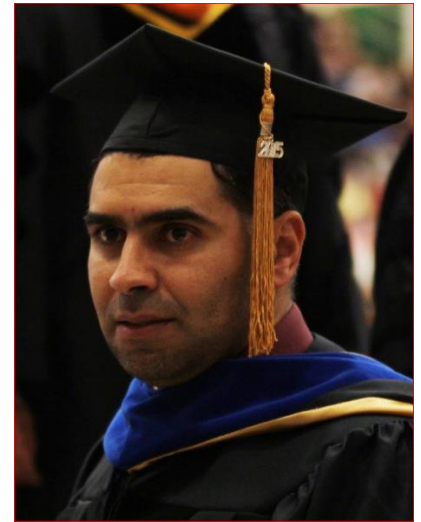


# CURRICULUM VITAE

## Dr. Tarek A Mohammed Hamad



### 1. PERSONAL PARTICULARS

#### 1.1 Personal Information:

**Citizenship** : Libyan  
**Date of Birth** : 04February 1978 (Gregorian)  
**Birth Day-of-the-Week** : Saturday  
**Place of Birth** : Elbeida, Libya  
**Hobbies** : Soccer  
**Marital Status** : Married with Four kids  
**Gender** : Male

#### 1.2 Contact Information and Research Profile:

**Address** : Faculty of Engineering (FOE), Missouri University of Science and Technology (MS&T), 400 W. 13th St. Rolla, MO 65409, USA.  
**Contact Numbers** : +13039601524, +218 913775477 (Mobile)  
**(Professional) E-mail** : tah5xd@mst.edu  
**Personal Email** : tarig73597@yahoo.com

### 2. EDUCATION BACKGROUND

#### 2.1 Summary of Academic Qualifications:

**2015** : Ph.D. in Mechanical Engineering (MS&T, USA)  
**2014** : M.Sc. in Geological Engineering (MS&T, USA)  
**2007** : M.Sc. in Mechanical Engineering (UOT, Libya)  
**1999** : B.Sc. in Mechanical Engineering (OMU, Libya)

#### 2.2 Education Details:

**Degree** : Doctor of Philosophy (Ph.D.)  
**Major** : Mechanical Engineering (Renewable Energy, Heat Transfer, and Refrigeration and Air-conditioning )  
**Dissertation Title:** System Integration of Hydrogen Energy Technologies using Renewable Energy Resources  
**University** : Missouri University of Science and Technology (MS&T), USA.  
**Duration** : August 2011 - April 2015  
**GPA** : 4 (out of 4)

**Degree** : Master of Engineering Sciences (M.Sc.)

Major : Geological Engineering  
University : Missouri University of Science and Technology (MS&T), USA.  
Duration : August 2012 - December 2014  
GPA : 4 (out of 4)

Degree : Master of Engineering Sciences (M.Sc.)  
Major : Mechanical Engineering – Power Engineering, Heat Transfer, and Refrigeration and Air-conditioning II  
Thesis Title : Study of thermal comfort application in schools of Libya  
University : University of Tripoli(UOT), Libya  
Duration : July 2002 - September 2007  
GPA : 3.56 (out of 4)

Degree : Bachelor of Science (B.Sc.)  
Major : Mechanical Engineering (power, Heat Transfer, and Refrigeration and Air-conditioning )  
Project Title : Design water heater system by solar collector.  
University : Omar Al-Mukhtar University (OMU), Libya  
Duration : September 1994 - August 1999  
Percentage : 65.9%

Level : General Secondary Education Certificate  
School : Al-Qadisiyah Secondary School (Previously known as Al-Fateh Secondary School), Al-Beida, Libya  
Percentage : 84.3%

Level : Basic Education Certificate  
School : 7- April Preparatory School, Al-Beida, Libya  
Percentage : 89.3%

### 3. WORKING EXPERIENCE

#### 3.1 Summary of Working Experience:

**15Jan. 2017 – Until Now**                      **Assistant Professor**  
Omar Al-Mukhtar University (OMU)  
Al-Beida, Libya.  
Tel: +218913775477  
Website: <http://www.omu.edu.ly>

