



## FACULTY FULL NAME: Tahani Hassan Flemban

POSITION: Assistant Professor

### Personal Data

Nationality | Saudi

Department |Physics

Official IAU Email | tfelemban@iau.edu.sa

Office Phone No.

### Objective

I believe that obtaining PhD from king Abdullah University of science & Technology was an outstanding opportunity to improve my experience and knowledge which will enable me to contribute to the development of research and educational system in the Kingdom.

### Language Proficiency

Language	Read	Write	Speak
Arabic	Excellent	Excellent	native
English	Proficient	Proficient	Proficient
Others	-	-	-

### Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2017	PhD in Materials Science and Engineering	King Abdullah University of Science & Technology (KAUST)	Thuwal, KSA
2008	MSc. in Theoretical Physics (Solid State)	King Faisal University	Dammam, KSA
1997	BSc. in Physics and diploma degree in education	Umm AL-Qura University	Makkah AL-Mokarama, KSA

### PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions)

<b>PhD</b>	<p>“High Quality Zinc Oxide Thin films and Nanostructures Prepared by Pulsed Laser Deposition for Photodetectors” King Abdullah University of Science and Technology. Semiconductor and Material Spectroscopy Group,</p>
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<b>Master</b>	<p><i>“Theoretical of Heat Transfer during Phase Change of Some Vapours on Ion Implanted Surfaces”.</i> King Faisal University. Theoretical physics (Solid State)</p>
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**Professional Record: (Beginning with the most recent)**

<b>Job Rank</b>	<b>Place and Address of Work</b>			<b>Date</b>
Assistant Professor	KSA	Imam Abdulrahman bin Faisal University-Girl College of science-Department of Physics	Dammam-KSA	Feb 2018-Present
Internship	UK	Imperial college	London-UK	2012 June-Aug
PhD Student	KSA	King Abdullah University of Science & Technology-Materials Science & Engineering Department	Thuwal-KSA	2011-2017
Teaching Assistant (Lecturer)	KSA	University of Dammam-Girl College of Sciences-Department of Physics	Dammam-KSA	2008-2018
Teaching Assistant (Demonstrator)	KSA	University of Dammam-Girl College of Sciences-Department of Physics	Dammam-KSA	2004-2008
Teaching Assistant (Demonstrator)	KSA	Umm AL-Qura University	Makkah-KSA	2000-2004
High School Teacher	KSA	Education Ministry-11 <sup>th</sup> High School	Taif-KSA	1998-2000

**Administrative Positions Held: (Beginning with the most recent)**

<b>Administrative Position</b>	<b>Office</b>	<b>Date</b>
Director of Patent and Technology Transfer Office		2021-present
Vice Director of Basic & Applied Scientific Research Center for Technical Affairs		2018-September 2021
Head of Higher Studies for Physics Department		2018
Head of E-learning for Physics Department		2018



