

# Muhammad Taqi Mehran

## List of Publications by Year in descending order

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84  
papers

2,485  
citations

172207

29  
h-index

233125

45  
g-index

85  
all docs

85  
docs citations

85  
times ranked

2450  
citing authors

#	ARTICLE	IF	CITATIONS
1	Current status of electron transport layers in perovskite solar cells: materials and properties. RSC Advances, 2017, 7, 17044-17062.	1.7	317
2	Applications of artificial intelligence in COVID-19 pandemic: A comprehensive review. Expert Systems With Applications, 2021, 185, 115695.	4.4	119
3	Two-dimensional transition metal carbide ( $Ti_3C_2Tx$ ) as an efficient adsorbent to remove cesium ( $Cs^+$ ). Dalton Transactions, 2019, 48, 11803-11812.	1.6	98
4	2D MXenes and their heterostructures for HER, OER and overall water splitting: A review. International Journal of Hydrogen Energy, 2022, 47, 2794-2818.	3.8	92
5	Coating materials for slow release of nitrogen from urea fertilizer: a review. Journal of Plant Nutrition, 2020, 43, 1510-1533.	0.9	87
6	Kinetic and thermodynamic analyses of dried oily sludge pyrolysis. Journal of the Energy Institute, 2021, 95, 30-40.	2.7	59
7	Controlling cation migration and inter-diffusion across cathode/interlayer/electrolyte interfaces of solid oxide fuel cells: A review. Ceramics International, 2021, 47, 5839-5869.	2.3	55
8	3D hierarchical heterostructured LSTN@NiMn-layered double hydroxide as a bifunctional water splitting electrocatalyst for hydrogen production. Fuel, 2021, 285, 119174.	3.4	55
9	A simplified approach to predict performance degradation of a solid oxide fuel cell anode. Journal of Power Sources, 2018, 391, 94-105.	4.0	54
10	Jute Based Bio and Hybrid Composites and Their Applications. Fibers, 2019, 7, 77.	1.8	52
11	Challenges and opportunities in biomass ash management and its utilization in novel applications. Renewable and Sustainable Energy Reviews, 2021, 150, 111451.	8.2	51
12	Effects of applied current density and thermal cycling on the degradation of a solid oxide fuel cell cathode. International Journal of Hydrogen Energy, 2018, 43, 12346-12357.	3.8	47
13	Biomass ash characterization, fusion analysis and its application in catalytic decomposition of methane. Fuel, 2021, 285, 119107.	3.4	44
14	Perylene diimide/MXene-modified graphitic pencil electrode-based electrochemical sensor for dopamine detection. Mikrochimica Acta, 2021, 188, 230.	2.5	44
15	Effect of GDC interlayer thickness on durability of solid oxide fuel cell cathode. Ceramics International, 2016, 42, 6978-6984.	2.3	43
16	Kinetic study of dry reforming of methane using hybrid DBD plasma reactor over $La_2O_3$ co-supported $Ni/MgAl_2O_4$ catalyst. International Journal of Hydrogen Energy, 2020, 45, 12256-12271.	3.8	42
17	Role of perovskites as a bifunctional catalyst for electrochemical water splitting: A review. International Journal of Energy Research, 2020, 44, 9714-9747.	2.2	38
18	Ultrasonically derived $WSe_2$ nanostructure embedded MXene hybrid composites for supercapacitors and hydrogen evolution reactions. Renewable Energy, 2022, 185, 585-597.	4.3	38

