

Dr. Meshal Alzaid

Dean, College of Science | Associate Professor, Materials & Nanotechnology
Scientific Council Member | University Council Member, Jouf University Endowments Council Member
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Professional Summary

Visionary academic and innovation leader driving impactful applied research across energy storage, water treatment, environmental protection, and sustainable nanotechnology. As Dean of the College of Science at Jouf University and a member of strategic university councils, I lead initiatives that align scientific advancement with Saudi Vision 2030 priorities. With over **150 peer-reviewed publications**, more than **3400 citations**, and **8 USPTO patents**, I lead multi-disciplinary teams and cross-sector collaborations to translate research into real-world solutions.

EDUCATION

Jouf University Main Campus, SKAKA, KSA

Aug 2006 – Jul 2010

- Bachelor Degree in physics

University of Dayton, Dayton, OH, USA

May 2013 – Dec 2014

- Master of Science, Materials Engineering

North Dakota State University, Fargo, ND, USA

Aug 2016 – May 2019

- Doctor of Philosophy, Materials & Nanotechnology

Research & Impact Areas

- Energy Storage & Conservation (supercapatteries, hydrogen storage, next-gen batteries)
- Water Treatment & Environmental Protection (filtration membranes, catalytic degradation)
- Sustainable Nanotechnology for Agriculture & Green Environments (smart polymers, bio-composites)
- Circular Economy & Waste-to-Resource Innovation (biocatalysts from agro-waste)
- Green Hydrogen & Solar Energy Materials (solar-responsive semiconductors, electrolysis catalysts)

Major Achievements

- The EcoSphere Project (<https://ecosphere-eight.vercel.app>)

Founder of The EcoSphere Project which is a student-driven sustainability initiative that fosters environmental awareness and responsibility through hands-on activities such as tree plantation and care. It promotes sustainable practices while integrating education and practical learning, encouraging students to actively engage in environmental stewardship. The project emphasizes both

tree plantation as a foundational step toward creating green spaces and **tree adoption** as a strategy for long-term care and maintenance, ensuring sustained environmental impact.

- **The Jouf 360 Initiative**

Founder of The Jouf 360 initiative which is a comprehensive student development Journey. It is four-phases academic journey designed to empower all students—particularly first-generation learners, students from rural regions, and women in STEM fields. This structured initiative provides continuous academic, personal, and professional support from the first year through graduation. Institutionalized as part of college of science's strategic framework and aligned with Saudi Vision 2030 and SDG 4, the model integrates mentoring, research engagement, innovation pathways, entrepreneurship, field experience, and civic service. Students graduate not only with academic credentials, but also with real-world skills, documented achievements, and the confidence to lead in science, innovation, and society.

- **Listed in Stanford's Top 2% Scientists for 2024 and 2025.**
- **Published more than 150 Scientific Articles in renewable energy and Environmental Protection area with more than 3400 Citations and H-index 33.**
- **Patent Granted in Active Electrodes for Biofuel Productions from Waster Olive Tree and Oil, United States Patent and Trademark Office (USPTO) (HMA Hassan, M Alzaid, IH Alsohaimi, MF Hussein, MRA Elaassar, HM Ali. Eco-friendly biodiesel production method using waste olive oil and pulp-derived catalysts. *US Patent 12,319,882 (2025)*).**
- **Geneva international exhibition of inventions 2024 Medals for the following**
 - Sustainable Biodiesel Production from Waste Olive Oil: Utilizing Olive Pulp-Derived Catalysts (Gold Medal)
 - Solar Remediation Wastewater System using Confined CdS Quantum Dots in Polysulfone Membrane (Gold Medal)
 - A chemiresistive substrate for a hydrogen gas Sensor (Gold Medal).
 - Nanostructured Hybrid Electrodes for Energy Efficient Water Desalination (Silver Medal).
- **Geneva international exhibition of inventions 2025 Medals for the following**
 - Ultrafiltration Filters to Enhance Water Treatment Efficiency and Provide Sustainable Solutions (Gold Medal)
 - Green Capsule: Biopolymeric Materials for Desert Agriculture and Water Resource (Silver Medal)
 - Recycling Waste to Create Nanofibers for Medical, Radiation shielding, dosimetry and Industrial Applications (Bronze Medal)
 - MolecuLab: an integrated framework for designing and analyzing drug-like molecules for drug discovery and Delivery (Bronze Medal)
- **Book Chapter**

Hassan Hassan, Meshal M Alzaid and Mohamed El Aassar. Electrospun Nanofibers for Catalytic Applications: Design, Fabrication, and Functionality. In: Electrospinning Techniques - Advances, Applications, and Challenges. IntechOpen (June 03, 2025).