## Scientific Achievements

### Published Refereed Scientific Researches

(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1.	Roqan, I., and <b><u>T. H. Flemban</u></b>	Synthesis of vertically aligned metal oxide nanostructures	Patent, international publication number <b>US11208333B2-WO2016030746A1</b>
2.	MHA Mhareb, MI Sayyed, <b><u>Tahani Flemban</u></b> , Nidal Dwaikat, MGB Ashiq, YSM Alajerami	Experimental shielding properties for a novel glassy system	Applied Radiation and Isotopes, <b>8-2022</b> , 110408
3.	Ridha Hamdi, Salwa Alqarni, <b><u>Tahani Flemban</u></b> , Taoufik Soltani	Nematic liquid crystals' behavior under continuous current	Journal of Molecular Liquids, <b>8-2022</b> , 360, 119543
4.			
5.	Taher Ghrib, Filiz Ercan, TS Kayed, <b><u>Tahani H Flemban</u></b> , Mesut Yıldız, Omer Kaygili, İsmail Ercan	Structural, Optical, Dielectric and Magnetic Properties of Double Perovskite Oxides A <sub>2</sub> FeTiO <sub>6</sub> (A= Zn, Mg, Cu) Nanopowders	Arabian Journal for Science and Engineering, <b>6-2022</b> , 47 (6), 7609-7620
6.	Taher Ghrib, <b><u>Tahani H Flemban</u></b> , Thamraa Alshahrani, S Bouzgarrou, Filiz Ercan, Abeer Mera, HH Somaily, Q Mahmood	First-principles study of ferromagnetic, optical, and transport properties of double Perovskites Z <sub>2</sub> FeTiO <sub>6</sub> (Z= Mg, Zn)	Physica Scripta, <b>2022</b> , 97 (4), 045807
7.	<b><u>Tahani Flemban</u></b> , Ridha Hamdi, Hassan Alkhabbaz, Muidh Alheshibri, Sultan Akhtar, Nouredine Ouerfelli, Khaled Elsayed	Physicochemical Properties of Nanofluids Produced from Oxidized Nanoparticles Synthesized in a Liquid by Pulsed Laser Ablation	Lasers in Manufacturing and Materials Processing, <b>3-2022</b> , 9 (1), 18-36
8.	<b><u>Tahani H Flemban</u></b> , Taharh Zelai, Q Mahmood, Assa Aravindh Sasikala Devi, M Sajjad, MH Alhossainy, HH Somaily, Abeer Mera, Sarah Alharthi, Mohammed A Amin	Half-metallic ferromagnetism and thermoelectric properties of double perovskites Rb <sub>2</sub> Z (Cl/Br) 6 (Z= Ta, W, Re)	Journal of Alloys and Compounds, <b>2-2022</b> , 894, 162313
9.	<b><u>Tahani H Flemban</u></b> , Hind Althib, S Bouzgarrou, Syed Awais Rouf, MH Alhossainy, AI Aljameel, Abeer Mera, MGB Ashiq, Q Mahmood	First principle analysis of lead-free variant perovskites iodides for optical and thermoelectric applications	Journal of Materials Research and Technology, <b>11-2021</b> , 15, 5165-5174
10.	Abdul Ahad Khan, Ali H Reshak, Zubaida Noor, Ghulam Murtaza, Murefah Mana Al-Anazy, Hind Althib, <b><u>Tahani H Flemban</u></b> , Amel Laref, AM Mustafa Al Bakri, Jiri Bila	First-principles calculations of structural, electronic, optical, and thermoelectric properties of ternary d-metal sulfides Sc <sub>2</sub> CdS <sub>4</sub> and Y <sub>2</sub> CdS <sub>4</sub> compounds	International Journal of Energy Research 45 (9), <b>7-2021</b> , 13657-13667



