

CURRICULUM VITAE

Name: Dr. Tarek Ibrahim Alanazi

Affiliation: Department of Physics, College of Science, Northern Border University, Arar 73222, Saudi Arabia

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Languages: Arabic and English.



EDUCATION

- **Doctor of Philosophy** | October 2017-September 2021 | The University of Sheffield | Sheffield, United Kingdom | Solid State Physics (Solar Energy).
- **Master of Science** | January 2015-December 2016 | The University of Akron | Akron, Ohio, United States | Physics.
- **Bachelor of Science** | August 2007-July 2011 | Northern Border University | Arar, Saudi Arabia | Physics.

ACADEMIC POSITIONS

- **Assistant Professor**, Northern Border University, September 2022– Present.
- **Lecturer**, Northern Border University, May 2019 – September 2022.
- **Teaching Assistant**, Northern Border University, August 2012 – May 2019.

EXPERIENCE

1. Teaching

- Teaching Several Courses in Basic and Advanced Physics for Bachelor's and Master's Degrees (General Physics 1, General Physics 3, Mathematical Physics, Solid State Physics, Graduation Project and Experimental Techniques).

2. Research

- Published more than Thirty-Five Papers on Web of Science Journals.

3. Academic and Administrative Leadership

- Vice Dean of the Development and Community Partnership (August 2023 – Present).
- Head of Physics Department (July 2023 – November 2023).
- Secretary of the College of Science Council (August 2024 – Present).
- Director of the Program Accreditation Unit (September 2022 – August 2023).
- Program's Accreditation Consultant (February 2023 – January 2024).

4. Committees and Councils

- Member of the College of Science Council (July 2023 – Present).
- Member of the Department of Physics Council (July 2022 – Present).
- Head of the Department of Physics Council (July 2023 – November 2023).
- Head of the Development and Quality Unit (May 2024 – Present).
- Head of the Academic Systems and Plans Committee (November 2024 – Present).
- Member of the Faculty Members Committee (September 2022 – Present).
- Member of the Advisory Committee in the College of Science (November 2023 – Present).
- Member of the Student Code of Conduct and Discipline Committee (February 2022 – August 2024).
- Member of the Standing Committee of Evaluators at the University (September 2022 – Present).
- Member of the Standing Committee for Academic Systems and Plans at the University (October 2024 – Present).
- Member of the Standing Committee of the Intellectual Property and Patent Office (November 2024 – Present).

5. Program and Curriculum Development

- Head of the Committee for Creating an Applied Geology Program (October 2022 – September 2023).
- Head of the Quality Committee (July 2023 – August 2024).
- Member of the College of Science Alumni Committee (March 2023 – September 2023).

6. Editorial and Research Roles

- Member and Secretary of University Council of Scientific Research and Entrepreneurship Center (February 2024 – January 2025).
- Member of the Editorial Board of the North Journal of Basic and Applied Sciences (December 2024 – Present).

7. Event and Conference Organization

- Member of University Career Day Preparation Committee 2025 (January 2025 – May 2025).
- Member of the Mining Conference Preparatory Committee (January 2025 – May 2025).

- Member of the Supervising Committee for the Implementation of the Scientific Forum Initiative for University Students 2024 (February 2024 – May 2024).
- Member of the Scientific Committee of the Scientific Forum for University Students 2024 (April 2024 – May 2024).

PROFESSIONAL ACTIVITIES

- **Reviewer:** Ain Shams Engineering Journal, Alexandria Engineering Journal, RSC advances, Journal of computer assisted learning, Cognitive Robotics, Discover Electronics, and Scientific Reports.
- Academic quality practitioner.
- One of the highest published researchers at Northern Border University in journals classified within the Web of Science (WoS) for 2023 and 2024.