PROFESSIONAL HISTORY

- **Demonstrator:** Physic Department, Jouf University KSA, 2010-2014
- **Lecture:** Physic Department, Jouf University KSA, 2015-2019
- **Assistant professor of materials and nanotechnology Jouf University KSA, 2019 – 2023**
- **Associate professor of materials and nanotechnology Jouf University KSA, 2023 – Now**
- **Department Chair:** Physics Department, Jouf University KSA, 2020-2021
- **Graduate Program Coordinator:** Physics Department, Jouf University KSA, 2020-2021
- **Secretary of the College Council:** College of Science, Jouf University KSA, 2020-now
- **Vice Dean:** College of Science, Jouf University KSA, 2021-2023
- **Vice Dean for Academic Affairs, College of Science:** College of Science, Jouf University KSA, 2023-2024
- **Dean, College of Scienc,** Jouf University KSA, 2024-Now.
- **Director of Jouf University Central Labs, 2024-Now.**

Strategic Collaboration Projects (Lead Role)

(Keywords: international research, innovation ecosystem, academic-industry partnerships, R&D collaboration, policy consultancy)

- University of Florida (UF): Sustainable agriculture and biotechnology research
- UC Berkeley: MOF-based green chemistry applications with Prof. Omar Yaghi
- Chinese Academy of Sciences (CAS): Nanomaterials for water treatment
- City University of Hong Kong: Innovation policy and academic entrepreneurship
- Ministry of Environment, Water & Agriculture: Water use optimization and sustainability pilots

SKILLS

- Arabic as a native language, and English as a second language
- Proficient in computer skills such as Microsoft Office
- C, C++, FORTRAN, Python, UNIX scripting (Computer Skill Languages)
- Ab-initio packages: VASP, abinit, Quantum Espresso, CPMD

CONFERENCES:

- Materials Research Society Conference & Meetings MRS – USA 2019
- 2nd International Conference on Advanced Materials and Emerging Technologies – University of Engineering and Technology, 2021.
- 1st International Conference on Engineering and Applied Natural Sciences on 10-13 May 2022.
- International Conference on New Trends in Renewable Energy and Environment for 2030 Vision (ICNTREE 2023), January 2023, Jouf University, KSA
- 5th International Conference on Ionic Liquids in Separation and Purification Technology, February 2023, USA.
- The International Conference on Olive Cultivation Future and Industry (ICOCFI 2023), March 2023, Jouf University, KSA

- The Global Advanced Materials & Surfaces International Conference-GAMS June 2023, Paris, France.

MEMBERSHIP

- Materials Research Society MRS

GRANTS

Secured over \$1.3M USD across national and institutional projects:

- Development of Nanostructured Components for Solar Energy Conversion and Storage Based on Nanocomposite Semiconductor, institute funds ministry of education KSA **IF-JU-1-1527110410, 16K USD, 2020.**
- High-Performance Recycle Active Electrode Materials for Hybrid Energy Storage Devices, Jouf University **DSR-2021-03, 35K USD, 2021.**
- Smart Materials and structure for Sustainable Energy Storage and Water & Environmental applications, Jouf University **DSR-2022-RG-0128, 32K USD, 2022.**
- Investigating Novel Redox Active Transition Metal Sulfides for Battery-Supercapacitor Devices for Environmental and Renewable Energy Applications, institute funds ministry of education KSA **IF-JU-2-0054, 16K USD, 2023.**
- Reactivation/Upgrading of the Molecular Biology Research Unit, from research development and innovation authority (RDIA) KSA, **13395-MED-2023-JFU-R-3-1-HW, 1.2 M USD.**

SUPERVISION GRADUATE STUDENTS.

