

Dr. H. Z. Hassan

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Editorial Board Member:
American Journal of Energy Engineering (AJEE)
<http://www.sciencepublishinggroup.com>

Academic Qualifications

Ph.D. Degree:	<p>Mechanical and Manufacturing Engineering, Schulich School of Engineering, University of Calgary, Calgary, Alberta, Canada, July 2012.</p> <p>Specialization: <i>Energy and Environment</i></p> <p>Thesis title: Development of a Solar-Driven Adsorption Cooling System for a Continuous Production of Cold.</p>
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Academic Experience

Career:	<p>(Sept. 2012) Assistant Professor of Mechanical Engineering, College of Engineering, Alfaisal University, Riyadh, KSA.</p> <p>(2009–2012) Teaching Assistant, Mechanical and Manufacturing Engineering, Schulich School of Engineering, University of Calgary, Alberta, Canada.</p> <p>(2009–2012) Research Assistant, Mechanical and Manufacturing Engineering, Schulich School of Engineering, University of Calgary, Alberta, Canada.</p> <p>(2006–2009) Teaching and Research Assistant, Mechanical Power Engineering, Zagazig University, Egypt.</p> <p>(1999–2006) Demonstrator and Research Assistant, Mechanical Power Engineering, Zagazig University, Egypt.</p>
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<p>Teaching Experience:</p> <p><i>More than 14 years of teaching experience in the following courses:</i></p>	<ul style="list-style-type: none"> ▪ Thermodynamics. ▪ Energy Conversion Principles. ▪ Heat and Mass Transfer. ▪ Refrigeration and Air Conditioning. ▪ Thermal Fluids Engineering. ▪ Mathematics. ▪ Fluid Mechanics. ▪ Hydraulic Machines. ▪ Gas Dynamics. ▪ Power Plant Technology. ▪ Gas Turbine Theory. ▪ Heat engines. ▪ Turbomachineries. ▪ Aerospace Propulsion. ▪ Computational Fluid Dynamics. ▪ Numerical Methods for Engineers. ▪ Multiphase Flows. ▪ Material Science and Engineering. ▪ Mechanics of Materials.

Research Experience

<p>Research Interests:</p>	<ul style="list-style-type: none"> ▪ Adsorption and Absorption Cooling. ▪ Analysis of Energy Conversion Systems. ▪ Solar Energy. ▪ Solar-Powered Refrigeration. ▪ Thermal and Cogeneration Systems. ▪ New and Renewable Energy. ▪ Computational Fluid Dynamics. ▪ Numerical Methods. ▪ Turbomachinery Performance Degradation. ▪ Erosion in Turbomachinery. ▪ Fouling in Turbomachinery. ▪ Particulate Flow.
<p>Recent Publications:</p>	<p><u>Recent peer review Journal papers</u></p> <p><u>(2013)</u></p> <ul style="list-style-type: none"> • H. Z. Hassan, A. A. Mohamad, Thermodynamic analysis and theoretical study of a continuous operation solar-powered adsorption refrigeration system. Energy 2013, Accepted paper. • H. Z. Hassan, M. H. Gobran, A. Abd El-Azim. Performance Prediction for the Fan of the CF6-50 Turbofan Engine at the Off-Design Conditions. International Review of Aerospace Engineering (I.RE.AS.E), 2013;6(1). • H. Z. Hassan, M. H. Gobran, A. Abd El-Azim. 3-D Flow Simulation through the Intake and Fan of Turbofan Engine at Take-off Conditions. International Review of Aerospace Engineering (I.RE.AS.E), 2013;6(1). • H. Z. Hassan. Effect of Parameters Variation on the Performance of Adsorption Based Cooling Systems. International Review of Mechanical