PUBLICATIONS

1. Freestone, Benjamin G., Joel A. Smith, Giacomo Piana, Rachel C. Kilbride, Andrew J. Parnell, Luca Sortino, David M. Coles, Ball OB, Martsinovich N, Thompson CJ, **Tarek I. Alanazi**. "Low-dimensional emissive states in non-stoichiometric methylammonium lead halide perovskites." *Journal of Materials Chemistry A* 7, no. 18 (2019): 11104-11116.
2. Dharmadasa, I. M., Y. Rahaq, A. A. Ojo, and **Tarek I. Alanazi**. "Perovskite solar cells: a deep analysis using current–voltage and capacitance–voltage techniques." *Journal of materials science: Materials in electronics* 30 (2019): 1227-1235.
3. Game, Onkar S., Joel A. Smith, **Tarek I. Alanazi**, Michael Wong-Stringer, Vikas Kumar, Cornelia Rodenburg, Nick J. Terrill, and David G. Lidzey. "Solvent vapour annealing of methylammonium lead halide perovskite: what's the catch?." *Journal of Materials Chemistry A* 8, no. 21 (2020): 10943-10956.
4. **Tarek I. Alanazi**, Onkar S. Game, Joel A. Smith, Rachel C. Kilbride, Claire Greenland, Rahul Jayaprakash, Kyriacos Georgiou, Nicholas J. Terrill, and David G. Lidzey. "Potassium iodide reduces the stability of triple-cation perovskite solar cells." *RSC advances* 10, no. 66 (2020): 40341-40350.
5. Smith, Joel A., Onkar S. Game, James E. Bishop, Emma LK Spooner, Rachel C. Kilbride, Claire Greenland, Rahul Jayaprakash, **Tarek I. Alanazi**. "Rapid scalable processing of tin oxide transport layers for perovskite solar cells." *ACS Applied Energy Materials* 3, no. 6 (2020): 5552-5562.
6. Pérez, Gabriel E., Harikrishna Erothu, Paul D. Topham, Francesco Bastianini, **Tarek I. Alanazi**, Gabriel Bernardo, Andrew J. Parnell, Stephen M. King, and Alan DF Dunbar. "Improved Performance and Stability of Organic Solar Cells by the Incorporation of a Block Copolymer Interfacial Layer." *Advanced Materials Interfaces* 7, no. 18 (2020): 2000918.