- Fai Alsalh, MS, Biomass Derived Electrode Material for Renewable Energy Storage Applications, **2020-2021**, Master Thesis Adviser
- Moharah Alwshih, MS, Role of Cu dilute on microstructures, optical, magnetic and photoluminescence properties of CdS film, **2020-2021**, Master Thesis Adviser
- Rakan Alenezi, MS, Fabrication and Characterization of Nanoparticles
- Incorporated Electrospun Polymer Composites for environmental remediation applications, **2022**, Master Thesis Adviser
- Mohammed Ashaghdali, MS, Ni Doped ZnO nanostructures: Synthesis, Structure, Properties and Application, **2022**, Master Thesis Adviser

Committees & Professional Service

(Keywords: quality assurance, accreditation, governance, institutional strategy, Management & leadership)

- Certified Governance Specialist (CGSP)
- GRC Professional (GRCP) – OCEG Certified GRC Professional
- ISO 9001 – Quality Management Systems
- ISO 31000 – Risk Manager
- ISO 22301 – Business Continuity Manager

- ISO 14001 – Environmental Management Systems
- ISO 21001 – Educational Organizations Management
- ISO 45001 – Occupational Health and Safety (OH&S) Management Systems
- Accreditation Reviewer for higher education programs
- Journal Reviewer and Editorial Board Member
- Journal Editor:
 - *Agriculture* (MDPI, Q2, IF 3.6)
 - *Molecules* (MDPI, Q1, IF 4.6)
 - *Desalination and Water Treatment* (Q3, IF 1.6)
- Member, Scientific Council, Jouf University
- Member, University Council, Jouf University
- Chair, Committee for Excellence Allowances and Research Rewards
- Chair, Strategic Planning and Annual Report Committee
- Member, Permanent Committee for Curriculum Development
- Member, Permanent Committee for Faculty Workload and Academic Schedules
- Member, Committee for Advisory Services Oversight
- Member, Indicator Monitoring Committee for University Leadership Initiatives
- Member, Permanent Committee for Scientific Research and Innovation
- Member, Permanent Committee for Graduate Studies
- Member, College Council of Science
- Member, Council of Graduate Studies and Scientific Research
- Chair or Member in Committees for Conferences (ICNTREE, ICOCFI, Camel Research)
- Program Accreditation Reviewer, Education & Training Evaluation Commission (ETEC)
- Academic Leadership Development, Leadersip Management International, INC, WACO, TEXAS USA

SELECTED PUBLICATIONS

1. M Alzaid, IH Alsohaimi, MS Alhumaimess, AA Alqadami, SS Alsaif, ... **Sustainable recycling: structure-property relationship of polyethylene terephthalate waste-derived polymers for efficient methylene blue removal.** *International Journal of Environmental Science and Technology*, 1-16 (2025).
2. MZ Iqbal, N Amjad, S Siddique, R Ali, U Aziz, S Aftab, M Alzaid. **Exploring the synergy of binder free as electrode materials for hybrid supercapacitors (vol 56, 105925, 2022).** *JOURNAL OF ENERGY STORAGE* 125 (2025).
3. MF Hasaneen, M Alzaid, M Ezzeldian, AA EI-Maaref, NMA Hadia. **Synthesis and physical properties of thin films obtained by electron beam evaporation for solar cell application.** *Journal of Non-Crystalline Solids* 660, 123552 (2025).
4. NMA Hadia, M Alzaid, M Ezzeldien, MF Hasaneen. **Fabrication and characterization of nanocomposite thin films for photocatalysis applications: N. M. A. Hadia et al..** *Optical and Quantum Electronics* 57 (7), 415 (2025).
5. AM Nassar, AH Alanazi, MM Alzaid, S Moustafa. **Harnessing wasted mushroom peel aqueous extract for mycogenic synthesis of zinc oxide nanoparticles for solar photocatalysis and antimicrobial applications.** *Biomass Conversion and Biorefinery*, 1-16 (2025).
6. AN Alrashidi, H Alwael, IH Alsohaimi, M Alzaid, HMA Hassan. **Development of High-Performance Polysulfone Ultrafiltration Membranes with Enhanced Permeability and Antifouling Properties via Amino-Functionalized Nanotube Incorporation.** *Journal of Environmental Chemical Engineering*, 115798 (2025).

