JIMMA UNIVERSITY
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JIMMA INSTITUTE OF TECHNOLOGY

Faculty of Materials Science and Engineering
Resent Publications (2020-2024)

2024 -PUBLICATIONS

1. Integrated First Principles and Experimental Investigation of Thermoelectric Transport in Zr/Ti Half-Heusler-Type High Entropy Alloys- https://doi.org/10.1002/ente.202400061
2. Electrolytic synthesis of γ-Al2O3 nanoparticle from aluminum scrap for enhanced methylene blue adsorption: experimental and RSM modeling- https://doi.org/10.1038/s41598-024-67656-9
3. Microstructure and thermoelectric properties of as-cast Ag2Te/AgBiTe2 and Ag2Te/Bi2Te3 two-phase alloys- https://doi.org/10.1016/j.jpcs.2024.111995
4. MnOx-Coffea arabica Husk and Catha edulis Leftover Biochar Nanocomposites for Removal of Methylene Blue from Wastewater- https://doi.org/10.1155/2024/7585145
5. Magnetic biochar nanocomposites of coffee husk and khat (Catha edulis) leftover for removal of Cr (VI) from wastewater- https://doi.org/10.1016/j.crgsc.2024.100403
6. RSM versus ANN for modeling and optimization of magnetic adsorbent based on montmorillonite and CoFe2O4- http://creativecommons.org/licenses/by/4.0/
7. Appropriate Technology: Construction of Cobblestone Roads- https://orcid.org/0000-0002-7736-6858
8. . Investigation of structural, electrical, dynamical, optical, and thermoelectric properties of Sr-doped Mg2Si systems using first-principles calculations- (http://dx.doi.org/10.1557/s43578-024-01402-9)
9. Cesium Lead Bromide Perovskite Nanocrystals Synthesized by Supersaturated Recrystallization at Room Temperature: Comparison of One-Step and Two-Step Processes- (http://dx.doi.org/10.1039/D4NA00423J)
10. Silver-Doped CsPbI2Br Perovskite Semiconductor Thin Films- (http://dx.doi.org/10.3390/electronicmat5020005)
11. Conjugated polymer-perovskite quantum dot (MDMO-PPV:CsPbBr3) nanocomposites: Miscibility, nano-structures, and properties- (http://dx.doi.org/10.1016/j.nxnano.2024.100053)
12. Thickness dependent tribological and magnetic behavior of two-dimensional cobalt telluride (CoTe2). (http://dx.doi.org/10.1088/2053-1583/ad3cec).
13. Subpicomolar Dopamine Detection Using Two-Dimensional Cobalt Telluride. (https://pubs.acs.org/doi/10.1021/acsaenm.4c00321).
14. 3. Ultralow Detection of Mancozeb Using Two-Dimensional Cobalt Telluride (CoTe2). (https://pubs.acs.org/doi/10.1021/acs.langmuir.4c01549).

15. Combined ozone, photo, and electrocoagulation technologiesAn innovative technique for treatment of distillery industrial wastewater. (https://doi.org/10.4491/eer.2023.042).
16. 2. Enhanced performance of electrospun poly(ethylene oxide)/reduced graphene oxide polymer electrolyte for lithium-ion batteries. (https://doi.org/10.1016/j.matlet.2023.135545).

2023- PUBLICATIONS

1. The beneficial effect of Fe addition in PbTe-Ni diffusion bonded thermoelectric contact interfacesâ€“A comprehensive phase evolution study- https://doi.org/10.1016/j.actamat.2023.119410
2. Thermoelectric Transport of a Novel Zr-Based Half-Heusler High-Entropy Alloy- https://doi.org/10.1002/ente.202301119
3. Optimization of adsorption of methyl orange from aqueous solution by magnetic CoFe2O4/ZnAl-layered double hydroxide composite using response surface methodology- DOI 10.1088/2053-1591/acb31b
4. Transport properties and microstructural evolution of Bi-Cu-Te ternary alloys- https://doi.org/10.1007/s10853-023-09004-2
5. Facile preparation of magnetite cellulose nanocomposite from a sustainable resource- https://doi.org/10.1007/s12034-022-02860-9
6. Optimization of Cd (II) removal from aqueous solution by natural hydroxyapatite/bentonite composite using response surface methodology- https://doi.org/10.1038/s41598-023-32413-x
7. Effects of doping iron on the colouring properties of copper chromate pigment- https://doi.org/10.1007/s12034-023-02939-x
8. Self-healing Coal fly ash Construction Brick for CO2 and Dust Adsorption- https://revue.ummto.dz/index.php/JMES/article/view/3225
9. Modeling background level of XRD peak profile for the variance method of size-strain analysis- https://doi.org/10.1007/s10853-023-08966-7
10. Phase Behavior and Role of Organic Additives for Self-Doped CsPbI3 Perovskite Semiconductor Thin Films- (http://dx.doi.org/10.3390/mi14081601)
11. Hydrothermal Synthesis of Heterostructured g-C3N4/Ag–TiO2 Nanocomposites for Enhanced Photocatalytic Degradation of Organic Pollutants- (http://dx.doi.org/10.3390/ma16155497)
12. A Blue-Light-Emitting 3 nm-Sized CsPbBr3 Perovskite Quantum Dot with ZnBr2 Synthesized by Room-Temperature Supersaturated Recrystallization- (http://dx.doi.org/10.3390/photonics10070802)
13. All-Inorganic CsPbBr3 Perovskite Nanocrystals Synthesized with Olive Oil and Oleylamine at Room Temperature- (http://dx.doi.org/10.3390/mi14071332)

