermediate-temperature solid oxide fuel cell application** 2018
Nurul Akidah Baharuddin Wan Nor Anasuhah Wan Yusoff Andanastuti Muchtar Mahendra Rao Somalu Abdullah Abdul Samat Mustafa Anwar
International Conference on Sustainable Energy and Green Technology 2018, res.country(157,)
Citations: N/A
DOI: 10.1088/1755-1315/268/1/012132
- Effects of Various Co-Dopants and Carbonates on the Properties of Doped Ceria-Based Electrolytes: A Brief Review** 2015
Mustafa Anwar Andanastuti Muchtarl Mahendra Rao Somalu
28th Symposium of Malaysian Chemical Engineers, res.country(157,)
Citations: N/A
DOI: https://www.researchgate.net/publication/309538250_Effects_of_Various_Co-Dopants_and_Carbonates_on_the_Properties_of_Doped_Ceria-Based_Electrolytes_A_Brief_Review

Book Chapters

- Charge Transfer, Transportation, and Simulation** 2020
Muhammad Afzal Mustafa Anwar Muhammad Imran Asghar Peter D. Lund Naveed Jhamat Rizwan Raza Bin Zhu
In: *Book on Solid Oxide Fuel Cells: From Electrolyte?Based to Electrolyte?Free Devices*, Chapter 10, Pages 319-346
Citations: 1
DOI: 10.1002/9783527812790.ch10

Editorial Activities

- Ceramics International** 2025
Reviewed Papers for Journals
Impact Factor: 5.6
- Energy Conversion and Management** 2025
Reviewed Papers for Journals
Impact Factor: 10.9

New Journal of Chemistry Reviewed Papers for Journals Impact Factor: 2.5	2025
Ceramics International Reviewed Papers for Journals Impact Factor: 5.1	2025
Energy Conversion and Management Reviewed Papers for Journals Impact Factor: 9.9	2025
Financial Innovation Reviewed Papers for Journals Impact Factor: 2.1	2025
Ceramics International Reviewed Papers for Journals Impact Factor: 5.1	2025
Ceramics International Reviewed Papers for Journals Impact Factor: 5.1	2024
Journal: Frontiers in Energy Research, section Smart Grids Reviewed Papers for Journals Impact Factor: 2.6	2024
International Journal of Hydrogen Energy Reviewed Papers for Journals Impact Factor: 8.1	2024
Energy Science & Engineering Reviewed Papers for Journals Impact Factor: 3.5	2024
Energy Reviewed Papers for Journals Impact Factor: 9.0	2024
Processes Reviewed Papers for Journals Impact Factor: 2.8	2024
 Reviewed Papers for Journals Impact Factor: 7.1	2024
Processes Reviewed Papers for Journals Impact Factor: 3.5	2024
Energy Conversion and Management: X Reviewed Papers for Journals Impact Factor: 6.3	2024
Ceramics International Reviewed Papers for Journals Impact Factor: 5.2	2024
Journal of Physics: Energy Reviewed Papers for Journals Impact Factor: 6.9	2024
Energy Conversion and Management Reviewed Papers for Journals Impact Factor: 10.4	2024
AIP Advances Reviewed Papers for Journals Impact Factor: 1.6	2024

International Journal of Hydrogen Energy Reviewed Papers for Journals Impact Factor: 7.2	2024
Ionics Reviewed Papers for Journals Impact Factor: 2.8	2024
Energy conversion and management X Reviewed Papers for Journals Impact Factor: 6.3	2024
International Journal of Hydrogen Energy Reviewed Papers for Journals Impact Factor: 7.2	2024
Journal of Cleaner Production Reviewed Papers for Journals Impact Factor: 11.1	2023
Journal of Alloys and Compounds Reviewed Papers for Journals Impact Factor: 6.2	2023
Methane Reviewed Papers for Journals Impact Factor: N/A	2023
Physica Scripta Reviewed Papers for Journals Impact Factor: 2.9	2023
Journal of Alloys and Compounds Reviewed Papers for Journals Impact Factor: 6.2	2023
Processes Reviewed Papers for Journals Impact Factor: 3.5	2023
Engineering Research Express Reviewed Papers for Journals Impact Factor: 1.7	2023
Processes Reviewed Papers for Journals Impact Factor: 3.5	2023
Arabian Journal of Chemistry Reviewed Papers for Journals Impact Factor: 6.0	2023
Journal of Alloys and Compounds Reviewed Papers for Journals Impact Factor: 6.2	2023
Renewable & Sustainable Energy Reviews Reviewed Papers for Journals Impact Factor: 15.9	2023
Energy Conversion and Management Reviewed Papers for Journals Impact Factor: 11.533	2022
Materials Reviewed Papers for Journals Impact Factor: 3.748	2022
Physica Scripta Reviewed Papers for Journals	2022

Impact Factor: 3.081	
Reviewed Papers for Journals	2022
Impact Factor: 3.574	
Reviewed Papers for Journals	2022
Impact Factor: 3.252	
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Reviewed Papers for Journals	2022
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Reviewed Papers for Journals Impact Factor: 9.33	2020
Reviewed Papers for Journals Impact Factor: -	2020
Reviewed Papers for Journals Impact Factor: 1.91	2019
Reviewed Papers for Journals Impact Factor: -	2019
Reviewed Papers for Journals Impact Factor: 1.449	2019
Reviewed Papers for Journals Impact Factor: 1.449	2019
Reviewed Papers for Journals	2019

Reviewed Papers for Journals
Impact Factor: 3.057

Reviewed Papers for Journals
Impact Factor: 1.151