###### *C:\Users\Muhannad Aljarrah\Desktop\IMG_4076.jpg*MOHANNAD ALJARRAH, PhD, PDEng

*Mohannad Aljarrah, PhD, PDEng*

*Director*

*Center of Excellence for Innovative Projects*

*Assistant Professor*

*Department of Chemical Engineering*

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**Education**

* **Ph.D. Aug 2005-Dec 2009**

Chemical Engineering/Material Science and Nanotechnology

University of Akron, Akron, OH USA

Dissertation: “Modeling and Experimental Validation of Radiative Heat Transfer in Porous Nano-composites as Selective Emitters for Low Temperature Thermophotovoltaic Systems”

* **Professional Doctor in Engineering Jan 2003-May 2005**

Chemical Engineering: Process Design and Development

University of Twente, Enschede, the Netherlands

Dissertation: “Reactive Extraction of Gluconic Acid from Fermentation Broths”

Graduation Project: “Hydroformylation of 1-Octene using Heterogeneous Cobalt Catalyst Supported on Carbon Nanotubes”

* **B. Sc. Sep 1997-Jun 2002**

Chemical Engineering

Jordan University of Science and Technology, Jordan

Graduation project: “Modeling of Unit Operations”

**Professional Experience**

### General Director Sep 2019 – Current

Center of Excellence for Innovative Projects

Jordan University of Science and Technology

### General Director Sep 2019 – Current

UNICEF WASH Innovation HUB

UNICEF/JUST

### Assistant Professor

Chemical Engineering Department **Sep 2012 - Current**

Jordan University of Science and Technology

### Deputy Director Sep 2018 – Sep 2019

Center of Excellence for Innovative Projects

Manager of Innovation Incubator/Business Accelerator

Jordan University of Science and Technology

### Assistant Director Sep 2017 – Sep 2018

Center of Excellence for Innovative Projects

Manager of Innovation Incubator/Business Accelerator

Jordan University of Science and Technology

### Manager – Department of Linking with Industry Sep 2016 – Sep 2017

Consultative Center of Science and Technology

Jordan University of Science and Technology

### Visiting Researcher June 2013 – Sep 2013

MESA+ Nanolab

Twente University, The Netherlands

### Research Scientist June 2010-March 2013

General Electric Corporation (GE)/Saudi Basic Industrial Corporation (SABIC)

High Performance Materials Unit. Mt Vernon, Indiana, USA

* Technology owner of multi-million dollar technology effort focuses on evaluation and modification of current processes in the field of high performance polymer materials.
* Polymer nanofibers, micro- and nanoparticles and polymer composites
* Competitive market analysis for key polymer products and processes to develop business understanding of competitive technology.
* Monitoring of summer interns and less experienced staff in the technology department.

#### Post-doctoral Research Associate Jan 2010-June 2010

Warner Research Group/Chemistry Department

Louisiana State University, Louisiana, USA

* Conducted research in the field of dye sensitized solar cells under Dr. Isiah Warner, one of the most regarded names in the field of fluorescence spectroscopy, nanomaterials and environmental chemistry.
* Solar cell fabrication and testing including I/V measurements.
* Nanofiber synthesis and characterization. Synthesis of fluorescent nanoparticles.
* Mentoring graduate students.
* Writing grant proposals.

#### Research assistant Sep 2005-Dec 2009

Chemical Engineering Department

University of Akron, Akron, OH, USA

* Conducted research in the field of material science and nanotechnology.
* Fabrication of nano-composites as selective emitters for Themophotovoltaic applications.
* Synthesis and characterization of nanomaterials including polymer and ceramic nanofibers.
* Operating and maintenance of ultra-high vacuum instruments.
* Monitoring Master and undergraduate students.

##### R & D Engineer May 2004-May 2005

Research and Development Department

PURAC biochem, Gorinchem, The Netherlands

* Conceptual design, Aspen simulations, heat and mass balance, equipment design and specifications.
* Designed and directed lab scale experiments.
* Prepared basic engineering design packages.

**Funded Scientific Research as Principle Investigator**

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| 1. **Higher Council for Science & Technology**   **Support to Research and Technological Development & Innovation in Jordan, SRTD II. European Union Joint Fund.**  “Synthesis and Characterization of Novel Magnetic Nanoparticle Composites for Water Treatment and Metallurgical Applications” | **$40000** |
| 1. **Ministry of Higher Education**   **Scientific Research Fund (SRF)**  “Fabrication of Volumetric Receiver for Concentrated Solar Power Plants Using Electrospun Ceramic Nanofibers” | **$124000** |
| 1. **King Abdullah Fund for Development**   “Silica Coated Magnetic Nanoparticle Composites for Heavy Metal Extraction: Case Study: Uranium Mining in Jordan” | **$7100** |
| 1. **Jordan University of Science and Technology**   “Synthesis of High Temperature Ceramic Nanofibers for Renewable Energy Applications” | **$37000** |
| 1. **Jordan University of Science and Technology**   “Synthesis of Hard Magnets Using M-Ferrites Nanocomposites” | **$14000** |
| 1. **King Abdullah Fund for Development**   "Synthesis of Silica coated magnetic nanoparticles using silicic acid waste from fertilizer industry" | **$7100** |
| 1. **Jordan University of Science and Technology**   "Fixation of brominated organic compounds during thermal treatment of electronic board waste using metal oxide nanoparticles" | **$7850** |
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| ***Total Funding*** | ***$~237,050*** |