**25 Oct.2017 – 15Jan. 2017**                      **Assistant Professor**  
Missouri University of Science and Technology (MS&T),  
1870 Miner Circle, Rolla, MO 65409, USA  
Website: [www.mst.edu](http://www.mst.edu)  
Tel: +1573-341-4111  
Fax: +1-800-522-0938

**1Feb 2014 – 1Nov. 2016**

**Teaching Assistant**

Missouri University of Science and Technology (MS&T),  
1870 Miner Circle, Rolla, MO 65409, USA

Website: [www.mst.edu](http://www.mst.edu)

Tel: +1573-341-4111

Fax: +1-800-522-0938

**1Feb 2007 – 1Aug. 2010**

**Lecturer**

Omar Al-Mukhtar University (OMU)

Al-Beida, Libya.

Website: <http://www.omu.edu.ly>

Tel: +21884632508

Fax: +21884633676

**1Jan 2000 – 1Jan. 2004**

**Graduate Research Assistant**

University of Tripoli (UOT)

Tripoli, Libya.

Website: <http://www.uot.edu.ly>

Tel: +218214625559/2

Fax: +218214628072/98

**1 Jan 2004 – 1 Jan 2007**

5 years' experience in Akida Company for HAVC system  
Chairman for the unit of study, designing in supply  
& installation of center Refrigeration and Air-conditioning  
System a designer engineer for ducts, load calculation  
and specification layout for buildings.

Chairman for the department after service (LCD & AC)

**3.2 Career Description:**

- Preparing, delivering and teaching lectures to undergraduate students.
- Carrying out tutorial classes to enhance problem-solving skills of students.
- Conducting laboratory sessions and group discussions.
- Supervising final year projects (FYPs) of undergraduate students
- Preparing, administrating and grading examinations, laboratory reports and assignments.
- Invigilating final exams and midterm tests.
- Advising students on course and academic matters and career decisions.
- Applying Outcome-Based Education (OBE) and analysing learning outcomes (LOs) and Program Outcomes (POs) achievements.
- Serving on faculty committees dealing with course development, syllabus revision, curriculum planning and course benchmarking of OMU with national and overseas universities.
- Perform a variety of ad-hoc administrative duties such as Convocations, Open Days and Research Colloquiums.
- Attending faculty-level and university-level meetings.

- Coordinating and placing students in local and overseas companies for their industrial training program (ITP).
- Visiting and examining trainees of our university while experiencing industrial exposure during their ITP placement.
- Discussing students' affairs and planning for stimulating under-performing and under-probation students to improve their performance.
- Planning, filing and checking OBE documents and preparing for program accreditation cycles.

### **3.2 Taught Courses:**

#### **3.2.1 Undergraduate Courses (Sorted by Course Code):**

- (1) MECH ENG 2340, Statics and Dynamics, 1, 4/4.
- (2) MECH ENG 2350, Engineering Mechanics-Dynamics, 1, 4/4.
- (3) MECH ENG 2360 – Dynamics, 1, 4/4.
- (4) MATH 1103 - Fundamentals of Algebra, 1, 4/4.
- (5) MATH 1214 - Calculus for Engineers I, 2, 4/4.
- (6) MATH 1215 - Calculus for Engineers II, 3, 4/4.
- (7) MATH 3103 - Matrix Algebra, 1, 4/4.
- (8) MECH ENG 2519 - Thermodynamics, 3, 4/4.
- (9) MECH ENG 3131 - Thermofluid Mechanics I, 3, 4/4.
- (10) MECH ENG 3525 - Heat Transfer, 5, 4/4.
- (11) MECH ENG 5131 - Intermediate Thermofluid Mechanics, 3, 4/4.
- (12) MECH ENG 3411 - Modeling and Analysis of Dynamic Systems, 2, 4/4.
- (13) MECH ENG 5537 - Fuel Cell Principles, 1, 4/4.
- (14) MECH ENG 1720 - Introduction to Engineering Design, 3, 4/4.
- (15) MECH ENG 3131 - Fluid Mechanics, 1, 4/4.
- (16) MECH ENG 503 - Refrigeration and Air-conditioning II, 5, 4/4.