7. O'Kane, Mary E., Joel A. Smith, **Tarek I. Alanazi**, Elena J. Cassella, Onkar Game, Sandra van Meurs, and David G. Lidzey. "Perovskites on Ice: An Additive-Free Approach to Increase the Shelf-Life of Triple-Cation Perovskite Precursor Solutions." *ChemSusChem* 14, no. 12 (2021): 2537-2546.
8. Thornber, Timothy, Onkar S. Game, Elena J. Cassella, Mary E. O'Kane, James E. Bishop, Thomas J. Routledge, **Tarek I. Alanazi** et al. "Nonplanar spray-coated perovskite solar cells." *ACS Applied Materials & Interfaces* 14, no. 33 (2022): 37587-37594.
9. **Tarek I. Alanazi**. "Current spray-coating approaches to manufacture perovskite solar cells." *Results in Physics* (2022): 106144.
10. Hesarian, Mir Saeid, Jafar Tavoosi, and **Tarek I. Alanazi**. "Model development of a hybrid battery–piezoelectric fiber system based on a new control method." *Polymers* 14, no. 24 (2022): 5428.
11. **Tarek I. Alanazi**. "Absorption of one-dimensional dielectric–metal photonic-crystal absorbers for terahertz range." *Ukrainian Journal of Physical Optics* 24, no. 1 (2023): 83-94.
12. **Tarek I. Alanazi**. "Design and Device Numerical Analysis of Lead-Free Cs₂AgBiBr₆ Double Perovskite Solar Cell." *Crystals* 13, no. 2 (2023): 267.
13. Guo, Peixi, N. Bharath Kumar, Yasser Elmasry, Abdulaziz Alanazi, **Tarek I. Alanazi**, Ammar Armghan, A. M. Algelany, and Makatar Wae-hayee. "CO₂ 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." *Journal of CO₂ Utilization* 69 (2023): 102395.
14. **Tarek I. Alanazi**, and Omer I. Eid. "Simulation of Triple-Cation Perovskite Solar Cells: Key Design Factors for Efficiency Promotion." *Energies* 16, no. 6 (2023): 2717.
15. Saif, Omar M., Abdelhalim Zekry, Ahmed Shaker, Mohammed Abouelatta, **Tarek I. Alanazi**, and Ahmed Saeed. "Design and Optimization of a Self-Protected Thin Film c-Si Solar Cell against Reverse Bias." *Materials* 16, no. 6 (2023): 2511.
16. **Tarek I. Alanazi**, and Mona El Sabbagh. "Proposal and Design of Flexible All-Polymer/CIGS Tandem Solar Cell." *Polymers* 15, no. 8 (2023): 1823.
17. **Tarek I. Alanazi**. "TCAD Device Simulation of All-Polymer Solar Cells for Indoor Applications: Potential for Tandem vs. Single Junction Cells." *Polymers* 15, no. 9 (2023): 2217.
18. Dai, Jie, Abdulkareem Abdulwahab, Haoran Wei, Abdulaziz Alanazi, Mohana Alanazi, **Tarek I. Alanazi**, Ammar Armghan, and Makatar Wae-hayee. "Multi-criteria sensitivity study and optimization of an electricity/cooling/hydrogen production scheme combined with SOFC-based sequential heat recovery: Sustainability and economic analyses." *Process Safety and Environmental Protection* 174 (2023): 169-187.
19. Alanazi, Abdulaziz, and **Tarek I. Alanazi**. "Multi-Objective Framework for Optimal Placement of Distributed Generations and Switches in Reconfigurable Distribution Networks: An Improved Particle Swarm Optimization Approach." *Sustainability* 15, no. 11 (2023): 9034.
20. **Tarek I. Alanazi**, Abdulaziz Alanazi, Ezzeddine Touti, Ahmed M. Agwa, Habib Kraiem, Mohana Alanazi, Abdulrahman M. Alanazi, and Mona El Sabbagh. "Proposal and Numerical Analysis of Organic/Sb₂Se₃ All-Thin-Film Tandem Solar Cell." *Polymers* 15, no. 11 (2023): 2578.
21. **Tarek I. Alanazi**, and Adel M. El Sayed. "Characterization of Mg–Pb–O systems, and MgPbO–thermoplastic blend: Nanocomposites for photonic and microelectronic devices." *Journal of Physics and Chemistry of Solids* 178 (2023): 111346.

