

Personal Information

Name	Abdul Hai Alami
Date of Birth	3 rd April 1976
Place of Birth	Doha-Qatar
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Academic Qualifications

- **PhD Mechanical Engineering**, (Aug 2002-Jan 2006), Queen's University of Kingston, Ontario, Canada. Thesis title: "[Modeling, Instrumentation and Testing of an Injection Moulding Insert Built Using the Laminated Metal Tooling Process](#)"
- **MSc. Industrial Engineering**, (1998-2000).The University of Jordan-Amman. **Minor**: Design and Manufacturing.
- **BSc. Mechanical Engineering**, (1993-1998), Jordan University of Science and Technology-Irbid. **Minor**: Thermal Power.
- Qatari General Education Certificate (Tawjihi) in 1993. Average: **97.25%**.

Training courses/Reviewer role

- Course in Airbus 310 Airframe and Power Plant Systems (at Jordan Airline Training and Simulation Co.), 2002.
- Course in Instructional Techniques (at Jordan Airline Training and Simulation Co.), 2002.
- TOEFL: **273/300** in 2001.
- ISO 9000 Trained Auditor (El-Khatib Engineering) in 1998.
- Reviewer for:
 - Journal of Construction and Building Materials
 - Journal of Renewable and Sustainable Energy (American Institute of Physics)
 - Jordan Journal of Mechanical and Industrial Engineering
 - Energy Conversion and Management (Outstanding contribution in reviewing)
 - Journal of Energy
 - International Journal of Photoenergy
 - Solar Energy
 - Renewable Energy (Distinguished reviewer)

Language Skills

- Excellent command of English (Reading, Writing and Speaking)
 - French (good reading, fair written and spoken)
 - Arabic
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Professional Experience

1. Work as an **Associate Professor** at the Sustainable and Renewable Energy Engineering (SREE) Department at **University of Sharjah**, United Arab Emirates (February 2015-present)
2. Work as an **Assistant Professor** at the Sustainable and Renewable Energy Engineering (SREE) Department at **University of Sharjah**, United Arab Emirates (August 2012-January 2015)
 - **Teaching** the following courses:
 1. Introduction to Energy Science and Technology
 2. Introduction to Mechanical Engineering
 3. Engineering Graphics Design
 4. Engineering Materials
 5. Heat Transfer
 6. Heat Transfer lab
 7. Solar Thermal Systems
 8. Engineering Management
 9. Photovoltaic Technology and Manufacturing
 10. Energy Storage and Transmission
 11. Energy Storage and Transmission Lab
 12. Advanced Fluid Dynamics
 13. Internship (training) coordination course
 14. Senior Design Projects coordination course
 - **Research** (Concentrated solar energy in material removal, Green building and insulating materials, Solar steam turbines, PV cooling, mesoporous materials for PV cells and Optically-selective thermal absorbers).
 - Responsibility to **equip and augment** various SREE and mechanical engineering laboratories (Thermodynamics, Strength of Materials, Heat Transfer) with the most up to date equipment by preparing technical specification files and following up with local and international suppliers.
 - Served on SREE Faculty and Lab Engineer hiring committees
 - Served on Nuclear Engineering Faculty hiring committee
 - Served on the Engineering College Hiring Committee
 - Served on the Engineering College Teaching and Learning Committee
 - Served on the College of Engineering Student Welfare Committee
 - Served on University Committee for Student Affairs