11.	M Saeed, Z Noor, A Laref, H Althib, <b>TH Flemban</b> , G Murtaza	Insights into the structural, electronic and optical properties of MgA <sub>2</sub> B <sub>4</sub> (A= Sc, Y; B= S, Se) spinel compounds: Direct energy band gap materials	Materials Science in Semiconductor Processing, <b>6-2021</b> , 127, 105736
12.	Q Mahmood, MH Alhossainy, MS Rashid, <b>TH Flemban</b> , H Althib, ...	First-principles study of lead-free double perovskites Rb <sub>2</sub> TeX <sub>6</sub> (X= Cl, Br, and I) for solar cells and renewable energy	Materials Science and Engineering: B, <b>4-2021</b> , 266, 115064
13.	M Saeed, Z Noor, R Ali, A Laref, HM Althib, <b>TH Flemban</b> , G Murtaza	Prediction of novel X <sub>2</sub> ZnZ <sub>4</sub> (X = Sc, Y; Z = S, Se) spinels materials for renewable energy applications	International Journal of Energy Research, 5-2021, 45 (6), 8307-8315
14.	A Shahzad, AAH Ahmadini, Q Mahmood, <b>TH Flemban</b> , G ... ,Murtaza	Study of Optoelectronic and Thermoelectric Characteristics of Cesium Based Halides CsYbX <sub>3</sub> (X= Br, Cl) for Clean Energy Harvesting	ECS Journal of Solid State Science and Technology, <b>2021</b> , 10 (1), 015002
15.	Q Mahmood, M Hassan, <b>TH Flemban</b> , BU Haq, S AlFaify, .. ,NA Kattan	Optoelectronic and thermoelectric properties of double perovskite Rb <sub>2</sub> PtX <sub>6</sub> (X= Cl, Br) for energy harvesting: First-principles investigations	Journal of Physics and Chemistry of Solids, <b>1-2021</b> , 148, 109665
16.	HA Abubshait, T Alshahrani, HH Alhashim, <b>TH Flemban</b> , G ... ,Ali	Dual coating strategy of CoS <sub>2</sub> @Co@C toward fast insertion/extraction anode material for sodium-ion batteries	International Journal of Energy Research, 45 (4), 5283-5292, <b>3-2021</b> .
17.	Q Mahmood, <b>TH Flemban</b> , H Althib, T Alshahrani, MGB ... ,Ashiq, BU Haq	The study of optical and thermoelectric properties of lead-free variant iodes (K/Rb) 2TiI <sub>6</sub> ; Renewable energy	Journal of Materials Research and Technology, <b>11-2020</b> , 9 (6), 13043-13053
18.			
19.	Q Mahmood, M Hassan, <b>Tahani H Flemban</b> , Bakhtiar UI Haq, S AlFaify, Nessrin A Kattan, A Laref	Optoelectronic and thermoelectric properties of double perovskite Rb <sub>2</sub> PtX <sub>6</sub> (X= Cl, Br) for energy harvesting: First-principles investigations	Journal of Physics and Chemistry of Solids, <b>2020</b> , 148, 109665
20.	Thamraa Alshahrani, Ghulam M Mustafa, <b>Tahani H Flemban</b> , Hind Althib, Samah Al-Qaisi, Nessrin A Kattan, Q Mahmood	Probing of Optoelectronic and Transport Properties of Zinc Based ZnY <sub>2</sub> X <sub>4</sub> (X= S, Se) Spinel for Renewable Energy	ECS Journal of Solid State Science and Technology, <b>10-2020</b> , 9, 10, 105001
21.	Dhaifallah Almalawi, Sergei Lopatin, Somak Mitra, <b>Tahani Flemban</b> , Alexandra-Madalina Siladie, Bruno Gayral, Bruno Daudin, Iman S Roqan	Enhanced UV Emission of GaN Nanowires Functionalized by Wider Band Gap Solution-Processed p-MnO Quantum Dots	ACS applied materials & interfaces <b>2020</b> , 12, 30, 34058-34064
22.	Norah Alwadai, Idris A. Ajia, Bilal Janjua, <b>Tahani H. Flemban</b> , Somak Mitra, Nimer Wehbe, Nini Wei, Sergei Lopatin, Boon S. Ooi, and Iman S. Roqan	Catalyst-Free Vertical ZnO-Nanotube Array Grown on p-GaN for UVLight-Emitting Devices	ACS Appl. Mater. : Interfaces <b>2019</b> , 11, 27989–27996
23.	<b>Tahani Flemban</b> , Md Azimul Haque, Idris Ajia, Norah Alwadai, Somak	A Photodetector Based on p-Si/n-ZnO Nanotube Heterojunctions with High Ultraviolet Responsivity	ACS Applied Materials & Interfaces <b>2017</b> , 9 (42), 37120–37127.



