

## Physics Department Scientific Publications 2023

	Title	Author(s)	Journal	DOI
1	Investigation of the effect of Mo <sup>+2</sup> ion concentration on linear and non-linear optical properties of tungsten trioxide thin films for optoelectronic applications.	Khmissi, H., Mahmoud, S.A., Akl, A.A., Al-Dumiri, A.A., Galal Amin, L.	Optical Materials, 2023, 144, 114279	<a href="https://doi.org/10.1016/j.optmat.2023.114279">https://doi.org/10.1016/j.optmat.2023.114279</a>
2	Numerical study of flexible perovskite/Si tandem solar cell using TCAD simulation	Tarek I. Alanazi, Omer I Eid and Mohamed Okil	Optical and Quantum Electronics 55(13), October 2023	10.1007/s11082-023-05320-8.
3	Kinematical and ellipsoidal properties of K dwarfs in the solar neighborhood of the Gaia era	W. H. Elsanhoury and Amnah S. Al-Johani	Astronomische Nachrichten, Volume 344, Issue 7, article id. E20230047, 2023	10.1002/asna.20230047
4	Simulation of Triple-Cation Perovskite Solar Cells: Key Design Factors for Efficiency Promotion	Tarek I. Alanazi, Omer I. Eid	Energies 16(6):2717, March 2023	10.3390/en16062717
5	Structural, optical and magnetic characteristics of iron doped zinc oxide thin films	A. Z. Mahmoud, E. M. M. Ibrahim, Lamiaa Galal, E. R. Shaaban, E. S. Yousef	Journal of Ovonic Research, Vol. 19, No. 3, May - June 2023, p. 239 - 251	<a href="https://doi.org/10.15251/JOR.2023.193.239">https://doi.org/10.15251/JOR.2023.193.239</a>
6	Investigation of dilute Gd doped ZnO film: structural and morphological properties for various applications	A. Z. Mahmoud, E. M. M. Ibrahim, Lamiaa Galal, and E. R. Shaaban	International Journal of New Horizons in Physics, Int. J. New Hor. Phys. 10, No. 1, 1-9 (2023)	<a href="http://dx.doi.org/10.18576/ijnhp/100101">http://dx.doi.org/10.18576/ijnhp/100101</a>

7	Fractional Order Analysis of the Polytropic Models Applied to Exoplanets	Essam Elkholy, Mohamed I. Nouh	Bulgarian Astronomical Journal 38, 2023	<a href="https://doi.org/10.48550/arXiv.2208.06045">https://doi.org/10.48550/arXiv.2208.06045</a>
8	Quantifying Molecular Disorder in Tri-Isopropyl Silane (TIPS) Pentacene Using Variable Coherence Transmission Electron	F. Alanazi, A. S. Eggeman, K. Stavrou, A. Danos, A. P. Monkman, and B. G. Mendis	<i>J. Phys. Chem. Lett.</i> 2023	<a href="https://doi.org/10.1021/acs.jpcclett.3c01344">https://doi.org/10.1021/acs.jpcclett.3c01344</a>
9	Current spray-coating approaches to manufacture perovskite solar cells	Tarek I. Alanazi	Results in Physics	<a href="https://doi.org/10.1016/j.rinp.2022.106144">https://doi.org/10.1016/j.rinp.2022.106144</a>
10	Absorption of one-dimensional dielectric-metal photonic-crystal absorbers for terahertz range	Tarek I. Alanazi	Ukrainian Journal of Physical Optics	<a href="https://doi.org/10.3116/16091833/24/1/83/2023">10.3116/16091833/24/1/83/2023</a>
11	Design and Device Numerical Analysis of Lead-Free Cs <sub>2</sub> AgBiBr <sub>6</sub> Double Perovskite Solar Cell	Tarek I. Alanazi	Crystals	<a href="https://doi.org/10.3390/cryst13020267">https://doi.org/10.3390/cryst13020267</a>
12	CO <sub>2</sub> hydrogenation for geothermal energy storage through synthetic natural gas production and byproduct of refrigeration and freshwater using solid oxide electrolyzer cell (SOEC) and methanation reactor; Techno-economic evaluation and multi-objective optimization	Peixi Guo a, N. Bharath Kumar b, Yasser Elmasry c d, Abdulaziz Alanazi e, Tarek I. Alanazi f, Ammar Armghan g, A.M. Algelany h i, Makatar Wae-hayee j	Journal of CO <sub>2</sub> Utilization	<a href="https://doi.org/10.1016/j.jcou.2023.102395">https://doi.org/10.1016/j.jcou.2023.102395</a>
13	Design and Optimization of a Self-Protected Thin Film c-Si Solar Cell against Reverse Bias	Omar M. Saif , Abdelhalim Zekry , Ahmed Shaker, Mohammed Abouelatta, Tarek I. Alanazi and Ahmed Saeed	Materials	<a href="https://doi.org/10.3390/ma16062511">https://doi.org/10.3390/ma16062511</a>
14	Proposal and design of flexible all-polymer/CIGS tandem solar	Tarek I Alanazi, Mona El Sabbagh	Polymers	<a href="https://doi.org/10.3390/polym16062511">https://doi.org/10.3390/polym16062511</a>