14. Synergetic Effect of Three-in-One Nanocomposite Based on AuNPs and rGO-MWCNTs for Ultrasensitive Electrochemical Bio-Diagnostic Applications-(http://dx.doi.org/10.1149/1945-7111/acca4d)
15. Self-powered white light photodetector with Enhanced photoresponse using Camphor sulphonic acid treated CsPbBr3 Perovskite and carbon matrix-(http://dx.doi.org/10.1016/j.matlet.2023.134250)
16. Single-Step Synthesis of Graphitic Carbon Nitride Nanomaterials by Directly Calcining the Mixture of Urea and Thiourea: Application for Rhodamine B (RhB) Dye Degradation-(http://dx.doi.org/10.3390/nano13040762)
17. Fabrication of Visible Light Sensitive Electrospun TiO2 Nanofibers Using Squaric Acid for Photocatalytic Application. (https://doi.org/10.1155/2023/4213684).

2022- PUBLICATIONS

1. Influence of Cold Rolling and Thermal Treatment on Microstructure and Texture Evolution, and Tensile Behaviour of High Strength Al-Co-Sc-Zr Alloys-https://doi.org/10.1016/j.jallcom.2022.164427
2. Zr-Based Quaternary Half-Heusler Alloy Systems ZrNimX0.5Sb1.5-m (X=Fe/In): Studies on Phase Evolution, Crystal Structures and Electronic Properties-https://doi.org/10.1016/j.jallcom.2022.164604
3. Two-dimensional Cobalt Telluride as Piezo-tribogenerator https://doi.org/10.1039/D2NR00132B
4. Multifold enhancement in magnetization of atomically thin Cobalt Telluride-https://doi.org/10.1007/s00339-022-05425-z
5. A Review of Lamellar Eutectic Morphologies for Enhancing Thermoelectric and Mechanical Performance of Thermoelectric Materials-https://doi.org/10.1007/s41745-021-00273-x
6. An innovative catalyst of PdNiP nanosphere deposited PEDOT: P.S.S./rGO hybrid material as an efficient electrocatalyst for alkaline urea oxidation-https://doi.org/10.1007/s00289-022-04100-w
7. Effect of Annealing Temperature of Brownish-Red Pigment Based on Iron Oxide Extracted by Hydrothermal Route from Mill-Scale Steel Slag-https://doi.org/10.1007/s40831-021-00470-z
8. Insights into electrochemical behavior and kinetics of NiP on PEDOT: P.S.S./reduced graphene oxide as high-performance electrodes for alkaline urea oxidation-https://doi.org/10.1007/s10008-021-05080-z
9. Insights into the Electrochemical Behavior and Kinetics of NiP@PANI/rGO as a High-Performance Electrode for Alkaline Urea Oxidation-https://doi.org/10.1007/s12678-022-00718-6

10. Understanding the mechanics of complex topology of the 3D printed Anthill architecture- https://doi.org/10.1093/oxfmat/itac003
11. Energy Harvesting from Atomically Thin Co2Te3- https://doi.org/10.1021/acs.jpcc.2c02102
12. Phase Behavior and Role of Organic Additives for Self-Doped CsPbI3 Perovskite Semiconductor Thin Films. (http://dx.doi.org/10.3390/mi14081601)
13. Hydrothermal Synthesis of Heterostructured g-C3N4/Ag–TiO2 Nanocomposites for Enhanced Photocatalytic Degradation of Organic Pollutants. (http://dx.doi.org/10.3390/ma16155497)
14. A Blue-Light-Emitting 3 nm-Sized CsPbBr3 Perovskite Quantum Dot with ZnBr2 Synthesized by Room-Temperature Supersaturated Recrystallization. (http://dx.doi.org/10.3390/photonics10070802).
15. 8. All-Inorganic CsPbBr3 Perovskite Nanocrystals Synthesized with Olive Oil and Oleylamine at Room Temperature. (http://dx.doi.org/10.3390/mi14071332).
16. Synergetic Effect of Three-in-One Nanocomposite Based on AuNPs and rGO-MWCNTs for Ultrasensitive Electrochemical Bio-Diagnostic Applications. (http://dx.doi.org/10.1149/1945-7111/acca4d).
17. Self-powered white light photodetector with Enhanced photoresponse using Camphor sulphonic acid treated CsPbBr3 Perovskite and carbon matrix. (http://dx.doi.org/10.1016/j.matlet.2023.134250).
18. Single-Step Synthesis of Graphitic Carbon Nitride Nanomaterials by Directly Calcining the Mixture of Urea and Thiourea: Application for Rhodamine B (RhB) Dye Degradation. (http://dx.doi.org/10.3390/nano13040762).
19. Vacancy-Mediated Anomalous Emission Characteristics of Size-Confined Semiconducting CoTe2. (https://pubs.acs.org/doi/10.1021/acsami.2c14318).
20. Identification of aggregated 2D cobalt tellurides using a spatial self-phase modulation technique. (https://doi.org/10.1364/OL.465545).