#### **3.2.2 Graduate Courses (Sorted by Course Code):**

- (1) GE 600 - Partial Differential Equations, 2, 4/4.
- (2) ME 617 - Advanced Thermodynamics, 1, 4/4.
- (3) ME 638 - Advanced Fluid Mechanics, 1, 4/4.
- (4) ME 639 - Heat and mass transfer, 2, 4/4.
- (5) ME 609 - Advanced Air Conditioning, 1, 4/4.

### 3.3 Academic Evaluation Statistics

The statistics of my Teaching Evaluation (out of 5) for Lectures and Tutorials are as follows:

- **Lecture Evaluation:**
  - Mean = 4.45
  - Standard Deviation = 0.32
  - Subjects Count = 20
  
- **Tutorial Evaluation:**
  - Mean = 4.63
  - Standard Deviation = 0.35
  - Subjects Count = 18

## 4. STUDENT SUPERVISION

### 4.1 Undergraduate Student Supervision

#### Academic Year: 2007/2008

- Laminar natural convection from horizontal cylinder with longitudinal fins.
- Construction of a vertical turbine for domestic electricity generation.

#### Academic Year: 2008/2009

- Laminar natural convection from inclined cylinder.
- HVAC system design El-Bieda hospital.
- Wind turbine design and evaluation.

#### Academic Year: 2009/2010

- Construction and testing of a wind turbine for home use.
- Integrated Solar Combined Cycle Power Station.
- Design Multipurpose Safety Wheel Chair.

#### Academic Year: 2016/2017

- Solid waste as renewable source of energy: current and future possibility in Elbyda City.
- Study of combined heat, hydrogen and power system based on a molten carbonate fuel cell fed by biogas produced by anaerobic digestion.
- Method of thermal conductivity measurement.

#### Academic Year: 2017/2018

- Proposal for: Design, Thermodynamic Analysis, and Modeling of the Solar Updraft Tower.

## 5. PUBLICATIONS

### 5.1 International Refereed Journals:

- **Tarek A. Hamad**, John W. Sheffield, Hydrogen recovery, cleaning, compression, storage, dispensing, distribution system and End-Uses on the university campus from combined heat, hydrogen and power system, Int J Hydrogen Energy. 2014, 39:647-53.
- **Tarek A. Hamad**, John W. Sheffield, Study of a molten carbonate fuel cell combined heat, hydrogen and power system: End-use application, Case Studies in Thermal Engineering.2013, 1:45–50.
- **Tarek A. Hamad**, John W. Sheffield, Study of combined heat, hydrogen and power system based on a molten carbonate fuel cell fed by biogas produced by anaerobic digestion, Energy Conversion and Management.2014; 81:184-91.
- **Tarek A. Hamad**, John W. Sheffield, Solid waste as renewable source of energy: current and future possibility in Libya, International Journal of Case Studies in Thermal Engineering, 2014, 4:144–52.
- **Tarek A. Hamad**, John W. Sheffield, Hydrogen production and End-Uses from combined heat, hydrogen and power system by using local resources, International Journal of Renewable Energy, 2014, 71:381-6
- **Tarek A. Hamad**, John W. Sheffield, Study of a molten carbonate fuel cell combined heat, hydrogen and power system, International Journal of Energy, 2014, 75:579 – 588.
- Yousif M. Hamad, **Tarek A. Hamad**, and John W. Sheffield. A design for hydrogen production and dispensing for northeastern United States, along with its infrastructural development timeline, International Journal of Hydrogen Energy, 2014, 1 -1 9.
- Yousif M. Hamad, **Tarek A. Hamad**, and John W. Sheffield. Molten Carbonate Fuel Cell Combined Heat, Hydrogen and Power System: Feedstock Analysis, International Journal of Energy Science and Technology, 2013, Vol. 6, No. 2, 2013, pp. 31-35.
- Abdulhakim A. Agll, **Tarek A. Hamad**, and John W. Sheffield, Development of design a drop-in hydrogen fueling station to support the early market buildout of hydrogen infrastructure, International Journal of Hydrogen Energy, 2016,1–12.
- Abdulhakim A. Agll, Yousif M. Hamad, **Tarek A. Hamad**, Sushrut Bapat, Mathew Thomas, Kevin B. Martin, and John W. Sheffield Molten Carbonate Fuel Cell Combined Heat, Hydrogen and Power System: Energy analysis, International Journal of Applied Thermal Engineering, 2013, 59:634-8.

