

Curriculum Vitae

Mohammad Alrbai

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Education

- **West Virginia University, WV, USA August 2013-2016**
PhD, Mechanical Engineering, thermal science, GPA: 3.83
Ph.D. Dissertation "Modeling and Simulation of a Free-Piston Engine with Electrical Generator Using HCCI Combustion"
- **Jordan University of Science and technology, Irbid, Jordan October - 2011**
M.Sc., Mechanical Engineering. GPA: excellent (88.1/100).
M.Sc. Thesis "Closed form solution of Micro Cone-Plate Viscometer with slip flow"
- **Hashemite University, Zarqa, JORDAN January - 2009**
B.Sc. Mechanical Engineering. GPA: excellent (3.55/4).

Professional Experience

- Assistant Professor, Department of Mechanical Engineering, University of Jordan (UJ), Jordan, Fall 2016 - Present
- The Hashemite University, Zarqa, Jordan 2011-2013
Full time lecturer, Taught courses: Manual Engineering Drawing, AutoCAD.
- Jordan University of Science and Technology, Irbid, Jordan 2009-2011
Teaching assistant for different courses in Mechanical Engineering department, some are Thermodynamics, Heat and mass transfer, HVAC, Manufacturing Processes, and Machines Design.
- West Virginia University, WV, USA
Teaching assistant for Heat transfer & Fluid mechanics 2013-2014
Research assistant 2015-2016

Research Interests

- Combustion technology, nonconventional engines, Alternative and blended Fuels, Renewable Energy resources

Journal Publications and Peer-reviewed Conference Articles

- Impact of Exhaust Gas Recirculation on Performance and Emissions of Free-Piston Electrical Generator Fueled by DME, M Alrbai, BR Qawasmeh, Z Al-Hamamre, MS Sari, Y Taamneh Journal of Energy Engineering 144 (3), 04018027 (2018).
- Micro Scale Cone-Plate Viscometer with Slip Flow, K Bataineh, M Al Rabaei International Science and Technology Conference, North Cyprus (2010).
- Extreme Learning Machines for Solar Photovoltaic Power Predictions, S Al-Dahidi, J Ayadi, O, Adeeb, M Alrbai, B Qawasmeh, Energies 11 (10) (2018)

- Influence of hydrogen as a fuel additive on combustion and emissions characteristics of a free piston engine, M Alrbai, BR Qawasmeh, S Al-dahidi, O Ayadi, Thermal Science, accepted (2019)
- Forced convection heat transfer of Casson fluid in non-Darcy porous media, BR Qawasmeh, M Alrbai, S Al-Dahidi, Advances in Mechanical Engineering 11 (1),(2019)
- Free vibration characteristics of functionally graded Mindlin nanoplates resting on variable elastic foundations using the nonlocal elasticity theory, MS Sari, M Al-Rbai, BR Qawasmeh, Advances in Mechanical Engineering 10 (12),(2018).
- Thermal optimization of tapered pin fin exposed to nonuniform surface heat transfer coefficient, Y Taamneh, M Alrbai, R Sathyamurthy, Heat Transfer-Asian Research (2018).
- Evaluating the in-cylinder gas mixture homogeneity in natural gas HCCI free piston engine under different engine parameters using 3D-CFD analysis, MI Alrbai, BR Qawasmeh, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (40) (2018).
- Ensemble Approach of Optimized Artificial Neural Networks for Solar Photovoltaic Power Prediction, Sameer Al-Dahidi, Osama Ayadi, Mohammad Alrbai, IEEE Access (2019) 7 (1), 81741-81758
- Multi Cycle Modeling, Simulating and Controlling of a Free Piston Engine with Electrical Generator under HCCI Combustion Conditions, M Alrbai, M Robinson, N Clark, Combustion Science and Technology (2019), DOI: 10.1080/00102202.2019.1627340.
- Thermodynamic analysis of a biomass-fired lab-scale power plant, Jamil Al Asfar, Ahmad AlShwawra, Nabeel Abu Shaban, Mohammad Alrbai, Bashar R Qawasmeh, Ahmad Sakhrieh, Mohammad A Hamdan and Omar Odeh, Energy 194 (1) 2020.
- Non-Darcian Forced Convection Heat Transfer of Williamson Fluid in Porous Media, BR Qawasmeh, H Aldweri and M Alrbai, Journal of Porous Media, accepted.

Courses Taught

- Numerical Methods
- Fluid Mechanics I
- Thermal and Fluid Sciences
- Heat transfer I
- Turbomachinery
- Lab. of Thermal and Fluid Sciences
- Lab. of Fluid Mechanics
- Lab. of Strength
- Internal Combustion engines
- Power Plant
- Computer programming for Engineers

Profile

- Knowledge in various fields in mechanical engineering such as: Thermodynamic Analysis, Heat and Mass Transfer and Fluid Mechanics.
- Knowledge in computer skills using a range of software (including Ansys Fluent, ProEngineer, Matlab, AutoCAD, Microsoft office (Word, Excel, Power point...etc).
- Possessing excellent oral and written communication skills.

Awards and Scientific Societies

- Ministry of Higher Education & Scientific Research- Master Degree funding Dean honor list - Hashemite University, (Fall 2006- Fall 2009).
- University of Jordan, Ph.D scholarship, 2014-2016.