

# CURRICULUM VITAE

## Abdullah E. Alali



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**Marital status:** Married / Four children

**Nationality:** Jordanian

**Languages:** English/Arabic (Fluent)

## EDUCATION AND EXPERIENCE PROFILE

### EDUCATION

**Ph.D.**, Mechanical and Nuclear Engineering, Technische Universität München (TUM), Munich, Germany, 2014. Dissertation: "Development and Validation of a New Solver Based on the Interfacial Area Transport Equation for the Numerical Simulation of Sub-cooled Boiling with OpenFOAM CFD Code for Nuclear Safety Applications".

**M.S.**, Nuclear Engineering, Technische Universität München, Munich, Germany, 2010.

**B.S.**, Mechanical Engineering, Jordan University of Science and Technology, Irbid, Jordan, 2003.

### ACADEMIC AND PROFESSIONAL POSITIONS HELD

**Chairman of Nuclear Engineering Department, JUST, Jordan, September 2020 - September 2021.**

#### **Associate Professor:**

Nuclear Engineering Department, JUST, Jordan, June 2019 – Current.

#### **Assistant Professor:**

Nuclear Engineering Department, JUST, Jordan, June 2014 – May 2019.

#### **Research Assistant:**

- Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH/ Reactor safety research institute, Munich – Germany, April 2012 – August 2013.

- Nuclear Engineering Department, Technische Universität München, Munich – Germany, September 2010 – March 2012.

### **Professional Experience**

- March 2004 – March 2005: Directorate of housing and Public works as a trainee engineer, IRBID - JORDAN.
- April 2005 – March 2008: Central Electricity Generating Company (CEGCO), AMMAN - JORDAN, with excellent experience in:
  - Operation and maintenance of GE gas turbine (frame 6 & 9).
  - Operation and maintenance of MITSUBISHI steam turbine (100 MW) as combined cycle with gas turbine.

## **ACADEMIC AND TEACHING PROFILE**

### **TEACHING ACTIVITIES**

- Engineering Measurements Lab
- Fluid Mechanics
- Nuclear Fuel Cycle & Waste Management
- Heat Transfer
- Machine Design ( 1)
- Nuclear Engineering Seminar
- Nuclear Power Plant Systems & Operations (1)
- Nuclear Reactors Thermal Hydraulics
- Radiation Protection & Dosimetry
- Thermal Power Plants
- Thermal Fluids Lab

### **ADMINISTRATIVE AND INFORMAL TEACHING ACTIVITIES**

- Serving in various department and faculty of engineering committees – ABET accreditation committee, Graduation Projects Committee; Staff Hiring Committee at the Nuclear Engineering Department, Jordan University of Science and Technology, 2013-current.

- Department representative at the college of engineering council for the academic years 2014-2015, 2015-2016 and 2018-2019.
- Head of the department scientific research committee for the academic year 2017-2018.
- Head of the department safety and laboratory committee for the academic years 2016-2017.
- Department Website Director, 2018-2019.

## RESEARCH AND PUBLICATIONS PROFILE

### RESEARCH INTERESTS

- Radiation detection and measurement.
- Radon measurement.
- Nuclear Reactor Thermal Hydraulics.
- Two-Phase Flow.
- Subcooled Boiling Flow for Nuclear Safety.
- Performance of Power conversion in gas cooled small modular reactors (SMR)

### RESEARCH FUNDINGS

Project Title	Year	Granted by: (Amount)
An Automated Counting System for Measuring Tracks Density on CR-39 Detectors	Submitted	Deanship of Research 43000\$
Assessment of radon concentrations and exposure doses in dwellings surrounding gas turbine power plant.	2016-2018	Deanship of Research 9000\$

## JOURNAL PUBLICATIONS "Peer Reviewed"

1. **Alali A. E.**, Al-Shboul K. F., Bani Yaseen Q. and Alaroud A., Assessment of radon concentrations and exposure doses in dwellings surrounding a high capacity gas turbine power station using passive measurements and dispersion modeling. *Journal of Environmental Radioactivity*. **196**, 9-14 (2019). doi: <https://doi.org/10.1016/j.jenvrad.2018.10.001>
2. Al-Shboul K. F., **Alali A. E.**, Al-Shurafat A. W., Arrasheed A. A. and Al-Shboul S. A., Spatial evaluation of radionuclide concentrations and the associated radiation hazards using the kriging method. *Journal of Radioanalytical and Nuclear Chemistry* (2018). doi:10.1007/s10967-018-6015-x
3. **Alali A. E.**, Al-Shboul K. F. and Albdour S. A., Radioactivity measurement and radiological hazard assessment of the commonly used granite and marble in Jordan. *Radiation Protection Dosimetry*, ncy077-ncy077 (2018). doi:10.1093/rpd/ncy077
4. **Alali A. E.** and Al-Shboul K. F., Performance analysis of the closed Brayton power cycle in a small-scale pebble bed gas cooled reactor using different working fluids. *Annals of Nuclear Energy*. 121, 316-323 (2018). doi: <https://doi.org/10.1016/j.anucene.2018.07.040>
5. **Alali A. E.**, Schöffel P., Herb J. and Macian R., Numerical investigations on the coupling of the one-group interfacial area transport equation and subcooled boiling models for nuclear safety applications. *Annals of Nuclear Energy*. 120, 155-168 (2018). doi: <https://doi.org/10.1016/j.anucene.2018.05.034>
6. Al-Shboul K. F., **Alali A. E.**, Batayneh I. M. and Al-Khodire H. Y., Radiation hazards and lifetime risk assessment of tap water using liquid scintillation counting and high-resolution gamma spectrometry. *Journal of Environmental Radioactivity*. **178-179**, 245-252 (2017). doi: <https://doi.org/10.1016/j.jenvrad.2017.09.005>
7. Al-Shboul K. F., **Alali A. E.**, AL-Khodire H. Y., Batayneh I. M. and Al-Shurafat A. W., Assessment of secular equilibrium and determination of natural and artificial radionuclide concentrations in the zone surrounding the site of the first nuclear reactor in Jordan. *Journal of Radioanalytical and Nuclear Chemistry*. **314**(2), 1353-1360 (2017). doi:10.1007/s10967-017-5504-7
8. **Abdullah E. Alali**, Zaid B. Abulawi, Al Yaman M. Obeidat, Assessment of thermal performance improvement of GT-MHR by waste heat utilization in power generation and hydrogen