- Abdulhakim A. Agll, Yousif M. Hamad, **Tarek A. Hamad**, and John W. Sheffield, Study of energy recovery and power generation from alternative energy source, International Journal of Case Studies in Thermal Engineering, 2014, 4:92–98.
- Moutaz Benali, **Tarek Hamad**, Ahmad Belkhair, and Yousif Hamad, Investigating the Use of Combined Hydrogen, Heat and Power System for Omar AL-Mukhtar University Campus, Advances in Biological Chemistry, 2019,9,31-44.

## 5.2 International Conferences:

- **Tarek A. Hamad**, John W. Sheffield, Solid waste as renewable source of energy: current and future possibilities in Libya International Conference on Sustainable Design, Engineering & Construction (ICSDEC) 2015. CONF077494. ICSD2015\_0009. 10 - 13 May 2015 | Hyatt Regency McCormick Place, Chicago, USA.
- **Tarek A. Hamad**, John W. Sheffield, A Design of a Drop-in Hydrogen Fueling Station. {ASME 2015 International Mechanical Engineering Congress & Exposition}
- **Tarek A. Hamad**, John W. Sheffield, Waste-to-Energy: A Renewable Energy Source from Municipal Solid Waste, 2012.
- Yousif M. Hamad, **Tarek A. Hamad**, John W. Sheffield, Mapping the Hydrogen Energy Potential for the State of Missouri, and its Use in the Reduction of Greenhouse Gas Emissions {ASME 2015 International Mechanical Engineering Congress & Exposition}
- Abdulhakim A. Agll, **Tarek A. Hamad**, W. Sheffield, Development of design a drop-in hydrogen fueling station to support the early market buildout of hydrogen infrastructure {World Renewable Energy Congress 2015}.
- Abdulhakim A. Agll, Yousif M. Hamad, **Tarek A. Hamad**, and John W. Sheffield. Study of a molten carbonate fuel cell combined heat, hydrogen and power system: Energy analysis. World Congress on November 18-20, 2013 Hilton San Antonio Airport, TX, USA, Petro chemistry and Chemical Engineering; 10/2013.doi: 10.4172/2157-7463.S1.004.
- **Tarek A. Hamad**, Moutaz M. Benali, Yousif M. Hamad, Ahmad O. Belkhair. Design of Combined Hydrogen, Heat and Power System Using Renewable Energy Resources: A Case Study of El-Beida City, Libya. Fourth International Scientific Research conference: Renewable Energy & Water Sustainability, Tanta University, Egypt, March 26-28, 2018.
- Ahmad Belkhair, **Tarek Hamad**, and Moutaz Benali, Estimating the Amount of Methane Gas Generated from the Feedstock: A Case Study of El Beida City, Libya, IRES Conference 2019, Sousse - Tunisia



