Prof. Abdullah Al-Dwayyan

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Academic Degrees:

1- B.Sc. Physics, KSU (1982).
2- M. Sc. Laser Physics, Essex University, U.K. (1984).
3- Ph.D. Optoelectronics, University of Wales College of Cardiff (UWCC), U.K. (1989).

Employment & Administrative History:

1- Vice Dean for Development and Quality, College of Science, KSU (2014-2018).
2- Foundation board member of King Abdullah Institute for Nanotechnology, KSU (2009 - 2013).
3- Head of Nanotechnology Unit, KSU (2008 - 2009).
4- Head of Physics & Astronomy Department, College of Science, KSU (2004-10/2006).
5- Professor, Physics & Astronomy Department, College of Science, KSU (20014- Now).
6- Associate Professor, Physics Department, College of Science, KSU (2002- 20014).
7- Assistant Professor- Physics Department, College of Science, KSU (1989 –2002).
8- Research scholar in U.K. by KSU (14/06/1983 – 29/06/1989).
9- Demonstrator at Physics Department, College of Science, KSU (1982 – 1983).

Samples of Scientific Activities:

A. Selected Papers published since 2014:

1. M.A. Majeed Khan, Sushil Kumar, M. Naziruddin Khan, Maqusood Ahamed, A.S. Al Dwayyan "Microstructure and blueshift in optical band gap of nanocrystalline AlxZn1-xO thin films" Journal of Luminescence 155, (2014).
2. W. A. Farooq, S. M. Ali, W. Tawfik, A. Fatehmulla, M. Aslam, A. S. Aldwayyan, M. S. AlSalhi "Influence of Laser irradiation on nano-sized powder of Metal oxide " Russian Journal of Physical Chemistry A, 13 (2014).
3. T. M. Al-Inad, W. Tawfik, W. A. Farooq, A. S. Aldwayyan "LIP Characteristics of Nanostructured ZnO Thin Films" High Capacity Optical Networks and Enabling Technologies (HONET) Conference, IEEE Xplore, (2013).
4. M. Naziruddin Khan, M. A. Majeed Khan, Abdullah S. Aldwayan, and J. Puzon Labis; "Comparative Study on Electronic, Emission, Spontaneous Property of Porous Silicon in Different Solvents" Journal of Nanomaterials, 3, Nov. (2014).
5. Tahani R. Al-Biladi, A.S. Al Dwayyan, M. Naziruddin Khan, Saif. M. H. Qaid, Khalid. Al zahrani «Structural and Spectral Characterization of Some PM597 Dye-Silica Core– Shell Nanoparticles». Journal of Spectroscopy, Article ID 901032 , (2015).