7. MR EI-Aassar, RF Alolaimi, M Alzaid, NS Al-Muaikel, MS Alhumaimess, ... **Oil/Water separation using thiol-functionalized mesoporous silica-impregnated polyacrylonitrile/polyvinylidene fluoride electrospun nanofiber hybrid nanostructures.** *Separation and Purification Technology*, 131651 (2025).
8. NMA Hadia, MA Sunny, H Hassan, MW Iqbal, NA Ismayilova, S Bibi, ... **Synergistic performance of () for next-generation supercapatteries and hydrogen evolution reaction.** *Journal of Materials Science: Materials in Electronics* 36 (2), 130 (2025).
9. NMA Hadia, MA Mumtaz, MH Waris, MW Iqbal, S Khalil, NA Ismayilova, ... **Enhanced supercapacitor performance using hybrid material: a novel approach for high energy storage and improved electrochemical properties.** *Applied Physics A* 130 (11), 845 (2024).
10. MA Kariri, IH Alsohaimi, M Alzaid, MS Alhumaimess, AA Alqadami, ... **Transformative strategies for heavy metals extraction: Ionic liquid-boosted fizzy capsule for distributive solid-phase microextraction in aquatic environments.** *Journal of Industrial and Engineering Chemistry* (2024).
11. AM Mebed, M Mushtaq, M Alshamary, M Alzaid, A Laref, AM Abd-Elnaiem. **Selective Co and Sn co-doped black phosphorene for hydrogen storage: first-principles insights.** *Adsorption*, 1-12 (2024).
12. M Alzaid, AM Abu-Dief, NMA Hadia, M Ezzeldien, WS Mohamed. **Synthesis and characterization study of spinel nanoparticles synthesized via the facial co-precipitation route for optoelectronic application.** *Optical and Quantum Electronics* 56 (7), 1-22 (2024).
13. WS Mohamed, A Tozri, MSM Abdelbaky, S García-Granda, TS Almutairi, ... **Effect of heavy doping on the magnetic, structural, morphological, and optical characteristics of nanoparticles.** *Ceramics International* (2024).
14. IH Alsohaimi, MA Kariri, M Alzaid, MS Alhumaimess, MY EI-Sayed. **Efficient extraction of heavy metals from aqueous environments using magnetic effervescent Tablet-Assisted Ionic Liquid-Based dispersive Solid-Phase microextraction.** *Journal of Molecular Liquids* 393, 123663 (2024).
15. IH Alsohaimi, MS Alhumaimess, M Alzaid, AA Essawy, MR EI-Aassar, Mohamed, R. M. K.; Hassan, H. M. A. **Tailoring Confined CdS Quantum Dots in Polysulfone Membrane for Efficiently Durable Performance in Solar-Driven Wastewater Remediating Systems.** *J. Environ. Manage.* **2023**, 332, 117351. <https://doi.org/10.1016/j.jenvman.2023.117351>
16. Alzaid, M.; Iqbal, M. Z.; Alqahtani, B.; Alanazi, R.; Alsohaimi, I. H.; Mohamed, W. S.; Hadia, N. M. A. **Tailoring the Interfacial Surfaces of Tungsten and Molybdenum Tungsten Disulfide Electrodes for Hybrid Supercapacitors.** *RSC Adv.* **2023**, 13 (23), 15575–15585. <https://doi.org/10.1039/D3RA00847A>.
17. Alzaid, M.; Mohamed, W. S.; Alanazi, R.; Alsohaimi, I. H.; Hassan, H. M. A.; Hadia, N. M. A.; Ezzeldien, M.; El-Aassar, M. R.; Abu-Dief, A. M. **Novel Binary Mixed Oxide Nanocomposites: Facile Synthesis, Characterization, and Photocatalysis Enhancement.** *J. Mater. Res. Technol.* **2023**, 23, 2454–2466. <https://doi.org/10.1016/j.jmrt.2023.01.105>.
18. Liaqat, M.; Khalid, N. R.; Tahir, M. B.; Znaidia, S.; Alrobei, H.; Alzaid, M. **Visible Light Induced Photocatalytic Activity of for the Degradation of Organic Dye and Tetracycline.** *Ceram. Int.* **2023**, 49 (7), 10455–10461. <https://doi.org/10.1016/j.ceramint.2022.11.229>.
19. Hadia, N. M. A.; Shaban, M.; Ahmed, A. M.; Mohamed, W. S.; Alzaid, M.; Ezzeldien, M.; Hasaneen, M. F.; El Malti, W.; Abdelazeez, A. A. A.; Rabia, M. **Photoelectrochemical Conversion of Sewage Water into Fuel over the Composite Electrode.** *Catalysts* **2023**, 13 (3), 456. <https://doi.org/10.3390/catal13030456>.
20. Iqbal, M. Z.; Amjad, N.; Ali, R.; Khan, M. W.; Siddique, S.; Aftab, S.; Wabaidur, S. M. **Elucidating Binder-Free Magnetron Sputtered Molybdenum-Tungsten-Disulfide Thin Films for Battery-Supercapacitor Devices.** *J. Alloys Compd.* **2023**, 942, 168929. <https://doi.org/10.1016/j.jallcom.2023.168929>.