3. Work as **Mechanical Engineering Faculty** at the **Higher Colleges of Technology**, Al Ain, United Arab Emirates (Sept 2010- August 2012). Duties include:
 - o **Teaching** the following courses:
 - i. Programmable Logic Controllers
 - ii. Materials Selection and Testing
 - iii. Mechanics of Materials
 - iv. Manufacturing Technology
 - v. Renewable Energy Systems
 - vi. Organizational Behavior
 - vii. Engineering Economics
 - o **Research:** (Manufacturing and Mechanical Energy Storage)
 - o Responsibility to **equip** various mechanical engineering laboratories (Thermodynamics, Strength of Materials, Automatic Control and Renewable Energy Laboratories) with the latest equipment by preparing technical specification files and following up with local and international suppliers.
 - o Worked on ABET accreditation for the Engineering Department in Al Ain Colleges.
4. Visiting **Assistant Professor** at **German Jordanian University**: Summer 2010.
5. Work as an **Assistant Professor** at the Mechanical Engineering Department, **Hashemite University**, Zarqa, Jordan (Feb 2006- Sept 2010). Duties include:
 - o **Teaching** the following courses:
 - i. Dynamics
 - ii. Computer-Aided Design (CAD)
 - iii. Computer-Integrated Manufacturing (CIM)
 - iv. Finite Element Method (FEM) in Machine Design,
 - v. Engineering Economy
 - vi. Mechanical Engineering Labs: (Mechanical Engineering Drawing, Strength of Materials, Fluid Mechanics),
 - o Being on The Mechanical Engineering Department Exams committee, Graduation projects committee and Curriculum committee.
 - o Supervising a multitude of graduation projects that dealt with manufacturing, Baja car design, glider design, solar thermal collectors, among many others (visit my website for a sample of a graduation project)
 - o Worked on ABET accreditation (course files and self-study report) for the Mechanical Engineering Department.
6. Work as a **Lead TA** at the Instructional Development Center (IDC) at Queen's University. Organized and led workshops for TAs from across Queen's campus in various topics dealing with TA development.
7. **TA duties** at Queen's University:
 - a. Engineering Graphics Lab (APSC161) Fall terms: 2002, 2003 and 2004.
 - b. Computer Integrated Manufacturing Lab (Mech 445) Winter terms 2002, 2003 and 2004.
8. Worked as a **Technical Instructor** at Jordan Airline Training and Simulation Co. (Sept 2001-Aug 2002). Training engineers and airline pilots from around the world in maintenance of mechanical systems and power plant of Airbus 310.
9. **TA duties** at the Manufacturing Processes Lab in The University of Jordan: Fall and Spring Terms 1999/2000 and Fall term 2000/2001.

10. Worked as a **Quality Control Engineer** and **Management Representative for Quality** (MRQ) at Moha Factory for Industrial Engineering (Feb 2001- Aug 2001). Applying the quality control policy of the factory onto the manufacturing processes at various departments of the factory, reporting to management and communicating with suppliers and customers regarding quality issues. This is in addition to monitoring and controlling production according to Quality control procedures.
 11. Worked as a **Business Manager** at Yarmouk Distribution Center (Feb 1999-May 2000). Administrative work and correspondence to import higher education books from India. Preparing inventory lists of books and order to various local libraries, universities and other governmental and private institutions.
 12. Worked as a **Quality Control Engineer** and **Project Planner** at Moha Factory for Industrial Engineering (Feb 1998-Jan 1999). Inspection of products at various stages of production at the factory under ISO 9002 clauses, preparing the monthly production plan using MS Project using CPM method for project management. Developed experience in Steel-sheet forming processes and CNC programming.
 13. 12-week **summer training** (Jun 1997- Sept 1997) at Moha Factory for Industrial Engineering. Preparatory work on the road to obtaining the ISO 9000 certification. Work included preparing illustrated list of machines, plant layout drawings for better production flow, and zone color-coding.
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Computer skills

- Productivity: MS Office (Word, Excel and PowerPoint) + Keynote
 - CAD and Modeling: AUTOCAD 2012, SolidEdge, ViaCAD and Pro/Engineer
 - FEM Modeling: ANSYS and COMSOL.
 - Mathematical Modeling: Maple and MATLAB
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Projects, Patents and Awards

- Mentored two teams from University of Sharjah at the Siemens into the four finalists in two categories “[Self-Sustained Sensor Systems](#)” and “[Next Generation of Grid Control - A Cellular Approach](#)”. The former team won first place and the \$25,000 prize, while the latter team won third place and a \$10,000 prize.
- Mentored University of Sharjah teams at the 4th Engineering Students Renewable Energy Competition (ESREC 2013) held at UAEU: one team for the poster: Non-conventional energy storage, and a prototype: buoyancy force energy storage.
- Won two prizes (Two separate entries) at the 2012 Unmanned Rodeo Systems held in Abu Dhabi, for Best Automated Landing and Best Team Spirit.
- Mentored a Mechanical Engineering students’ team from HCT Al Ain, representing UAE at Siemens Student Awards, achieving top ten finalists.
- Won Second and Third place prizes (Two separate entries) at the 2011 Unmanned Rodeo Systems held in Abu Dhabi.
- Applied for patent protection for the project of increasing the solar thermal capacity of solar collectors (patent number 50-2009 @ Jordan Ministry of Trade and Industry)
- Supervised a project for the design and manufacturing of a glider at the Hashemite University (cockpit and flight surfaces), 2007.