6. W. A. Farooq, L. R. AL-Otaibi, *A. S. Al-Dwayyan*, F. Yakuphanoglu, and M. Atif "Effect of Laser Exposure on Structural and Optical Properties of CdO and Li Doped CdO Nano Structured Thin Film Synthesized by Sol Gel Method" J. Nanoelectronics and Optoelectronics Vol. 11, pp. 1–7 (2016).
7. S. Qaid, A. S. Aldwayyan, I. Bedja, M. Hezam and M. K. Nazeeruddin "Simple Hydrothermal Synthesis of Brookite TiO2 Nanowires and their Application in Dye-sensitized and Perovskite Solar Cells" Proceedings of 6th International Conference on Hybrid and Organic Photovoltaics (HOPV14), Ecublens, Switzerland, May (2014).
8. M. Hezam, G. Jacopin, M. Shahmohammadi, Q. Peng, S. Qaid, I. Bedja, J. D. Ganiere, A. Aldwayyan, M. K. Nazeerudin, M. Gratzel, B. Deveaud-Pledran "Investigation of Charge Separation and Charge Injection Dynamics in Perovskite Solar Cells" Int. Conf. on Hybrid Inorganic-Organic Photovoltaics (HOVP 14), May (2014), Lausane, Switzerland.
9. Hamid M. Ghaithan, Saif M. Qaid, Mahmoud Hezam, Muhemmad B. Siddique, Idriss M. Bedja, Abdullah S. Aldwayyan," Invoking the frequency dependence in square modulated light intensity techniques for the measurement of electron time constants in dye sensitized solar cells" SPIE Vol. 9556 955604 (2015).
10. N. Arora, M. I. Dar, M. Hazem, W. Tress, G. Jacopin, T. Moehl, P.Gao, *A. S. Aldwayyan*, D. Benoit, M. Grätzel, and M. K. Nazeeruddin " Photovoltaic and amplified spontaneous emission studies of high quality formamidinium lead bromide films" Adv. Funct. Mater. 26,17, 2846–2854 (2016).
11. Hamid M. Ghaithan, Saif M. H Qaid, Mahmoud Hezam, Joselito P. Labis, Mohammad Alduraibi, Idriss M. Bedja, A. S. Aldwayyan, "Laser induced photocurrent and photovoltage transient measurements of dye-sensitized solar cells based on TiO2 nanosheets and TiO2 nanoparticles", Electrochimica Acta, Vol. 212 (2016).
12. S. M. H. Qaid , M. S. Al Sobaie, M.A. Majeed Khan, I. M. Bedja, F. H. Alharbi , M. Khaja Nazeeruddin and *A. S. Aldwayyan* " Band-gap tuning of lead halide perovskite using a single step spin-coating deposition process " Materials Letters 164, 498–501(2016).
13. Javed Alam, M. Hoshan, A. Shukla, ldass, M. Ramamoorthy, M. Hussain and *A. S.Aldwayyan* "Atomic Layer Deposition of TiO2 Film on a Polyethersulfone Membrane: Separation Applications" Journal of Polymer Research 23. 9, (2016).
14. M. Naziruddin Khan, Ali Aldalbahi, A. S. Al Dwayyan "Composite rods based on nanoscale porous silicon in sol–gel silica and ormosil matrices for light-emitting applications" Journal of Sol-Gel Science and Technology, Vol. 82 (2017).
15. Saif M.H. Qaid, M. Naziruddin Khan, Abdulaziz Alqasem, Mahmoud Hezam, Abdullah Aldwayyan "A straining effect of film thickness on the behaviour of amplified spontaneous emission from methylammonium lead iodide perovskite" IET Optoelectronics, Aug. (2018).
16. Saif M.H. Qaid, Mukhtar Hussain, Mahmoud Hezam, M.A. Majeed Khan, Hamad Albrithen, Hamid M. Ghaithan , Abdullah S. Aldwayyan "Structural and Optical Investigation of Brookite TiO2 Thin Films Grown by Atomic Layer Deposition on Si (111) Substrates" Materials Chemistry and Physics Vol. 225, 55–59, (2019).
17. Bandar Ali Al-Asbahi, Saif M. H. Qaid, Mohammad Hafizuddin Hj. Jumali, Mohamad Saleh AlSalhi, Abdullah S. Aldwayyan "Long-range dipole–dipole energy transfer enhancement via addition of SiO2/TiO2 nanocomposite in PFO/MEH-PPV hybrid thin films" J. APPL. POLYM. SCI. (2019), DOI: 10.1002/APP.47845.
18. Mahmoud Hezam, Saif M.H. Qaid, Idriss Bedja, Fahhad Alharbi, Mohammad Khaja Nazeeruddin and Abdullah Aldwayyan, «Synthesis of Pure Brookite Nanorods in Nonaqueous Growth Environment» Journal of Crystals, 9, p562, 2019.
19. Hamid M.Ghaithan, Zeyad Alahmed, Saif M.H. Qaid and Abdullah Aldwayyan, *«Computational Investigation of Structural, Folded-Unfolded Band Structure and Optical Properties of inorganic Perovskite»*. Journal of Crystals, 10, p342, 2020.