22. Kraiem, Habib, Ezzeddine Touti, Abdulaziz Alanazi, Ahmed M. Agwa, **Tarek I. Alanazi**, Mohamed Jamli, and Lassaad Sbita. "Parameters Identification of Photovoltaic Cell and Module Models Using Modified Social Group Optimization Algorithm." *Sustainability* 15, no. 13 (2023): 10510.
23. **Tarek I. Alanazi**, and Adel M. El Sayed. "M³⁺/NaTiO₃/PVA–chitosan nanocomposites (M= Ga, Ce, Nd or Er): novel solid polymer electrolytes for supercapacitors." *Physica Scripta* 98, no. 8 (2023): 085946.
24. Zein, Walid, **Tarek I. Alanazi**, Mostafa M. Salah, and Ahmed Saeed. "Concurrent Design of Alloy Compositions of CZTSSe and CdZnS Using SCAPS Simulation: Potential Routes to Overcoming VOC Deficit." *Energies* 16, no. 15 (2023): 5754.
25. Agwa, Ahmed M., **Tarek I. Alanazi**, Habib Kraiem, Ezzeddine Touti, Abdulaziz Alanazi, and Dhari K. Alanazi. "MPPT of PEM Fuel Cell Using PI-PD Controller Based on Golden Jackal Optimization Algorithm." *Biomimetics* 8, no. 5 (2023): 426.
26. **Tarek I. Alanazi**, Omer I. Eid, and Mohamed Okil. "Numerical study of flexible perovskite/Si tandem solar cell using TCAD simulation." *Optical and Quantum Electronics* 55, no. 13 (2023): 1-19.
27. El Sayed, Adel M., and **Tarek I. Alanazi**. "Improving the structural, optical, and electrical properties of carboxymethyl cellulose/starch/selenium oxide nanocomposites for flexible electronic devices." *Scientific Reports* 14, no. 1 (2024): 3398.
28. Zein, Walid, **Tarek I. Alanazi**, Ahmed Saeed, Mostafa M. Salah, and Mohamed Mousa. "Proposal and Design of Organic/CIGS Tandem Solar Cell: Unveiling Optoelectronic Approaches for Enhanced Photovoltaic Performance." *Optik* (2024): 171719.
29. **Tarek I. Alanazi**, Walid Zein, Karim Azab, Ahmed Shaker, Mostafa M. Salah, and Dalia Selim. "Investigation of HTL-free perovskite solar cell under LED illumination: interplay between energy bandgap and absorber optimization." *Physica Scripta* 99, no. 5 (2024): 055542.
30. Osman, M. M., Anwar Q. Alanazi, **Tarek I. Alanazi**, Masfer H. Alkahtani, A. M. El-naggar, A. A. Albassam, A. M. Aldhafiri et al. "Enhanced performance of perovskite solar cell via up-conversion YLiF₄: Yb, Er nanoparticles." *Solar Energy Materials and Solar Cells* 273 (2024): 112955.
31. **Tarek I. Alanazi**, Ahmed Shaker, Michael Gad, and Mohamed Okil. "Optimization of all-polymer/Sb₂Se₃ tandem solar cells for enhanced efficiency: a comprehensive TCAD modeling approach." *Physica Scripta* 99, no. 6 (2024): 065516.
32. Touti, Ezzeddine, Mohamed Abdeen, Mahmoud A. El-Dabah, Habib Kraiem, Ahmed Agwa, Abdulaziz Alanazi, and **Tarek I. Alanazi**. "Sub-Synchronous Oscillation Mitigation for Series-Compensated DFIG-Based Wind Farm Using Resonant Controller." *IEEE Access* (2024).
33. **Tarek I. Alanazi**, Raghad A. Alenazi, and Adel M. El Sayed. "Tuning the band gap, optical, mechanical, and electrical features of a bio-blend by Cr₂O₃/V₂O₅ nanofillers for optoelectronics and energy applications." *Scientific Reports* 14, no. 1 (2024): 12537.
34. **Tarek I. Alanazi**, and Adel M. El Sayed. "Reinforcing the structure, optical, and dielectric spectroscopies of poly (ethylene oxide)/poly (methyl methacrylate) thermoplastics by CoFe nanoparticles for optoelectronic device fabrication." *Optical and Quantum Electronics* 56, no. 7 (2024): 1224.
35. Alanazi, Abdulaziz, Shayan Tariq Jan, Zeeshan Khan, and **Tarek I. Alanazi**. "Analyzing the hetero-junction compatibility of Al₂CdX₄ chalcogenides as charge transport layers with lead-free perovskite layer." *Optical and Quantum Electronics* 56, no. 8 (2024): 1390.

36. **Tarek I. Alanazi**, Ahmed Shaker, and Walid Zein. "Design and simulation of 2D Ruddlesden–Popper perovskite solar cells under LED illumination: Role of ETL and front contact band alignment." *Solar Energy Materials and Solar Cells* 274 (2024): 112992.
37. **Tarek I. Alanazi**, Ahmed Shaker, Dalia Selim, Mohamed Okil. "Advancements in eco-friendly lead-free perovskite/Sb₂Se₃ tandem solar cells: TCAD simulations" *Ain Shams Engineering Journal* 16 (2025): 103202.
38. **Tarek I. Alanazi**. "Boosting the structural, electrical properties, and optical features of porous starch/poly(ethylene oxide) reinforced with NiMoO₄ nanocrystals" *Journal of Materials Science: Materials in Electronics* 36 (2025): 16.
39. **Tarek I Alanazi**, Ahmed Shaker, Dalia Selim. "Performance analysis of hydrogenated Cs₂AgBiBr₆ perovskite solar cells under white LED illumination" *Journal of Alloys and Compounds* 1010 (2025): 177354.