- Won first place at the *Jordan Engineers Association* competition for graduation projects (project: Design and Manufacture of a Mini Baja vehicle) 2008
 - Comprehensive study on Rapid Prototyping and Rapid Tooling for a PhD-level course.
 - Masters Thesis: Studying the Effect of the addition of microalloying elements on the fatigue life and strength of aluminum and its alloys
 - Study on corrosion resistance by metallic coating for Jordan Steel Mills, 1999
 - A study on Business-Process Reengineering, 1999
 - Design and Manufacture of a capacitive transducer to be used with a load-cell.
 - BSc. graduation project: Boiler production-design at Moha Factory in Jordan. Using the Critical Path Method (CPM): This project management technique was implemented as a case study at Moha Factory. The score was 90/100 for both theoretical and practical parts.
 - PLC ladder logic programming of a multi-station assembly line @ Automation Lab, University of Jordan.
 - Heating and cooling loads calculations of a restaurant, including the choice of equipment for heating, cooling and air systems (HVAC): term project, 1997.
 - Comprehensive study on Absorption Air Conditioning cycle for HVAC course
 - Optimization of the rotational moulding of plastic balls by studying the effects of various variables, e.g., rotational speed, temperature exposure and amount of plastic granular: Design term project 1997
 - Study of Cogeneration and its implementation in power stations, term project 1996
 - Project in factory management using the Just-in-time (JIT) system, term project 1996
 - Design of a multi-piston, positive displacement water pump, including balancing of components, choice of materials and submission of complete design drawings.
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Research interests

1. Manufacturing (laminated dies for injection moulding)
2. Material Testing (insulating materials from organic solid waste)
3. Solar Power (reactions steam turbines)
4. Solar Materials (optically selective solar thermal absorbers, mesoporous materials for dye-sensitized solar cells)
5. Energy Storage (Mechanical storage through buoyancy force and superconductor materials surface modification)
6. Solar Manufacturing (nonferrous ablation using concentrated solar power)

A separate Research and Teaching Statement is attached to the application.

Publications

- **Journal papers:**
- Abdul Hai Alami and Kamilia Aokal, Experiments on polymer welding via concentrated solar energy, *The International Journal of Advanced Manufacturing Technology*, accepted.
- Abdul Hai Alami, Mhd. Adel Assad, Kamilia Aokal, Bilal Rjab and Hussain Alawadhi, Application of Icosahedral Phase Compound for Mesoporous Layer Material in Dye-Sensitized Solar Cells, *Procedia Engineering 184C* (2017) pp. 616-624.
- Abdul Hai Alami, Bilal Rajab and Kamilia Aokal, Assessment of silver nanowires infused with zinc oxide as a transparent electrode for dye-sensitized solar cell applications, *Energy* (accepted).
- Abdul Hai Alami, Kamilia Aokal, Mhd. Adel Assad, Di Zhang, Hussain Alawadhi and Bilal Rajab, One-step synthesis and deposition of few-layer graphene via facile, dry ball-free milling, *MRS Advances*, (Accepted).
- **Book Chapter:** Abdul Hai Alami, Camilia Aokal and Monadhel Jabar Alchadirchy, *Exergy for Better Environment and Sustainability*, by Springer Nature (New York), in print.
- Abdul Hai Alami, Kamilia Aokal, Jehad Abed and Mohammad Alhemyari, Low pressure, modular compressed air energy storage (CAES) system for wind energy storage applications, *Renewable Energy 106* (2017) 201-211.
- Abdul Hai Alami, Camilia Aokal and Mhd Adel Assad, Facile and cost-effective synthesis and deposition of YBCO superconductor on copper substrates by high-energy ball milling, *Metallurgical and Materials Transactions A*, 12 (2016) 1073-5623.
- Abdul Hai Alami, Synthetic clay as an alternative backing material for passive temperature control of photovoltaic cells, *Energy*, 108 (2016) 195-200.
- Abdul Hai Alami, Jehad Abed, Meera Almheiri, Afra Alketbi and Camilia Aokal, Fe-Cu metastable material as a mesoporous layer for dye-sensitized solar cells, *Energy Science & Engineering*, Volume 4, Issue 2, pages 166–179, March 2016.
- Abdul Hai Alami, Di Zhang, Camilia Aokal, Jehad Abed, Ideisan Abu Abdoun and Hussain Alawadhi, Influence of magnetic field on the mesoporous structure of Fe-Cu compounds in dye-sensitized photovoltaic cells, *Metallurgical and Materials Transactions E: Materials for Energy Systems*, Vol. 3, No. 1, pp. 37-45, 2016.
- Abdul Hai Alami, Di Zhang, Camilia Aokal, Jehad Abed, Ideisan Abu Abdoun and Hussain Alawadhi, Fe-Cu Compounds in Dye-Sensitized Solar Cells: Influence of Magnetic Field on Mesoporous Structure, *International Journal of Thermal & Environmental Engineering*, Vol. 11, No.1 (2016), 67-72.