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15	TCAD Device Simulation of All-Polymer Solar Cells for Indoor Applications: Potential for Tandem vs. Single Junction Cells	Tarek I Alanazi	Polymers	<a href="https://doi.org/10.3390/polym15092217">https://doi.org/10.3390/polym15092217</a>
16	Multi-criteria sensitivity study and optimization of an electricity/cooling/hydrogen production scheme combined with SOFC-based sequential heat recovery: Sustainability and economic analyses	Jie Dai, Abdulkareem Abdulwahab, Haoran Wei, Abdulaziz Alanazi, Mohana Alanazi, Tarek I Alanazi, Ammar Armghan, Makatar Wae-hayee	Process Safety and Environmental Protection	<a href="https://doi.org/10.1016/j.psep.2023.03.083">https://doi.org/10.1016/j.psep.2023.03.083</a>
17	Multi-objective framework for optimal placement of distributed generations and switches in reconfigurable distribution networks: an improved particle swarm optimization approach	Abdulaziz Alanazi, Tarek I Alanazi	Sustainability	<a href="https://doi.org/10.3390/su15119034">https://doi.org/10.3390/su15119034</a>
18	Proposal and Numerical Analysis of Organic/Sb <sub>2</sub> Se <sub>3</sub> All-Thin-Film Tandem Solar Cell	Tarek I Alanazi, Abdulaziz Alanazi, Ezzeddine Touti, Ahmed M Agwa, Habib Kraiem, Mohana Alanazi, Abdulrahman M Alanazi, Mona El Sabbagh	Polymers	<a href="https://doi.org/10.3390/polym15112578">https://doi.org/10.3390/polym15112578</a>
19	Characterization of Mg–Pb–O systems, and MgPbO–thermoplastic blend: Nanocomposites for photonic and microelectronic devices	Tarek I Alanazi, Adel M El Sayed	Journal of Physics and Chemistry of Solids	<a href="https://doi.org/10.1016/j.jpics.2023.111346">https://doi.org/10.1016/j.jpics.2023.111346</a>
20	Parameters identification of photovoltaic cell and module models using modified social group optimization algorithm	Habib Kraiem, Ezzeddine Touti, Abdulaziz Alanazi, Ahmed M Agwa, Tarek I	Sustainability	<a href="https://doi.org/10.3390/su151310510">https://doi.org/10.3390/su151310510</a>