	<p>Engineering (IREME), 2013:7(1);24-37.</p> <ul style="list-style-type: none"> • H. Z. Hassan. A Solar Powered Adsorption Freezer: A Case Study for Egypt's Climate. International Journal of Energy Engineering, 2013: 3(1); 21-29. • H. Z. Hassan. Energy Analysis and Performance Evaluation of the Adsorption Refrigeration System. ISRN Mechanical Engineering, Volume 2013 (2013), http://dx.doi.org/10.1155/2013/704340. <p><u>(2012)</u></p> <ul style="list-style-type: none"> • H. Z. Hassan, A. A. Mohamad, and G.E. Atteia. "An algorithm for the finite difference approximation of derivatives with arbitrary degree and order of accuracy." Journal of Computational and Applied Mathematics 2012:236(10);2622-2631. • H. Z. Hassan, A. A. Mohamad "A review on solar-powered closed physisorption cooling systems." Renewable and Sustainable Energy Reviews, 2012: 16;2516-2538. • H. Z. Hassan, A. A. Mohamad, and H. A. Al-Ansary. "Development of a continuously operating solar-driven adsorption cooling system: Thermodynamic analysis and parametric study." Applied Thermal Engineering, 2012: 48;332-341. • H. Z. Hassan, A. A. Mohamad "A review on solar cold production through absorption technology" Renewable & Sustainable Energy Reviews, 2012:16(7);5331-5348. • H.Z. Hassan, A.A. Mohamad, and R. Bennacer. "Simulation of an Adsorption Solar Cooling System". Energy 2011;36(1);530-537. <p><u>Conference papers</u></p> <ul style="list-style-type: none"> • H. Z. Hassan, A.F. Abd El-Azim, and M. H. Gobran. "Three-Dimensional Flow in a Transonic Axial Flow Fan of a High Bypass Ratio Turbofan Engine." 11th International Conference on Aerospace Sciences and Aviation Technology (ASAT-11), Egyptian Ministry of Defense, The Military Technical College, May 2005. • H. Z. Hassan, A.F. Abd El-Azim, and M. H. Gobran. "Erosion of an Axial Flow Transonic Fan Due to Dust Ingestion." 12th International Conference on Aerospace Sciences and Aviation Technology (ASAT-12), Egyptian Ministry of Defense, The Military Technical College, May 2007.
<p>Recent Research Projects:</p>	<p>Theoretical and Experimental Design of a solar powered adsorption cooler under Saudi weather conditions. Internal Research Grants (IRG) 2012, Principle Investigator, Funding amount of 50,000 SAR, College of Engineering, Alfaisal University, Riyadh, KSA.</p> <p>Activated Carbon/Methanol Adsorption Cooling System Driven by a Novel Solar-Powered Heat Engine The National Plan for science, Technology and Innovation, King Saud University, (NPST Ref. No. 11-ENE1845-02), total</p>

	proposed budget of 1,369,000 SAR.
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Activities & Services:

Seminars and presentations:	<ul style="list-style-type: none"> ▪ Solar Cooling Technology: A Focus on Adsorption Cooling Systems. Department of Mechanical Engineering, King Saud University, Riyadh, KSA, April 23ed, 2013. ▪ Development of a Solar-Driven Adsorption Cooling System for a Continuous Production of Cold. Mechanical and Manufacturing Engineering, University of Calgary, Canada, June 18, 2012. ▪ Study on a Solar Adsorption Refrigeration (SAR) System for a Continuous Cold Production. Mechanical and Manufacturing Engineering, University of Calgary, Canada, March 26, 2012. ▪ Simulation of a Solar Adsorption Cooling System. Mechanical and Manufacturing Engineering, University of Calgary, Canada, March 4, 2010. ▪ Entropy Generation and Exergy Destruction CFD Analysis in a Transonic Axial Flow Fan of a High Bypass Ratio Turbofan Engine. Mechanical and Manufacturing Engineering, University of Calgary, Canada, November 2009. ▪
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Recognitions:

Reviewer: International Journals	<ul style="list-style-type: none"> ▪ Energy ▪ Renewable & Sustainable Energy Reviews ▪ Applied Thermal Engineering ▪ American Journal of Energy Engineering (AJEE) ▪ Journal of Energy and Natural Resources ▪ International Journal of Energy and Power Engineering
Editorial Board Member:	<ul style="list-style-type: none"> ▪ American Journal of Energy Engineering (AJEE) , http://www.sciencepublishinggroup.com ▪ Building Technology and Engineering Magazine, the Ministry of Municipal & Rural Affairs, Riyadh, KSA.
Workshops:	<ul style="list-style-type: none"> ▪ Teaching Workshop I - On Teaching Philosophy and Methodology, Al Faisal University, May 18, 2013. ▪ Advanced TA workshop, Calgary University, Fall 2010. ▪ The Occupational Health and Safety Course (OH&S), Calgary University, 4th February 2010. ▪ TA workshop, Calgary University, Fall 2009. ▪ Five professional teaching skills developing courses (20 hours for course) for faculty members and TAs, Zagazig University, 2006.
Awards	<ul style="list-style-type: none"> ▪ Queen Elizabeth II Doctoral award, 2012. ▪ Egyptian Scholarship for Ph.D. study, 2009.