- Abdul Hai Alami, Afra Alketbi, Meera Almheiri and Jehad Abed, The Fe-Cu metastable nano-scale compound for enhanced absorption in the UV-Vis and NIR ranges, *Metallurgical and Materials Transactions E: Materials for Energy Systems*, Vol. 2, No. 4, pp.229-235, 2015.
- Abdul Hai Alami, Afra Alketbi, Meera Almheiri and Jehad Abed, Assessment of Al-Cu-Fe compound for enhanced solar absorption, *International Journal of Energy Research*, Vol. 40 (2016), pp.514–521.
- Abdul Hai Alami, Huma Bilal, Modeling and Verification of an Acrylic Adhesive as a Hyperelastic Material, *Advances in Materials and Processing Technologies*, Volume 1, Issue 1-2, 2015.
- Abdul Hai Alami, Experimental assessment of compressed air energy storage (CAES) system and buoyancy work energy storage (BWES) as cellular wind energy storage options, *Journal of Energy Storage*, Vol. 1 C, (2015), pp. 38-43.
- Tareq Salameh, **Abdul Hai Alami** and Sunden, Bengt, Experimental Investigation of the Effect of Variously–Shaped Ribs on Local Heat Transfer on the Outer Wall of the Turning Portion of a U-Channel inside Solar Air Heater, *Heat and Mass Transfer*, In press (2015).
- Abdul Hai Alami, Afra Alketbi and Meera Almheiri, Synthesis and microstructural and optical characterization of Fe-Cu metastable alloys for enhanced solar thermal absorption, *Energy Procedia*, 75 C, 410-416, 2015.
- Abdul Hai Alami, Microstructural, optical and thermal characterization of synthetic clay as a passive cooling medium, *Energy Conversion and Management*, Vol. 88C, pp. 442-446, 2014.
- A.H. Alami, Anis Allagui, and Hussain Alawadhi, Synthesis and optical properties of electrodeposited crystalline Cu₂O in the Vis-NIR range for solar selective absorbers, *Renewable Energy* 82 (2015) 21-25.
- A.H. Alami, Anis Allagui, and Hussain Alawadhi, Microstructural and optical studies of CuO thin films prepared by chemical ageing of copper substrate in alkaline ammonia solution, *Journal of Alloys and Compounds*, Vol. 617C, pp. 542-546, 2014.
- **Book Chapter:** A.H. Alami, Anis Allagui, and Hussain Alawadhi. Electrodeposited dendritic structures of copper oxide as solar selective absorbers in the UV–Vis range. In Mohammad O. Hamdan, Hassan A.N. Hejase, Hassan M. Noura, and Abbas A. Fardoun, editors, *ICREGA'14 - Renewable Energy: Generation and Applications*, Springer Proceedings in Energy, pages 505–512. Springer International Publishing, 2014.
- Anis Allagui, **Abdul Hai Alami**, Elena A. Baranova, and Rolf Wüthrich. Size- dependent capacitance of nickel oxide nanoparticles synthesized with contact glow discharge electrolysis, *Journal of Power Sources*, Vol. 262, pp. 178-182, 2014.

