

Personal & Contact Information

Name: Tawfeeq Kadheem Faleh Al-Hamdi

Gender: Male

Date & Place of Birth: Feb. 1972 in Baghdad, Iraq

Nationality: Iraqi

E-mail: tawfeeq.alhamdi@uomustansiriyah.edu.iq

Previous Job Situation:

1. Manager of Quality Assurance and Accreditation at College of Engineering/ Mustansiriyah University, Baghdad-Iraq.
2. PhD student, RA, and TA at The School of Mechanical and Materials Engineering in Washington State University (WSU), Pullman, WA, 99164, USA.

Present Position: Faculty member at the Materials Engineering Department - College of Engineering/ Mustansiriyah University, Baghdad-Iraq.

Education

- Aug. 2014-Dec. 2019
Washington State University (WSU), Pullman, WA, 99164, USA., **Ph.D. Degree in Mechanical Engineering** which included a dissertation entitled “**Cost-Effective Techniques to Improve the Performance and Efficiency of CdTe Solar Modules**”, Washington State University (WSU), Pullman, WA, 99164, USA.
- Jan. 2014- May 2014
University of Missouri-Columbia (MO, USA), Spring 2014 (Academic semester at the Department of Mechanical & Aerospace Engineering).
- Jan. 2013-Dec. 2013
University of Missouri-Columbia (MO, USA), Intensive English Program (IEP), (Spring, Summer, and Fall 2013)
- Oct. 1999 - Jul. 2002
Mustansiriyah University / College of Engineering (Baghdad, Iraq), **Master’s Degree in Mechanical Engineering (M.Sc.)** which included a thesis entitled “**Detection the performance Decline in Al-Dura Power Plant Condenser**”.
- Oct. 1991- Jun. 1996
Mustansiriyah University/College of Engineering (Baghdad, Iraq), **Bachelor’s degree in Mechanical Engineering (B.Sc.)**

Experience

- Nov.2003- Jul. 2005
Operation and Maintenance Engineer at Al-Karkh Wastewater Treatment Plant (Governmental Sector), Baghdad, Iraq.

- Sep.2002- June 2003
Lecturer at the Mechanical Engineering Department of Mustansiriyah University/College of Engineering (Governmental Sector), Baghdad, Iraq.
- Sep.2002- Oct. 2005
Supervisor at the Internet Center of Mustansiriyah University/College of Engineering (Governmental Sector), Baghdad, Iraq.
- Sep.2005- Jan.2013
Faculty member at the Materials Engineering Department of Mustansiriyah University/College of Engineering (Governmental Sector), Baghdad, Iraq.
- Dec.2009- Dec.2012
Manager of Quality Assurance and Accreditation at College of Engineering/Mustansiriyah University (Governmental Sector), Baghdad, Iraq.
- Sep.2014- Jan. 2020
Research Assistant (RA), at the School of Mechanical and Materials Engineering, Washington State University (WA, USA), in the following fields:
 - ✓ Synthesis and growth of doped and undoped CdTe and CdSeTe from elements by the high-pressure Bridgman (HPB) furnace for CdTe solar modules.
 - ✓ Design and construct the close sublimation system (CSS) and use it in deposition of CdTe thin film solar cells.
 - ✓ Passive cooling techniques for photovoltaic modules.
 - ✓ Analysis the crystals by the infrared (IR) microscopy.
 - ✓ Vacuum systems
- Aug. 2019-Jan. 2020
Teaching Assistant (TA) at the School of Mechanical and Materials Engineering, Washington State University (WA, USA).
- Feb. 2020-Present
Faculty member at the Materials Engineering Department - College of Engineering/ Mustansiriyah University, Baghdad-Iraq.

Practical Experience

- Steam power plants
- Energy harvesting by photovoltaic
- Synthesis and growth of doped and undoped feedstock materials for CdTe solar modules.
- Passive cooling techniques for photovoltaic modules.
- Analysis the crystals by the infrared (IR) microscopy.
- Vacuum systems
- Deposition techniques of solar cells.
- Energy harvesting by photovoltaic modules.
- Photovoltaic materials and materials for energy application