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19	Fabrication of ionic liquid stabilized MXene interface for electrochemical dopamine detection. <i>Mikrochimica Acta</i> , 2022, 189, 64.	2.5	38
20	Enhancing the Thermal, Mechanical and Swelling Properties of PVA/Starch Nanocomposite Membranes Incorporating g-C <sub>3</sub> N <sub>4</sub> . <i>Journal of Polymers and the Environment</i> , 2020, 28, 100-115.	2.4	37
21	Binder-free heterostructured MWCNTs/Al <sub>2</sub> S <sub>3</sub> decorated on NiCo foam as highly reversible cathode material for high-performance supercapacitors. <i>Electrochimica Acta</i> , 2020, 340, 135955.	2.6	37
22	Nano-CeO <sub>2</sub> and -LaCrO <sub>3</sub> dispersed ferritic stainless steels as potential interconnect materials for solid oxide fuel cells. <i>Journal of Alloys and Compounds</i> , 2017, 709, 453-463.	2.8	35
23	Indium-doped ZnO mesoporous nanofibers as efficient electron transporting materials for perovskite solar cells. <i>Surface and Coatings Technology</i> , 2018, 352, 231-237.	2.2	34
24	Modified structural and magnetic properties of nanocrystalline MnFe <sub>2</sub> O <sub>4</sub> by pH in capping agent free co-precipitation method. <i>Journal of Magnetism and Magnetic Materials</i> , 2017, 425, 31-36.	1.0	32
25	Improving sulfur tolerance of Ni-YSZ anodes of solid oxide fuel cells by optimization of microstructure and operating conditions. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 11202-11213.	3.8	32
26	Low-temperature electrospray-processed SnO <sub>2</sub> nanosheets as an electron transporting layer for stable and high-efficiency perovskite solar cells. <i>Journal of Colloid and Interface Science</i> , 2018, 532, 387-394.	5.0	31
27	Production of syngas from H <sub>2</sub> O/CO <sub>2</sub> by high-pressure coelectrolysis in tubular solid oxide cells. <i>Applied Energy</i> , 2018, 212, 759-770.	5.1	30
28	Superior magnetic properties of Ni ferrite nanoparticles synthesized by capping agent-free one-step coprecipitation route at different pH values. <i>Journal of Magnetism and Magnetic Materials</i> , 2018, 449, 172-179.	1.0	30
29	Microstructure tailoring of solid oxide electrolysis cell air electrode to boost performance and long-term durability. <i>Chemical Engineering Journal</i> , 2021, 410, 128318.	6.6	29
30	MULTI-OBJECTIVE OPTIMIZATION OF ABRASIVE FLOW MACHINING PROCESSES USING POLYNOMIAL NEURAL NETWORKS AND GENETIC ALGORITHMS. <i>Machining Science and Technology</i> , 2006, 10, 491-510.	1.4	28
31	Syngas production in high performing tubular solid oxide cells by using high-temperature H <sub>2</sub> O/CO <sub>2</sub> co-electrolysis. <i>Chemical Engineering Journal</i> , 2018, 335, 41-51.	6.6	28
32	Biochars™ adsorption performance towards moxifloxacin and ofloxacin in aqueous solution: Role of pyrolysis temperature and biomass type. <i>Environmental Technology and Innovation</i> , 2021, 24, 101912.	3.0	28
33	Numerical investigations to determine the optimal operating conditions for 1kW-class flat-tubular solid oxide fuel cell stack. <i>Energy</i> , 2017, 141, 673-691.	4.5	26
34	Flat-tubular solid oxide fuel cells and stacks: a review. <i>Journal of Asian Ceramic Societies</i> , 2021, 9, 745-770.	1.0	26
35	Methane decomposition for hydrogen production over biomass fly ash-based CeO <sub>2</sub> nanowires promoted cobalt catalyst. <i>Journal of Environmental Chemical Engineering</i> , 2021, 9, 105816.	3.3	24
36	Nanostructured ZnO electron transporting materials for hysteresis-free perovskite solar cells. <i>Solar Energy</i> , 2018, 173, 496-503.	2.9	23