- Abdul Hai Alami, Assessment of Using Secondary Concentrators for Nonferrous Material Removal Applications, *Advanced Materials Research*, Vol. 939, pp. 506-513, 2014.
- Abdul Hai Alami, Experimental Investigation on Paraboloid Solar Concentrator with a Conical Secondary Concentrator, *International Journal of Energy Research*, Volume 38, Issue 14, pages 1896–1902, November 2014.
- Abdul Hai Alami, Analytical and experimental evaluation of energy storage using work of buoyancy force, *J. Renewable Sustainable Energy*, Vol. 6, 2, 2014.
- Abdul Hai Alami, Anis Allagui, Design and analysis of a compact solar-driven constant-torque reaction steam turbine, *Energy Conversion and Management*, Volume 79, 456-460, March 2014,
- Abdul Hai Alami, Effects of evaporative cooling on efficiency of photovoltaic modules, *Energy Conversion and Management*, Vol. 77, 668-679, 2014.
- Abdul Hai Alami and Huma Bilal, Experimental Evaluation of a Buoyancy Driven Energy Storage Device, *Advanced Materials Research* Vols. 816-817, 887-891, 2013.
- Abdul Hai Alami, Mechanical and Thermal Properties of Solid Waste-Based Clay Composites Utilized as Insulating Materials, *International Journal of Thermal and Environmental Engineering*, Vol. 6, No.2, 89-94, 2013
- Abdul Hai Alami, Experiments On Unfired Masonry Clay Bricks Mixed With Palm Fronds And Date Pits for Thermal Insulation Applications, *Journal of Renewable and Sustainable Energy*, Vol. 5, 2013, American Institute of Physics
- Abdul Hai Alami, Investigation in utilizing paraboloid concentrators for thermal perforation of metals, *Renewable Energy*, Vol. 56, 105-109, 2013
- Abdul Hai Alami, Investigation in Utilizing Buoyancy Forces for Mechanical Energy Storage, *International Journal of Advances and Trends in Engineering Materials and their Applications (IJATEMA) – ISSN 1916-5366*, Part C, IJATEMA, 1 (1) 2012, 51 - 60
- Abdul Hai Alami, Design and construction of a green, controlled-environment dwelling in Jordan, *International Journal of Thermal and Environmental Engineering*, Vol 3, No.1 (2011) 21-25
- Abdul Hai Alami, Experiments on solar absorption using a greenhouse-effect gas in a thermal solar collector, *Journal of Renewable and Sustainable Energy*, Vol. 2, No. 5, 2010
- Abdul Hai Alami, Experiments on Aluminum-Copper Alloys Properties as Solar Absorbers, *Jordan Journal of Mechanical and Industrial Engineering*, Vol.4, No. 6, 685-692, 2010.
- Abdul Hai Alami, Experiments on olive husk-addition to masonry clay bricks on their mechanical properties, and their application and manufacturability as an insulating material, *Advanced Materials Research* Vols. 83-86 (2009) pp 874-880.

- A. Alami, G. Zak, Embedded capacitive displacement sensing within laminated metal structures, AES Technical Reviews International Journal, Part B: IJAMAIM - International Journal of Advances in Mechanics and Applications of Industrial Materials, Vol. 1, No. 1, pp. 27-34, 2008.
- Chen, M., Al-Alami, A., and Zak, G., Design and Fabrication of Injection Mould Insert via Laminated Metal Tooling Process, Transactions of NAMRI/SME, Vol. 31, pp. 71-78, 2003.

- **Conferences:**

- Abdul Hai Alami, Anis Allagui and Hussain Alawadhi, Electrodeposited Dendritic Structures of Copper Oxide as Solar Selective Absorbers in the UV-Vis Range, The 3rd International Conference on Renewable Energy: Generation and Applications, United Arab Emirates University, Al Ain, March 2nd - 5th, 2014
- Abdul Hai Alami, Renewable Energy: Integrating Generation, Insulation, Storage and Application in manufacturing, World Future Energy Summit (WFES) 2013, Abu Dhabi, January 20-22, 2013
- Abdul Hai Alami, Younes Al Younes, Ravi Purushothaman Using Concentrated Solar Thermal Radiation for Material Removal Applications, The International Conference on Renewable Energy: Generation and Applications”, Al Ain, United Arab Emirates, 4-7 March 2012.
- Abdul Hai Alami, Traffic flow problem simulation in Jordan, Recent Researches in Engineering and Automatic Control, Vol. 2, December 10-12, 2011
- Abdul Hai Alami, Using Laminated Metal Tooling (LMT) in Die Manufacturing For Clay Moulding, IEEEExplore, Digital Object Identifier 10.1109/ISMA.2008.4648806, 5th International Symposium on Mechatronics and its Applications, Amman, Jordan 27-29 May 2008
- Al-Alami, A. and Zak, G., Finite Element Model of the Laminated Metal Tooling Injection Mould Insert, 14th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2004), Toronto, Ontario, July 2004.
- Adnan I. O. Zaid and AbdulHai M.B. Al-Alami, Experiments on the Effect of Vanadium on the Fatigue Life of Aluminum, 7th International Symposium on Advanced Materials, Islamabad, Pakistan, Sept 2001.
- Adnan I.O. Zaid and AbdulHai M.B. Al-Alami, The Effect of Vanadium Addition on the Fatigue Life of Aluminum, Grain Refined by Either Titanium or Titanium Plus Boron, 16th International Conference on Production Research (ICPR-16), Prague, Czech Republic, July 2001.