Research Areas

- ✓ Heat transfer, fluid flow, energy conversion, and computational fluid dynamics (CFD)
- ✓ Thermal power plants
- ✓ Synthesis and growth techniques of doped and undoped CdTe and CdSeTe feedstock materials from elements for CdTe solar modules.
- ✓ Design and construct the close sublimation system (CSS) and use it in deposition of CdTe thin film solar cells.
- ✓ Passive cooling techniques for photovoltaic modules.
- ✓ Analysis the crystals by the infrared (IR) microscopy.
- ✓ Vacuum systems
- ✓ Solar cells' deposition techniques
- ✓ Energy harvesting by photovoltaic modules.
- ✓ Photovoltaic materials and materials for energy application

Published Research and Activities

1. Tawfeeq Kadheem Faleh Al-Hamdi "Computation Thermodynamic Properties of Superheated Water Far from Critical Region", Journal of Engineering and Development, Vol. 15, 2011.
2. Emad Talib Hashim, Tawfeeq Kadheem Faleh Al-Hamdi, Hayder Abdulkadhim Jassim "A Predictive Equation of State for Selected Saturated Gases", Journal of Engineering and Development, Vol. 16, No.1, March 2012.
3. Dheyaa Wajid Abbood & Tawfeeq Kadheem Faleh Al-Hamdi "Experimental Investigation for Passive Cooling in Baghdad", March 2012, Journal of Energy and Power Engineering.
4. Kadhem K. Resan, Tawfeeq Al-Hamdi, Hayder Abdulkadhim Jassim, "The role of continuing education in the development of teaching staff in the engineering colleges / Department of Materials Engineering at the Faculty of Engineering - University of Al- Mustansiriya as a model", Conference of University of Basrah entitled " Continuing Education: The University's Way Towards the Society", Mar. 2012, Basrah, Iraq.
5. I participated in quality assurance training workshop under supervision of UNESCO entitled " Towards Self-Assessment of 12 Engineering Colleges in Iraq" June 2010, Doha, Qatar.
6. I participated in a conference entitled " The First Conference of Quality Assurance and Accreditation in Iraqi Higher Education Institutes", at the Kufa University Apr. 2010, Najaf, Iraq.
7. I participated in a conference entitled " The Second Conference of Quality Assurance and Accreditation in Iraqi Higher Education Institutes", at the Kufa University, Apr. 2011, Najaf, Iraq.
8. I participated in a conference entitled " The Third Conference of Quality Assurance and Accreditation in Iraqi Higher Education Institutes", at the Kufa University, Apr. 2012, Najaf, Iraq.
9. Amit H. Munshi, Carey L. Reich, Adam H. Danielson, Ramesh Pandey, Darius Kuciauskas, Jinglong Guo, Siming Li, Akash Shah, Santosh Swain, Tushar M. Shimpi, Tawfeeq K. Al-Hamdi, Kelvin G. Lynn, Robert F. Klie, and Walajabad S. Sampath "Arsenic Doping of Polycrystalline CdSeTe Devices for Microsecond Life-times with High Carrier Concentrations", 2020 47th IEEE Photovoltaic Specialists Conference (PVSC). Calgary, AB, Canada. 15 June-21 Aug. 2020. Publisher: IEEE.
10. Tawfeeq K. Al-Hamdi, Seth W. McPherson, Santosh K. Swain, Joshah Jennings, Joel N.

- Duenow, X. Zheng, Wyatt K. Metzger, Csaba Szeles, Kelvin G. Lynn, “CdTe synthesis and crystal growth using the high-pressure Bridgman technique”, Journal of Crystal Growth. Volume 534, 15 March 2020.
11. Seth W. McPherson, Tawfeeq Al-Hamdi, Joel N. Duenow, X. Zheng, David S. Albin, Tursun Ablekim, Eric Colegrove, Mahisha Amarasinghe, Wyatt K. Metzger, Santosh K. Swain, and Kelvin G. Lynn “Optimization of source material for in-situ Arsenic doping via vapor transport deposition of CdTe films”, 2020 47th IEEE Photovoltaic Specialists Conference (PVSC). Calgary, AB, Canada. 15 June-21 Aug. 2020. Publisher: IEEE.
 12. Tawfeeq K. Al-Hamdi and Jin Liu, “A parametric study to Improve the Performance of Cadmium Telluride (CdTe) Thin Film Photovoltaic Modules”, will be submitted very soon to publish in one of Solar Cells Journals.

Professional Licenses

- ★ Member of the Iraqi Engineers Syndicate (Baghdad, Iraq) since 1996.
- ★ Member of The American Society of Mechanical Engineers (ASME), USA, since 2017.

Languages

English and Arabic