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21	M3+/NaTiO3/PVA–chitosan nanocomposites (M= Ga, Ce, Nd or Er): novel solid polymer electrolytes for supercapacitors	Tarek I Alanazi, Adel M El Sayed	Physica Scripta	<a href="https://doi.org/10.1088/1402-4896/ace85d">10.1088/1402-4896/ace85d</a>
22	Concurrent Design of Alloy Compositions of CZTSSe and CdZnS Using SCAPS Simulation: Potential Routes to Overcoming $V_{OC}$ Deficit	Walid Zein, Tarek I Alanazi, Mostafa M Salah, Ahmed Saeed	Energies	<a href="https://doi.org/10.3390/en16155754">https://doi.org/10.3390/en16155754</a>
23	MPPT of PEM Fuel Cell Using PI-PD Controller Based on Golden Jackal Optimization Algorithm	Ahmed M Agwa, Tarek I Alanazi, Habib Kraiem, Ezzeddine Touti, Abdulaziz Alanazi, Dhari K Alanazi	Biomimetics	<a href="https://doi.org/10.3390/biomimetics8050426">https://doi.org/10.3390/biomimetics8050426</a>
24	Computing polytropic and isothermal models using monte carlo method	Mohamed I. Nouh, Essam A. Elkholy, Samah. H. El-Essawy	REVISTA MEXICANA DE ASTRONOMÍA Y ASTROFÍSICA	<a href="https://www.astroscu.unam.mx/RMxAA/accepted.html">https://www.astroscu.unam.mx/RMxAA/accepted.html</a>
25	N-doped carbon as a highly active and sustainable metal-free catalyst for the enhanced degradation of non-steroidal anti-inflammatory drugs in single and binary systems	M. S. Netto, Y. Vieira, S. Knani, M. L. S. Oliveira, L. F. O. Silva, T. H. Ribeiro, A. H. P. de Oliveira, D. L. Rossatto, J. Leichtweis, E. S. Mallmann, S. L. Jahn, E. L. Foletto, G. L. Dotto	Microporous and Mesoporous Materials	<a href="https://doi.org/10.1016/j.micromeso.2023.112807">https://doi.org/10.1016/j.micromeso.2023.112807</a>
26	Adsorption of antibiotics by bentonite-chitosan composite: Phenomenological modeling and physical investigation of the adsorption process	N. Bouaziz, O. Kouira, F. Aouaini, L. Bukhari, S. Knani, S. Znaidia, A. Ben Lamine	International Journal of Biological Macromolecules	<a href="https://doi.org/10.1016/j.ijbiomac.2023.125156">https://doi.org/10.1016/j.ijbiomac.2023.125156</a>
27	Ozone-treated activated alumina as an alternative adsorbent to remove fluoride from water :	N. Paula, M. Maraschin, S. Knani, J. T.	Journal of Environmental Chemical Engineering	<a href="https://doi.org/10.1016/j.jece.2023.111403">https://doi.org/10.1016/j.jece.2023.111403</a>

	Conventional and Bayesian approaches to evaluate the isotherms, kinetics, and thermodynamics	Oliveira, C. B. Agustini, L. A. Féris, L. E. Claussen, D. M. Souza, M. L. S. Oliveira, L. F. O. Silva, G. L. Dotto, S. L. Jahn, E. Carissimi		
28	Study of Gamma-ray shielding of two different heavy metals and their combination for Cs-137 and Co-60 sources	Mohamed E. M. Eisa, M. D. M. Ali, Mustafa J. Abuualreish	Engineering, Technology & Applied Science Research	<a href="https://doi.org/10.48084/etasr.5513">https://doi.org/10.48084/etasr.5513</a>
29	Investigation of trace elements in incisor and molar teeth from two different geographical areas using micro-particle induced x-ray emission ( $\mu$ -PIXE)	M.E.M.Eisa J.A. Mars, S.Naidoo, R. A. Shibrain, K.J. Cloete, M. Maaza	Analytical Science and Technology	<a href="https://doi.org/10.5806/AST.2023.36.2.9">https://doi.org/10.5806/AST.2023.36.2.9</a>
30	Investigation of the adsorption mechanism of two nitro musk odorants on OR1A1:Advanced modeling and thermodynamic study	Ismahene Ben Khemis a, Fatma Aouaini b, Lamies Bukhari b, <b>Amani Alruwaili</b> c, Sami Znaidia d, Abdelmottaleb Ben Lamine a	Journal of Molecular Liquids	<a href="http://dx.doi.org/http://doi.org/10.1016/j.molliq.2023.123017">http://dx.doi.org/http://doi.org/10.1016/j.molliq.2023.123017</a>
31	Deep insights into the Cu- and W-doped Na <sub>0.5</sub> Bi <sub>0.5</sub> TiO <sub>3</sub> solid solution: A study focusing on optical, dielectric and electrical properties	Najah Rhimi, N. Dhahri, J. Laifi, F. Bourguiba, N. Abdelmoula, J. Dhahri, C. Castro, J. Juraszek	Journal of Molecular Structure	<a href="https://doi.org/10.1016/j.molstruc.2023.136319">https://doi.org/10.1016/j.molstruc.2023.136319</a>