2021- PUBLICATIONS

1. Emerging two-dimensional tellurides- https://doi.org/10.1016/j.mattod.2021.08.008
2. Anisotropy of Microstructure and Its Influence on Thermoelectricity: The Case of Cu2Te-Sb2Te3 Eutectic- https://doi.org/10.1021/acsaem.1c02664
3. Thermophysical and magnetic properties of Co-Ni-Mo-Al-Ta class of tungsten free Co-based superalloys- https://doi.org/10.1016/j.jallcom.2021.160379
4. Polypyrrole@polyaniline-reduced graphene oxide nanocomposite support material and Cobalt for the enhanced electrocatalytic activity of nickel phosphide microsphere towards alkaline urea oxidation- https://iopscience.iop.org/article/10.1088/2053-1591/ac2287

5. Synthesis and characterizations of (Mg, Co, Ni, Cu, Zn)O high-entropy oxides- https://doi.org/10.1007/s42452-021-04724-z
6. Scalable Synthesis of Atomically Thin Gallium Telluride Nanosheets for Supercapacitor Applications- https://doi.org/10.1021/acsanm.1c00428
7. Synthesis, characterization and electrocatalytic study of Pd supported on CeO2â€“N, S-rGO composite towards hydrogen and oxygen evolution reaction- https://doi.org/10.1007/s10854-021-05853-2
8. Thermoelectric properties of BiSbTe-type alloys prepared by chill-casting and cryo-milling- https://doi.org/10.1016/j.matchemphys.2020.124116
9. Effect of support material on the electrocatalytic activity of palladium Nanoparticle toward hydrogen evolution reaction- https://iopscience.iop.org/article/10.1088/2053-1591/abdf1c
10. Recent progress in electron transport bilayer for efficient and low-cost perovskite solar cells: a review. (https://link.springer.com/article/10.1007%2Fs10008-021-05064-z).
11. Low temperature sintering of (Ba0.85Ca0.15) (Ti0.90Zr0.10)O3 lead-free piezoceramic with the additive of MnO2. (https://link.springer.com/article/10.1007/s10832-021-00250-x).

2020- PUBLICATIONS

1. Production of magnetite nanoparticles from Ethiopian iron ore using solvent extraction and studying parameters that affect crystallite size- https://iopscience.iop.org/article/10.1088/2053-1591/abc2df
2. Fabrication of large-scale p-type 75%Sb2Te3-25%Bi2Te3 thermoelectric materials by gas atomization and hot isostatic pressing- https://doi.org/10.1016/j.materresbull.2020.110924
3. Synergetic effect between MoS2 and N, S- doped reduced graphene oxide supported palladium nanoparticles for hydrogen evolution reaction- https://doi.org/10.1016/j.matchemphys.2020.123106
4. Electrocatalytic Investigation of M@Pd (M=Ni, Co, Cu) Core-Shell Nanostructure Supported on N, S-Doped Reduced Graphene Oxide towards Hydrogen and Oxygen Evolution Reaction- https://doi.org/10.1002/slct.202002200
5. Molecularly imprinted polyaniline molecular receptor-based chemical sensor for the electrochemical determination of melamine- https://doi.org/10.1002/jmr.2836
6. Development of Melamine Electrochemical Sensor Using Molecularly Imprinted Conducting Polyanilne-Oxalic Acid Blend as a Molecular Recognition Element- https://doi.org/10.4028/www.scientific.net/NHC.29.61
7. Mechanical and Thermoelectric Properties of Eutectic Composite (Bi,Sb)2Te3/Te Thermoelectric Material- https://doi.org/10.1007/s12666-020-01959-z

8. Development of Molecularly Imprinted Conducting Polymer Composite Film-Based Electrochemical Sensor for Melamine Detection in Infant Formula- https://doi.org/10.1021/acsomega.9b03747
9. Bioinspired Aluminum Composite Reinforced with Soft Polymers with Enhanced Strength and Plasticity- https://doi.org/10.1002/adem.201901116
10. Novel multifunctional molecular recognition elements based on molecularly imprinted poly (aniline-co-itaconic acid) composite thin film for melamine electrochemical detection- https://doi.org/10.1016/j.sbsr.2019.100318
11. Effect of graphene addition on the mechanical characteristics of AA7075 aluminium nanocomposites (https://doi.org/10.1007/s42823-020-00157-7).
12. Polyaniline–graphene quantum dots (PANI–GQDs) hybrid for plastic solar cell. (https://doi.org/10.1007/s42823-019-00064-6).
13. Functionalization of textile cotton fabric with reduced graphene oxide /Mn O2 / polyaniline based electrode for supercapacitor- (https://doi.org/10.1088/2053-1591/ab669d)