21. Hadia, N. M. A.; Rabia, M.; Alzaid, M.; Mohamed, W. S.; Hasaneen, M. F.; Ezzeldien, M.; Shaban, M.; Ahmed, A. M.; Mohamed, S. H.; Awad, M. A. **-Poly(1H-Pyrrole) Nanocomposite for Hydrogen Generation from Red Sea Water with High Efficiency.** *Phys. Scr.* **2023**, *98* (8), 085509. <https://doi.org/10.1088/1402-4896/ace391>.
22. Fatima, J.; Tahir, M. B.; Rehman, A.; Sagir, M.; Rafique, M.; Assiri, M. A.; Imran, M.; Alzaid, M. **Structural, Optical, Electronic, Elastic Properties and Population Inversion of Novel 2D Carbides and Nitrides MXene: A DFT Study.** *Mater. Sci. Eng. B* **2023**, *289*, 116230. <https://doi.org/10.1016/j.mseb.2022.116230>.
23. Alzaid, M.; Alanazi, R.; Alsohaimi, I. H.; Mohamed, W. S.; Hadia, N. M. A.; Ezzeldien, M.; Iqbal, M. Z. **Hydrothermally Assisted Bimetallic Transition Metal Sulfide as Battery Grade Electrode and Activated Carbon as Capacitive Electrode for Hybrid Energy Storage Devices.** *Diam. Relat. Mater.* **2023**, *134*, 109737. <https://doi.org/10.1016/j.diamond.2023.109737>.
24. Habib, M.; Zhou, X.; Tang, L.; Xue, G.; Akram, F.; Alzaid, M.; Zhang, D. **Phase and Domain Engineering Strategy for Enhancement of Piezoelectricity in the Lead-Free Ceramics.** *J. Mater.* **2023**, *9* (5), 920–929. <https://doi.org/10.1016/j.jmat.2023.02.015>.
25. Fatima, U.; Tahir, M. B.; Gouadria, S.; Khalid, N. R.; Nawaz, T.; Sagir, M.; Siddeeg, S. M.; Alrobei, H.; Alzaid, M. **Synthesis of Ternary Photocatalysts Phosphorene for the Degradation of Dyes and Pharmaceuticals.** *Appl. Nanosci.* **2023**, *13* (8), 5501–5507. <https://doi.org/10.1007/s13204-023-02762-0>.
26. Hadia, N. M. A.; Alzaid, M.; Alqahtani, B.; Al-Shaghdali, M.; Mohamed, W. S.; Ezzeldien, M.; Shaban, M.; Ahmed, A. M.; Rabia, M.; Mohamed, S. H.; Awad, M. A. **Enhancement of Optical, Electrical and Sensing Characteristics of ZnO Nanowires for Optoelectronic Applications.** *J. Mater. Sci. Mater. Electron.* **2023**, *34* (5), 456. <https://doi.org/10.1007/s10854-023-09905-7>.
27. Khalid, I.; Tahir, M. B.; Sagir, M.; Dahshan, A.; Alzaid, M.; Alrobei, H. **Synthesis of Heterojunction with the Green Ag Nanoparticles for the Efficient Sunlight Photocatalytic Activity.** *Opt. Quantum Electron.* **2023**, *55* (1), 21. <https://doi.org/10.1007/s11082-022-04263-w>.
16. Shaban, M.; Khan, T. I.; Anwar, M.; Alzaid, M.; Alanazi, R. **Effect of Asymmetric Fins on Thermal Performance of Phase Change Material-Based Thermal Energy Storage Unit.** *Materials (Basel)* **2023**, *16* (7), 2567. <https://doi.org/10.3390/ma16072567>.
17. Siddique, A.; Khalil, A.; Almutairi, B. S.; Tahir, M. B.; Ahsan, T.; Hannan, A.; Elhosiny Ali, H.; Alrobei, H.; Alzaid, M. **Structural, Electronic, Mechanical and Dynamical Stability Properties of () Perovskite-Type Hydrides: A First Principle Study.** *Chem. Phys.* **2023**, *568*, 111851. <https://doi.org/10.1016/j.chemphys.2023.111851>.
18. Ayub, S.; Khalil, A.; Shaheen, R.; Gouadria, S.; Tahir, M. B.; Ullah, Z.; Hannan, A.; Yousef, E. S.; Alzaid, M. **First-Principles Calculations to Investigate Structural, Elastic, Electronic, Optical, and Magnetic Properties of for Photocatalytic Applications.** *Optik (Stuttg)* **2023**, *274*, 170565. <https://doi.org/10.1016/j.ijleo.2023.170565>.
19. Iqbal, Q.; Habib, M.; Alzaid, M.; Khan, M. T.; Tho, P. T.; Ahmad, P.; Shah, Y. A. **Synthesis and Investigation of Electromechanical Property of Lead-Free Quenched Ceramics.** *J. Mater. Sci. Mater. Electron.* **2023**, *34* (5), 404. <https://doi.org/10.1007/s10854-023-09837-2>.
20. Ezzeldien, M.; Dolia, R.; Alzaid, M.; Alsohaimi, I. H.; Quraishi, A. M.; Alvi, P. A. **Tunable Optical Gain Characteristics of Quantum Well Heterostructure under Uniaxial and Biaxial Pressures.** *Phys. status solidi (b)* **2023**, *260* (3), 2200479. <https://doi.org/10.1002/pssb.202200479>.
21. Hadia, N. M. A.; Ahmed, A. M.; Shaban, M.; Mohamed, W. S.; Alzaid, M.; Rabia, M. **Flower-like Shapes ()/Porous Photocatalytic Electrode for Converting Sewage Water into Fuel Gas.** *J. Mater. Sci. Mater. Electron.* **2023**, *34* (9), 805. <https://doi.org/10.1007/s10854-023-10154-x>.
22. Riaz, A.; Tahir, M. B.; ur Rehman, J.; Sagir, M.; Yousef, E. S.; Alrobei, H.; Alzaid, M. **Tailoring 2D Carbides and Nitrides Based Photo-Catalytic Nanomaterials for Energy Production and**