	Mitra, Tom Wu, and Iman Roqan.		
24.	Norah Alwadai, Md Azimul Haque, Somak Mitra, <b><u>Tahani Flemban</u></b> , Yusin Pak, Tom Wu, and Iman Roqan	High-Performance Ultraviolet-to-Infrared Broadband Perovskite Photodetectors Achieved via Inter-intra-Band Transitions	ACS Applied Materials & Interfaces <b>2017</b> , 9 (43), 37832–37838.
25.	<b><u>TH Flemban</u></b> , MC Sequeira, Z Zhang, S Venkatesh, E Alves, K Lorenz, IS Roqan	Identifying the influence of the intrinsic defects in Gd-doped ZnO thin-films	Journal of applied physics <b>2016</b> , 119(6), 065301.
26.	<b><u>Tahani H Flemban</u></b> , Venkatesh Singaravelu, Assa Aravindh Sasikala Devi, Iman S Roqan	Homogeneous Vertical ZnO Nanorod Arrays with High Conductivity on an in situ Gd Nanolayer	RSC advances <b>2015</b> , 115 (5), 94670-94678.
27.	Roqan, IS; Venkatesh, S; Zhang, Z; Hussain, S; Bantounas, I; Franklin, JB; <b><u>Flemban, TH</u></b> ; Zou, B; Lee, JS; Schwingenschlogl, U, Petrov, PK; Ryan, MP; Alford, NM	Obtaining Strong Ferromagnetism in Diluted Gd-doped ZnO Thin Films through Controlled Gd-Defect Complexes	Journal of applied physics <b>2015</b> , 117, (7), 073904.
28.	M.K.EL-Adawi and <b><u>T.H.Feemben</u></b>	Dropsize Function during Dropwise Condensation in Relation to Heat Transfer Intensification-statistical Approach	Desalination and Water Treatment <b>2010</b> , 24, 244-250.
29.	M. K. El-Adawi, <b><u>T. H. Feemben</u></b>	Dropwise Condensation on a Rotating Condenser in Relation to Heat Transfer Intensification	Journal of Environmental Science and Engineering <b>2010</b> , 6(4), 31.

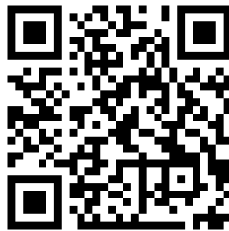
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### Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date
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### Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research grand	Report Date
1	<b>FLEMBAN, TAHANI</b> Althib, Hind Ashiq, M Gul BAHAR Ghulam Mustafa, Qasim	IFD-2020-132-BASRC	<b>Expected start date:</b> 20/08/2020 <b>Expected end date:</b> 20/08/2021
2	Ghulam Mustafa, Qasim Ashiq, M Gul BAHAR <b>FLEMBAN, TAHANI</b> Ghrib, Taher	DSR- 2020-131-BASRC	<b>Expected start date:</b> 15/08/2020 <b>Expected end date:</b> 15/08/2021
3	Ercan, Filiz, Alotiaibi, Amal <b>FLEMBAN, TAHANI</b> Ghrib, Taher Kayed, Tarek	DSR- 2020-135-BASRC	<b>Expected start date:</b> 01/04/2020 <b>Expected end date:</b> 31/03/2021
4	Ghrib, Taher, Alonizan, Norah Alotiaibi, Amal, Elsayed, Khaled <b>FLEMBAN, TAHANI</b> Ghulam Mustafa, Qasim	DSR- 2020-056-BASRC	<b>Expected start date:</b> 01/08/2020 <b>Expected end date:</b> 31/07/2022
5	Iman S Roqan, <b>Tahani H Flemban,</b> Venkatesh Singaravelu etc. al	King Abdulaziz City of Science & Technology number (405-30-أت)	1/8/1436 to 1/8/1437

### Current Researches

#	Research Title	Name of Investigator(s)
1	High-Efficiency ZnO nanoparticles synthesized by pulsed laser for optoelectronics devices	<b><u>Tahani H. Flemban,</u></b>
2	Exploration of new efficient solar cell materials as an alternative for unstable hybrid organic-inorganic perovskites	<b><u>Tahani H. Flemban,</u></b>