- Moutaz Benali, **Tarek Hamad**, Ahmad Belkhair, and Yousif Hamad, Investigating the Use of Combined Hydrogen, Heat and Power System for Omar AL-Mukhtar University Campus, IRES Conference 2019, Sousse - Tunisia
- **Tarek Hamad**, Moutaz Benali, Yousif Hamad, and Ahmad Belkhair, Design of Combined Hydrogen, Heat, and Power System Using Renewable Energy Resources: A case Study of El-Beida City, Libya., the 5<sup>th</sup> International Conference on Scientific Research ISR-2019, Sharm Elshiekh-Egypt.
- **Tarek Hamad**, Moutaz Benali, Yousif Hamad, Ahmad Belkhair, and Mohammed Fwazi, Study of Combined Hydrogen, Heat, and Power System by using Local Resources for Omar AL-Mukhater University Campus, Icts2019, Tripoli – Libya.
- **Tarek Hamad**, Moutaz Benali, Yousif Hamad, Ahmad Belkhair and Mohammed Fwazi, Methane Production From Organic Waste; A Case Study of El-Bieda, Libya, Icts2019, Tripoli – Libya.

### 5.3 Research

#### 5.3.1 Research Grants:

- 2004 - Hydrogen fueling station, (12/2003-5/2004), - 5th Place.
- 2008 - Hydrogen applications for an airport, (12/2007-5/2008), - Grand Prize Winners, the grand prize winning team received a stipend of up to \$5,000 to cover airfare, meals, and incidental trip expenses, as well as complimentary hotel rooms and conference registration for eight team members and their faculty representative.
- 2009 - Green student centers powered by hydrogen, (12/2008-5/2009), - 6th Place.
- 2010 - Hydrogen communities, (12/2009-5/2010), - Grand Prize Winners, the Grand Prize winning team was invited to present their design in a general session of the National Hydrogen Association's Hydrogen Conference and Expo in Long Beach, California May 3-6, 2010. Also the team had the opportunity to present at a session of the World Hydrogen Energy Conference in Essen, Germany May 17-18, 2010.
- 2011 - Residential hydrogen fueling systems, (12/2010-5/2011), - 4th Place.
- 2012 - Combined hydrogen, heat and power for a university campus, (12/2011-5/2012), - 4th Place.
- 2013 - Development of hydrogen fueling infrastructure in the northeastern U.S., (12/2012-5/2013), – 4th Place.

#### 5.3.2 Tarek A. Hamad @ ResearchGate: Citations 79



- Visit My ResearchGate URL [https://www.researchgate.net/profile/Tarek\\_Hamad?ev=hdr\\_xprf](https://www.researchgate.net/profile/Tarek_Hamad?ev=hdr_xprf)

### **5.3.3 Dr. Tarek Hamad: LinkedIn.com**

- Visit My LinkedIn [https://www.linkedin.com/hp/?dnr=K44D6-PWWDTY4QE0BuLQ0Jyddl6pjZ5ZgK92&trk=nav\\_responsive\\_tab\\_home](https://www.linkedin.com/hp/?dnr=K44D6-PWWDTY4QE0BuLQ0Jyddl6pjZ5ZgK92&trk=nav_responsive_tab_home)

### **5.3.4 Research Interests**

- Study of a molten carbonate fuel cell combined heat, hydrogen and power system.
- Hydrogen recovery, cleaning, compression, storage, dispensing, distribution system.
- Study of combined heat, hydrogen and power system based on a molten carbonate fuel cell fed by biogas produced by anaerobic digestion.
- A design for hydrogen production and dispensing and A Design of a Drop-in Hydrogen Fueling Station.
- Alternative energy source.
- A Renewable Energy Source from Municipal Solid Waste

## **6. SERVICE**

### **6.1 Membership of Conference Committees at ASME:**

- Track Co-Organizer, 8<sup>th</sup> international conference on Energy Sustainability, Hydrogen Energy Technologies, (Boston, MA, USA), June 30-July 2, 2014.ASME.
- Track Co-Organizer, 9<sup>th</sup> international conference on Energy Sustainability, (San Diego Convention Center, 111 West Harbor Drive, San Diego, CA, USA), June 30-July 2, 2015.ASME.