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37	Designing the MXene/molybdenum diselenide hybrid nanostructures for high-performance symmetric supercapacitor and hydrogen evolution applications. <i>International Journal of Energy Research</i> , 2021, 45, 18770-18785.	2.2	23
38	Free greener Cl-terminated MXene as novel electrocatalyst for overall water splitting in alkaline media. <i>International Journal of Energy Research</i> , 2022, 46, 10942-10954.	2.2	23
39	Agro-industrial residue gasification feasibility in captive power plants: A South-Asian case study. <i>Energy</i> , 2021, 214, 118952.	4.5	22
40	Global plastic waste management strategies (Technical and behavioral) during and after COVID-19 pandemic for cleaner global urban life. <i>Energy Sources, Part A: Recovery, Utilization and Environmental Effects</i> , 0, 1-10.	1.2	22
41	Thermal dry reforming of methane over La <sub>2</sub> O <sub>3</sub> co-supported Ni/MgAl <sub>2</sub> O <sub>4</sub> catalyst for hydrogen-rich syngas production. <i>Research on Chemical Intermediates</i> , 2020, 46, 3817-3833.	1.3	22
42	Effect of reverse Boudouard reaction catalyst on the performance of solid oxide carbon fuel cells integrated with a dry gasifier. <i>Energy Conversion and Management</i> , 2016, 130, 119-129.	4.4	21
43	A highly efficient A-site deficient perovskite interlaced within two dimensional MXene nanosheets as an active electrocatalyst for hydrogen production. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 37476-37489.	3.8	20
44	Post-decontamination treatment of MXene after adsorbing Cs from contaminated water with the enhanced thermal stability to form a stable radioactive waste matrix. <i>Journal of Nuclear Materials</i> , 2021, 543, 152566.	1.3	19
45	Exceptional stability of hydrotalcite derived spinel Mg(Ni)Al <sub>2</sub> O <sub>4</sub> catalyst for dry reforming of methane. <i>Catalysis Today</i> , 2022, 403, 74-85.	2.2	19
46	Terahertz time-domain spectroscopy of thin and flexible CNT-modified MXene/polymer composites. <i>Applied Physics A: Materials Science and Processing</i> , 2021, 127, 1.	1.1	18
47	Boosting performance of the solid oxide fuel cell by facile nano-tailoring of La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3-<math>\delta</math></sub> cathode. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 37587-37598.	3.8	18
48	Electrosprayed Polymer-Hybridized Multidoped ZnO Mesoscopic Nanocrystals Yield Highly Efficient and Stable Perovskite Solar Cells. <i>ACS Omega</i> , 2018, 3, 9648-9657.	1.6	17
49	Recent developments in catalyst synthesis using DBD plasma for reforming applications. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 15367-15388.	3.8	17
50	Direct chemical synthesis of interlaced NiMn-LDH nanosheets on LSTN perovskite decorated Ni foam for high-performance supercapacitors. <i>Surface and Coatings Technology</i> , 2021, 421, 127455.	2.2	17
51	Design and analysis of compact hotbox for solid oxide fuel cell based 1 kW-class power generation system. <i>Applied Energy</i> , 2017, 208, 620-636.	5.1	17
52	Reutilizing Methane Reforming Spent Catalysts as Efficient Overall Water-Splitting Electrocatalysts. <i>ACS Omega</i> , 2021, 6, 21316-21326.	1.6	16
53	Performance evaluation of solid oxide carbon fuel cells operating on steam gasified carbon fuels. <i>Chemical Engineering Journal</i> , 2016, 300, 384-393.	6.6	15
54	Long-term performance degradation study of solid oxide carbon fuel cells integrated with a steam gasifier. <i>Energy</i> , 2016, 113, 1051-1061.	4.5	15

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55	Performance characteristics of a robust and compact propane-fueled 150W-class SOFC power-generation system. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 6160-6171.	3.8	15
56	Rational design of MXene coated polyurethane foam for the removal of Pb <sup>2+</sup> . <i>Materials Letters</i> , 2021, 304, 130600.	1.3	15
57	Sorption enhanced steam reforming of methane over waste-derived CaO promoted MgNiAl hydrotalcite catalyst for sustainable H <sub>2</sub> production. <i>Journal of Environmental Chemical Engineering</i> , 2022, 10, 107651.	3.3	15
58	Hydrogen Production from Methane Cracking in Dielectric Barrier Discharge Catalytic Plasma Reactor Using a Nanocatalyst. <i>Energies</i> , 2020, 13, 5921.	1.6	14
59	Partial oxidation of methane over CeO <sub>2</sub> loaded hydrotalcite (MgNiAl) catalyst for the production of hydrogen rich syngas (H <sub>2</sub> , CO). <i>International Journal of Hydrogen Energy</i> , 2021, 46, 36663-36677.	3.8	14
60	Thin films of nanostructured ZnO used as an electron-transporting material for improved performance of perovskite solar cells. <i>Applied Physics A: Materials Science and Processing</i> , 2018, 124, 1.	1.1	13
61	Effect of nano-Al <sub>2</sub> O <sub>3</sub> addition on mechanical durability of nickel-yttria stabilized zirconia anode support of solid oxide fuel cells. <i>Ceramics International</i> , 2018, 44, 14824-14833.	2.3	13
62	Development of MXene / WO <sub>3</sub> embedded PEDOT : PSS hole transport layers for highly efficient perovskite solar cells and X-ray detectors. <i>International Journal of Energy Research</i> , 2022, 46, 12485-12497.	2.2	13
63	Structural, optical and magnetic properties of Mn <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> nanoferrites synthesized by a simple capping agent-free coprecipitation route. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2019, 245, 55-62.	1.7	12
64	Nano-Oxide Dispersed Ferritic Stainless Steel for Metallic Interconnects of Solid Oxide Fuel Cells. <i>ECS Transactions</i> , 2017, 78, 1575-1582.	0.3	11
65	Evaluation of steady-state characteristics for solid oxide carbon fuel cell short-stacks. <i>Applied Energy</i> , 2017, 187, 886-898.	5.1	11
66	Highly durable nano-oxide dispersed ferritic stainless steel interconnects for intermediate temperature solid oxide fuel cells. <i>Journal of Power Sources</i> , 2019, 439, 227109.	4.0	11
67	A multifunctional blade-coated ZnO seed layer for high-efficiency perovskite solar cells. <i>Applied Physics A: Materials Science and Processing</i> , 2019, 125, 1.	1.1	11
68	Scaling up syngas production with controllable H <sub>2</sub> /CO ratio in a highly efficient, compact, and durable solid oxide coelectrolysis cell unit-bundle. <i>Applied Energy</i> , 2020, 257, 114036.	5.1	11
69	Enhanced efficiency and stability of perovskite solar cells using polymer-coated bilayer zinc oxide nanocrystals as the multifunctional electron-transporting layer. <i>Journal of Colloid and Interface Science</i> , 2019, 538, 426-432.	5.0	10
70	Valorization of Wet Oily Petrochemical Sludge via Slow Pyrolysis: Thermo-Kinetics Assessment and Artificial Neural Network Modeling. <i>Frontiers in Energy Research</i> , 2022, 9, .	1.2	10
71	Computational Analysis of the Hydrodynamic Behavior for Different Air Distributor Designs of Fluidized Bed Gasifier. <i>Frontiers in Energy Research</i> , 2021, 9, .	1.2	9
72	Metal Sulfide/Mxene Based Nanostructured Electrode Materials for High-Performance Supercapacitors. <i>ECS Meeting Abstracts</i> , 2019, MA2019-04, 294-294.	0.0	9