Storage: A Review. Zeitschrift für Phys. Chemie **2023**, 237 (1–2), 163–185. <https://doi.org/10.1515/zpch-2021-3158>.

23. MU Ghani, M Sagir, MB Tahir, HI Elsaedy, S Nazir, H Alrobei, M Alzaid. **CASTEP investigation of structural, electronic, and optical properties of halide perovskites () for solar cell applications.** *Inorganic Chemistry Communications* 155, 111007 (2023).
24. B Ahmed, MB Tahir, S Nazir, M Alzaid, A Ali, M Sagir, H Alrobei. **An Ab-initio simulation of boron-based hydride perovskites (and) for advance hydrogen storage system.** *Computational and Theoretical Chemistry* 1225, 114173 (2023).
25. J Fatima, MB Tahir, MA Rehman, MA Assiri, M Imran, M Alzaid, H Alrobei. **Structural, optical and electronic properties of novel 2D carbides and nitrides MXene based Materials: A DFT study.** *Optical and Quantum Electronics* 55 (7), 576 (2023).
26. M Sattar, M Alzaid, NUR Junejo, RA Malik, M Tanveer, M Latif. **Solar array drive assembly disturbance modeling, jitter analysis and validation tests for precision space-based operations.** *Journal of Vibration Engineering & Technologies* 11 (5), 2069-2080 (2023).
27. M Usman, J ur Rehman, MB Tahir, A Hussain, H Alrobei, M Alzaid, **First-principles calculations to investigate structural, electronics, optical, and mechanical properties of -based novel fluoroperovskites () for...** *Materials Science in Semiconductor Processing* 160, 107399 (2023).
28. M Usman, MB Tahir, S Gouadria, NR Khalid, J Rahman, F Ali, MI Khan, M Alzaid. **First-principles calculations to investigate Structural, Electronic, optical and mechanical properties of -based fluoroperovskite.** *Computational and Theoretical Chemistry* 1224, 114115 (2023).
29. IH Alsohaimi, M Alzaid, AN Alrashidi, NF Alotaibi, MS Alshammari. **Physical and chemical evaluation of groundwater quality in Jouf region in Saudi Arabia for energy, agriculture and drinking purposes.** *Desalination and Water Treatment* 294, 51-59 (2023).
30. S Ahmad, J Ur Rehman, MB Tahir, M Alzaid, K Shahzad. **Investigation of external isotropic pressure effect on widening of bandgap, mechanical, thermodynamic, and optical properties of rubidium niobate using first principles.** *Optical and Quantum Electronics* 55 (4), 346 (2023).
31. H Arif, MB Tahir, BS Almutairi, I Khalid, M Sagir, HE Ali, H Alrobei, ... **CASTEP study for mapping phase stability, and optical parameters of halide perovskite for photovoltaic and solar cell applications.** *Inorganic Chemistry Communications* 150, 110474 (2023).
32. A Rehman, M Tahir, S Gouadria, N Khan, NR Khalid, F Ali, HE Ali, M Alzaid. **First-principles calculations to investigate structural, electronic, optical and mechanical properties of -doped cubic perovskites for fuel cell applications.** *Solid State Communications* 360, 115063 (2023).
33. JU Rehman, MA Rehman, M Usman, MB Tahir, A Hussain, K Shahzad, ... **First-principles calculations to investigate structural, electronics, optical and mechanical properties of compound for superconducting application.** *Molecular Simulation* 49 (1), 76-84 (2023).
34. S Faryad, MB Tahir, BS Almutairi, M Sagir, S Nazir, B Ahmed, HE Ali, ... **The potential of MXenes-based nanomaterials towards high performance in energy production and storage applications.** *International Journal of Hydrogen Energy* 48 (90), 35153-35163 (2023).
35. AUR Shah, A Jalil, A Sadiq, M Alzaid, MS Naseem, R Alanazi, S Alanazi. **Effect of rice husk and wood flour on the structural, mechanical, and fire-retardant characteristics of recycled high-density polyethylene.** *Polymers* 15 (19), 4031 (2023).
36. B Ahmed, MB Tahir, A Ali, M Sagir, HI Elsaedy, H Alrobei, M Alzaid. **An ab-initio insight computation of structural, electronic and optical properties of -doped fluoro-perovskite for optoelectronic applications.** *Inorganic Chemistry Communications* 156, 111151 (2023).
37. A Siddique, A Khalil, BS Almutairi, MB Tahir, M Sagir, Z Ullah, A Hannan, ... **Structures and hydrogen storage properties of perovskite hydrides by DFT calculations.** *International Journal of Hydrogen Energy* 48 (63), 24401-24411 (2023).