### **6.2 Service as Reviewer**

#### **6.2.1 Journals**

- Energy Conversion and Management, 14-02386., Publisher (since: 10/2014)
- Int. J Hydrogen Energy, (since: 04/2015)
- Energy, (since: 12/2017)

## **6.2.2 Conferences**

- 8<sup>th</sup> international conference on Energy Sustainability, (Boston, MA, USA), June 30-July 2, 2014.ASME.
- 9<sup>th</sup> international conference on Energy Sustainability, (San Diego Convention Center, 111 West Harbor Drive, San Diego, CA, USA), June 30-July 2, 2015.ASME.

## **6.3 Membership of Professional Bodies**

- Missouri S&T student team hydrogen design- member (01/2011)
- ASHRAE – member (03/2001)
- President of Libyan Student Association - Student Activity (07/2013)
- President of Libyan Students union in U.S.A. (05/2014)
- International Student Association – Member (01/2011)
- African Student Association – Member (01/2013)

## **6.4 Language Proficiency**

- Arabic (native Language), excellent
- English, excellent

## **7. WORKSHOPS/TRAINING COURSES**

- Pumps Presentation in Submersible Pumps Assembling Repairing, Maintenance, Operation & Protection system, Franklin Company, Libya, (01/2002-02/2002).
- Air conditioning courses LG Production, LG at Akida Company, Seoul, South Korea, (11/2004-01/2005).
- Air conditioning Course LG Multi V system (variable refrigerant flow) selection software, operation and commission test, at main training center, Seoul, South Korea, (11/2007-01/2008).
- ISO 9001 internal editor at Akida Company, Libya, (09/2007-10/2007).
- Human performance evaluation and productivity, Akida Company, Libya, (07/2007-8/2007).
- Project management, Akida Company, Libya, (06/2006-7/2006).

- ISO 9001 internal editor advanced course at Akida Company, Libya, (05/2008-6/2008).

## 8. REFERENCES

1. John W. Sheffield, Ph.D., as co-advisor, Professor of Engineering Technology College of Technology-Lafayette Subject Editor, International Journal of Hydrogen Energy Associate Director, Center for Transportation Infrastructure and Safety (CTIS), National University Transportation Center, Purdue University, 5500 State Road 38 East, Lafayette, IN 47905-9405, 765-607-2021 Office – 765-269-9621 Fax – 573-201-4146 Cell, [jsheffie@purdue.edu](mailto:jsheffie@purdue.edu).
2. Nishant Kumar, Assistant Teaching Professor at Missouri University of Science and Technology, 129 Toomey Hall. 400 W 13th Street, Rolla, MO, 65409-0050, USA, [nkwtb@mst.edu](mailto:nkwtb@mst.edu), 573-341-7215 Office, 573-202-0512 Cell
3. Dr. Ashok Midha, as advisor, Professor and Director of Product Innovation and Creativity Center (PICC), Education: Ph.D., University of Minnesota at Twin Cities, 186 Toomey Hall, Missouri, 400 West 13th Street, Rolla, MO 65409-0500, (573) 341-4298, Fax: (573) 341-4607, [Midha@mst.edu](mailto:Midha@mst.edu).
4. Dr. K. Chandrashekhara, Curators' Professor of Mechanical and Aerospace Engineering, Director of Composite Manufacturing Laboratory, Missouri University of Science and Technology, 231 Toomey Hall, Rolla, MO 65409, 573-341-4587 (voice), 573-341-6899 (fax), [chandra@mst.edu](mailto:chandra@mst.edu).
5. Dr. Robert G. Landers, PhD., Professor of Mechanical Engineering, Associate Chair for Graduate Affairs, Mechanical and Aerospace Engineering Department, Missouri University of Science and Technology (formerly University of Missouri–Rolla), 194C Toomey Hall; 400 West 13th Street; Rolla, Missouri 65409–0050, Phone: (573) 341–4586, Fax: (573) 341–6899, [landersr@mst.edu](mailto:landersr@mst.edu).

*Last update: 10 March, 2019  
Thanks and best regards.*

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Missouri University of Science and Technology  
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Assistant Professor  
Chairperson of (SREE) Department  
Tel : +218913775477  
E-mail: [tarek.hamad@omu.edu.ly](mailto:tarek.hamad@omu.edu.ly)*  
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