20. Bandar Ali Al-Asbahi, Saif M.H. Qaid, Mahmoud Hezam, Idriss Bedja, Hamid M. Ghaithan, Abdullah S. Aldwayyan *«Effect of Deposition Method on the Structural and Optical Properties of $CH_3NH_3PbI_3$ Perovskite Thin Films»*. Journal of Optical Materials, 103, P 109836, 2020.
21. Hamid M. Ghaithan, Zeyad. A. Alahmed, Saif M.H. Qaid, Mahmoud Hezam, Abdullah S Aldwayyan *«Density functional study of cubic, tetragonal, and orthorhombic $CsPbBr_3$ perovskites»* Journal of ACS Omega, 5, P7468−7480, 2020.
22. Hamid M.Ghaithan, Zeyad Alahmed, Saif M.H. Qaid and Abdullah Aldwayyan, *« First principle-based calculations of the optoelectronic features of 2 x 2 x 2 CsPb(I1-xBrx)3 Perovskite»* Journal of Superlattices and Microstructures, *140,* P106474, 2020.
23. B.A.Al-Asbahia, Saif M.H. Qaid and Abdullah Aldwayyan, *«Effect of donor-acceptor concentration ratios on non-radiative energy transfer in Zero-dimensional Cs4PbBr6 perovskite /MEH-PPV nanocomposite thin films»* Journal of Polymers, *11,* P1-13, 2020.
24. Saif M.H. Qaid, B.A.Al-Asbahia, Hamid M.Ghaithan, M.S.AlSalhi and Abdullah Aldwayyan, *«Optical and Structural Properties of $CsPbBr_3$ Perovskite Quantum Dots/PFO polymer composite thin films»* Journal of Colloid and Interface Science*, 563,* P426-434, 2020.

B. Patent:

1. Abdullah Saleh Aldwayyan, Mohamad Saleh AlSalhi, Abdulrahman Mohammed Aldukhai, Mansour S. Alhoshan, Muhammad Naziruddin Khan, Ghassan K. Al-Chaar, Munir H. Nayfeh; "Organosilicon nanosilicon composites and fabrication methods", **USPTO Applicaton # 20100234204** - **Class:** 501 12 (USPTO).

C. Books and References:

1. 1. A translation into Arabic of a book: "Lasers: Principles and Applications " J.Wilson and J.F.B.Hawkes, Prentice Hall Press (1992) Jointly work with Dr. M. S. Al-Salhi. This book is considered as a text book for students attending 335 Phys course at Physics Department, KSU Press (2009).
2. A translation into Arabic of a book:"Introduction to Optics"F.L. Pedrotti and L.S. Pedrotti,Prentice Hall Press (1993). Jointly work with Dr. M. S. Al-Salhi. This book is considered as a text book for students attending 233 Phys course (Optics-I) at Physics department, KSU Press (2007).
3. A translation into Arabic of a book: "Introduction to Nanotechnology" Charles P. Poolc Jr. and Frank J. Owens, John Wiley & Sons, Inc. (2003).Jointly work with Dr. M. S. Al-Salhi, KSU Press (2015).
4. Anees A Ansari Md. Nazziruddin M Alhoshan, A S Aldwayyan and M S Alsalhi; "Nanostructured Materials: Clissification, Properties, Fabrications, Characterization and their Applications in Biomedical Sciences" Nova Science Publishers Inc. USA (2010).
5. Wrote book in Arabic on "Introduction to Nanotechnology",Jointly work with Dr. M. S. Al-Salhi. KSU Press (2007).
6. Wrote book in Arabic on "Where is Nanotechnology going to lead Us" Jointly work with Dr. M. S. Al-Salhi. KSU Press (2007).

D. Graduate Students:

More than 30 grad students have been supervised and co-supervised by Prof. Aldwayyan .