production. International Journal of Hydrogen Energy. 46 (44), 22719-22734. doi: 10.1016/j.ijhydene.2021.04.116

9. **Abdullah E. Alali**, Ala'a Al Tubeshat, Khaleel Al Khasawneh, Performance Analysis of Stirling Engine Double-Effect Absorption Chiller Hybrid System for Waste Heat Utilization from Gas Turbine Modular Helium Reactor. Submitted for the journal of Energy Conversion and Management.

### Thesis Directed

1. "Validation of RELAP-5 against Thermal Mixing Phenomenon Associated with MSLB using ROCOM Test Facility" A. Alwardat, T. Bani issa, 2015.
2. "Natural radioactivity detection during the pre-operational phase of JRTR" H. Alnaber, M. Obiedat, 2015.
3. "Simulation of direct steam injection into ADS-IRWST passive safety system using CFD code" K. harahsheh, I. Barakat, 2016.
4. "Feasibility of the Jordanian VVER-1000 nuclear reactor for water desalination" S. Alsmadi, A. Thaher, A. Hussein, 2017
5. "Investigation of Radon concentrations in Ain Janna's drinking water" Q. Horani, M. Momani, 2017.
6. "Performance improvement of SMR gas cooled reactor using mechanical chiller" Q. Bani yaseen, A. Alaroud and R. Jabali 2017.
7. "Heat utilization of spent fuel using nanofluid and Rankine cycle" G. Shkokani, L. Khalil 2018.
8. "Utilization of waste heat from GT-MHR in hydrogen production" Z. Abu lawi, A. Obeidat 2020.
9. "Performance analysis of novel stirling engine-double effect absorption chiller hybrid system for waste heat utilization from gas turbine modular helium reactor" A. Al Tubeshat. 2020.

## PERSONAL DEVELOPMENTS PROFILE

### PROFESSIONAL AFFILIATIONS

- Member of the Jordan Engineers Association, Jordan

### TRAINING, WORKSHOPS, and COURSES CONDUCTED

- **Innovative Systems Software (ISS) RELAP/SCDAPSIM Training workshop** for JUST nuclear engineering students. JUST campus, Irbid, Jordan, July 17-21, 2016.

- The Nuclear Security and Safeguards Symposium, Amman, Jordan, October 2016.
- Organize scientific trips to:
  - a. Jordanian Uranium Mining Company (JUMCO) for nuclear engineering students.
  - b. Electric power generation plants for mechanical engineering students.

#### PROFESSIONAL DEVELOPMENT WORKSHOPS and MEETINGS ATTENDED

- Training course on Nuclear safety, regulation and laws. Germany 2011.
- Training course on Energy, economics and policy. Germany 2011.
- Training course on Processes and organization of operation of nuclear power plants, decommissioning of nuclear installations. Germany 2011.
- International school in nuclear engineering- Thermal hydraulics and safety. France 2012.
- Workshop on E-learning Open Educational Resources. Academic Development and Quality Assurance Center (ADQAC), JUST, Irbid, Jordan, Sep. 17-18, 2014.
- Training course on High Temperature Gas Cooled Reactor Technology. Indonesia 2015.
- Joint ICTP-IAEA Training course on Physics and Technology of Water-Cooled Reactors through the use of PC-based Simulators. Trieste-Italy 2017.
- Technical meeting on The Deployment of Non-Electric Applications Using Nuclear Energy for Climate Change Mitigation. IAEA-Vienna-Austria 2018.
- Workshop on Contemporary Teaching Methods. ADQAC, JUST, Irbid, Jordan, 2018.
- Joint ICTP-IAEA 1st Course on Scientific Novelties in Phenomenology of Severe Accidents in Water-Cooled Reactors. Trieste-Italy 2018.

#### SOCIAL AND COMMUNITY ACTIVITIES

##### Academic/Administrative and Community Service:

- Member of Scientific Day Committee. College of Engineering JUST: Tasks include planning, inviting speakers, stationary and follow up on the daily activities.
- Supervised several site visits to local nuclear facilities and electric power plants in Jordan for undergraduate students, 2013-current.
- Participate in most university and department social activities.