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73	Performance Comparison of Industrially Produced Formaldehyde Using Two Different Catalysts. Processes, 2020, 8, 571.	1.3	8
74	Design and Development of an Efficient Screw Press Expeller for Oil Expression from Jatropha Curcas Seeds: A Computational Flow Dynamics Study of Expeller for Performance Analysis. Industrial & Engineering Chemistry Research, 2013, 52, 2123-2129.	1.8	6
75	MAPbI <sub>3</sub> microneedle-arrays for perovskite photovoltaic application. Nanoscale Advances, 2019, 1, 64-70.	2.2	6
76	Wettability control of modified stainless steel surfaces for oxide catalyst carrier slurry coating. Journal of Industrial and Engineering Chemistry, 2020, 91, 330-339.	2.9	5
77	Effects of La <sub>2</sub> O <sub>3</sub> content and particle size on the long-term stability and thermal cycling property of La <sub>2</sub> O <sub>3</sub> -dispersed SUS430 alloys for SOFC interconnect materials. Metals and Materials International, 2017, 23, 1250-1256.	1.8	4
78	Co-axial electrospay: a versatile tool to fabricate hybrid electron transporting materials for high efficiency and stable perovskite photovoltaics. Nanoscale Advances, 2019, 1, 1297-1304.	2.2	4
79	Effect of Ni substitution on structural, optical and magnetic properties of ferrite nanoparticles synthesized by co-precipitation route. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2019, 251, 114442.	1.7	4
80	Comparative hydrodynamics study of fluidized bed gasifier incorporating static and rotating air distributor plates: A CFD approach. Powder Technology, 2022, 405, 117500.	2.1	4
81	Synthesis of Ash Derived Co/Zelite Catalyst for Hydrogen Rich Syngas Production via Partial Oxidation of Methane. Bulletin of Chemical Reaction Engineering and Catalysis, 2021, 16, 507-516.	0.5	3
82	Numerical Investigation for 1kW-Class FT-SOFC System to Evaluate the Compact Size Integrated Hotbox Design. ECS Transactions, 2017, 78, 2569-2579.	0.3	0
83	Enhanced Long-Term Durability of Solid Oxide Electrolysis Cells by Microstructure Tailoring of the Air Electrode. ECS Meeting Abstracts, 2021, MA2021-03, 72-72.	0.0	0
84	Oxidation Characteristics of Nano-Oxide Dispersed Ferritic Stainless Steel Alloys for Solid Oxide Fuel Cell Interconnects. ECS Meeting Abstracts, 2018, , .	0.0	0