51. Iqbal, M. Z.; Abbasi, U.; Alzaid, M. **Cobalt manganese phosphate and sulfide electrode materials for potential applications of battery-supercapacitor hybrid devices.** *J. Energy Storage* **2022**, *50*, 104632.
52. Iqbal, M. Z.; Alam, F.; Alam, S.; Khan, J.; Ali, A.; Alzaid, M. **Synergetic Electrochemical Performance of Strontium Phosphate/Polyaniline/Graphene for High Performance Supercapattery Devices.** *Diam. Relat. Mater.* **2022**, *124*, 108918.
53. Alam, S.; Iqbal, M. Z.; Amjad, N.; Ali, R.; Alzaid, M. **Magnetron sputtered tungsten di-sulfide: An efficient battery grade electrode for supercapattery devices.** *J. Energy Storage* **2022**, *46*, 103861.
54. Hadia, N. M. A.; Mohamed, S. H.; Mohamed, W. S.; Alzaid, M.; Khan, M. T.; Awad, M. A. **Structural, optical and electrical properties of thin films.** *J. Mater. Sci. Mater. Electron.* **2022**, *33* (1), 158–166.
55. Abdelazeez, A. A. A.; Hadia, N. M. A.; Mourad, A.-H. I.; El-Fatah, G. A.; Shaban, M.; Ahmed, A. M.; Alzaid, M.; Cherupurakal, N.; Rabia, M. **Effect of Au Plasmonic Material on Poly M-Toluidine for Photoelectrochemical Hydrogen Generation from Sewage Water.** *Polymers (Basel)* **2022**, *14* (4), 768.
56. Mohamed, W. S.; Hadia, N. M. A.; Alzaid, M.; Abu-Dief, A. M. **Impact of cations substitution on structural, morphological, optical and magnetic properties of nanoparticles synthesized by a facile hydrothermal approach.** *Solid State Sci.* **2022**, *125*, 106841.
57. Hannan, A.; Khalil, A.; Habib, M.; Wattoo, A. G.; Yousaf, M.; Naeem, H.; Kebaili, I.; Alrobei, H.; Alzaid, M. **Ferromagnetic Properties of Hybrid Structure.** *J. Supercond. Nov. Magn.* **2022**, 1–7.
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