### Contribution in international scientific conferences

#	Name of conference	Place & date	Contribution field
1	MIDDLE EAST INTERNATIONAL CONFERENCE ON CONTEMPORARY SCIENTIFIC STUDIES-V	March 27-28, 2021 / Ankara, Turkey	<b>Oral presentation</b> "CURRENT CONSTANT INDUCED FREÉDERICKSZ TRANSITION IN NEMATIC LIQUID CRYSTALS"
2	European Materials Research Society (EMRS).	May 2017, Strasbourg , France.	<b>Oral presentation</b> "High performance UV photodetector based on ZnO nanotubes grown on p-Si substrate"
3	Materials research society (MRS).	Fall 2016, Boston, US.	<b>Poster</b> "Optical and electrical properties of Gd doped ZnO nanostructures grown on aluminum foil for inexpensive large-scale flexible devices"
4	17th International Conference on II-VI Compounds and Related Materials.	Sep 2015, Paris, France.	<b>Poster</b> "High quality ZnO nanotube on conductive substrate by pulsed laser deposition"
5	17th International Conference on II-VI Compounds and Related Materials.	Sep 2015, Paris, France.	<b>Poster</b> "Homogeneous vertical ZnO nanorod arrays on an in-situ conductive Gd nanolayer"
6	8th International Workshop of ZnO and related materials.	Sep 2014, Ontario, Canada.	<b>Poster</b> "Synthesis of vertically well aligned Gd doped ZnO nanowires grown on sapphire by conventional pulsed laser deposition without catalyst"
7	Materials research society (MRS).	Fall 2013, Boston, US.	<b>Poster</b> "The Influence of Point Defects on the Optical and Magnetic Properties of Gd-Doped ZnO Thin-Films"

### Teaching Activities

#### Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Solid State Physics I	PHYS- 406	3 Lecture + lab
	Experimental Physics 2	PHYS- 508	
2	Research Project in Physics	PHYS- 509	
3	Physics I	PHYS-201	3 Lecture + lab
4	Instructing Lab Physics of "General Physics"		
5	Instructing Lab Physics of "Electricity and Magnetism"		
6	Instructing Lab Physics of "Electricity and Magnetism"		
7	Instructing Lab Physics of "Solid State"		



8	Teacher Assistant in Electromagnetic Theory course		
8	Teacher Assistant in Waves and Vibrations course		

### Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Crystallography and Crystal Growth	PHYS- 544	2 lectures

### Supervision of postgraduate students

#	Name	Degree	Graduation Date
1	Hassan Alkhabaz	Master	1442/10/11
2	Salwa AlQarni	Master	1441/11/16

### Scientific Consultation

	Place	Full/ Partial	From	To
1.	Training graduated BSc students	Full	Sep 2020	Dec 2020
2.	Training graduated BSc students	Full	Sep 2019	Dec 2019
3.	Training graduated BSc students	Full	Feb 2019	May 2019
4.	Training graduated BSc students	Full	Sep 2018	Dec 2018
5.	Mentoring junior PhD student in semiconductor and material spectroscopy group at KAUST	Partial	2014	2016
6.	Mentoring junior PhD student in semiconductor and material spectroscopy group at KAUST	Partial	February 2014	June 2014
7.	Contributed in mentoring high school talented student who won ISEF prize 2013 in physics	Partial	June 2013	September 2013

### Professional Membership

	Place
1	Saudi physical society, 2008
2	Arabian Society of Human Resources Management (ASHRM), 2010
3	Materials Researchers Society (MRS), 2013.
4	American chemical society (ACS), 2014

### Professional Skills

	Skills
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1.	Certificated knowledge in intellectual property from WIPO
2.	Participated in KAUST Saudi Leadership Program 2018, which focuses on strategic impact and aims to enhance the capacity of leaders to drive change in their institutions.
3.	Acquaintance in building the experimental setup of photoluminescence (PL) as the semiconductor & material spectroscopy lab at KAUST was just built when I joined to the group.
4.	Knowledge of laboratory safety
5.	Knowledge of laser safety
6.	Knowledge of research methodologies.
7.	Expert and qualified in different technique (Pulsed Lase Deposition(PLD), X Ray Diffraction (XRD), Scanning Electron Microscope(SEM), Photoluminescence(PL), Time Resolved Photoluminescence (TRPL), and Raman Spectroscopy).
8.	Excellent Communication Skill
9.	Familiar with Microsoft Office (word, excel & power point).
10.	Familiar with Mathematica & Origin "software programs used in scientific, engineering, and mathematical fields"
11.	Familiar with Origin "computer program for interactive scientific graphing and data analysis".
11	Supporting team work

### Awards

1	5 <sup>th</sup> place in the president's list "Highly Published Faculty"-2021 at IAU
2	(PhD)Fellowship at King Abdullah University of Science & Technology (KAUST) in fall (2011).
3	The ideal student in the physics department at Umm Alqura University (1997).

**Updated 13<sup>th</sup> December 2023**