**Research and Scholarly Activities**

1. **Patents**

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| METHODS AND SYSTEMS FOR THE MANUFACTURE OF AN AROMATIC PHTHALIC BISIMIDE AND A POLYETHERIMIDE | | | |
| CROLL, Joshua McClellan; **ALJARRAH, Mohannad**; GUGGENHEIM, Thomas Link | | | |
| Pub. No.: | WO/2017/189314 | International Application No.: | PCT/US2017/028541 |

1. **Refereed Journal Articles**

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| 1. Bender, ET; Wang, R; **Aljarrah, MT**; Evans, Edward A; Ramsier, RD; ,Synthesis and characterization of erbia doped metal oxide nanofibers for applications in thermophotovoltaics,"Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films",25,4,922-926,2007,AVS |
| 1. Jittavanich, K; Clemons, CB; Kreider, KL**; Aljarrah, M**; Evans, Edward; Young, GW; ,"Modeling, simulation and fabrication of coated structures using the dip coating technique",Chemical Engineering Science,65,23,6169-6180,2010,Elsevier |
| 1. **Aljarrah, MT**; Wang, R; Evans, EA; Clemons, CB; Young, GW; ,Experimental characterization and modeling of a nanofiber-based selective emitter for thermophotovoltaic energy conversion: The effect of optical properties,Journal of Applied Physics,109,3,034306,2011,AIP |
| 1. **Aljarrah, MT**; Evans, EA; Hicks, J; Clemons, CB; Young, GW; ,Modeling of emission properties from a spatially distributed selective emitter,Journal of Applied Physics,109,3,034307,2011,AIP |
| 1. Wang, Ruofeng; Bender, Edward T; **Aljarrah, Mohannad T**; Evans, Edward A; Ramsier, Rex D; ,Nanofiber based er (iii) metal pyrochlore oxides: synthesis and characterization,MRS Online Proceedings Library Archive,1023,,,2007,Cambridge University Press |
| 1. **Aljarrah, Mohannad T**; ,Modeling and Experimental Validation of Radiative Heat Transfer in Porous Nanocomposites as Selective Emitters for Low Temperature Thermophotovoltaic Systems,,,,,2009,University of Akron |
| 1. **Aljarrah, Mohannad T**; Evans, Edward A; ,Erbia-Coated Quartz Fibers as a Selective Emitter for Low Temperature Tpv Applications,The 2008 Annual Meeting,,,,2008. |
| 1. Powe, Aleeta M; Das, Susmita; Lowry, Mark; El-Zahab, Bilal; Fakayode, Sayo O; Geng, Maxwell L; Baker, Gary A; Wang, Lin; McCarroll, Matthew E; Patonay, Gabor; Aleeta M. Powe, Susmita Das, Mark Lowry, Bilal El-Zahab, Sayo O. Fakayode, Maxwell L. Geng, Gary A. Baker, Lin Wang, Matthew E. McCarroll, Gabor Patonay, Min Li**, Mohannad Aljarrah**, Sharon Neal, Isiah M. Warner,"Molecular fluorescence, phosphorescence, and chemiluminescence spectrometry",Analytical chemistry,82,12,4865-4894,2010,American Chemical Society |
| 1. Al-Mahasneh, Majdi; **Aljarrah, Mohannad**; Rababah, Taha; Alu’datt, Muhammad; ,Application of hybrid neural fuzzy system (ANFIS) in food processing and technology,Food engineering reviews,8,3,351-366,2016,Springer US |
| 1. Al-Harahsheh, Mohammad; **Aljarrah, Mohannad**; Rummanah, Fahed; Abdel-Latif, Kameel; Kingman, Sam; ,Leaching of valuable metals from electric arc furnace dust—tetrabromobisphenol A pyrolysis residues,Journal of Analytical and Applied Pyrolysis,125,,50-60,2017,Elsevier |
| 1. **Aljarrah, Mohannad T**; Al-Saleh, Mohammed H; Al-Harahsheh, Mohammad; ,Fabrication and dielectric characterization of barium hexaferrite/UHMWPE composite for energy storage applications,Physica B: Condensed Matter,523,,45-51,2017,North-Holland |
| 1. Abdelal, Nisrin R; **Aljarrah, Mohannad T**; ,The effect of silicon carbide whiskers on the Mode I interlaminar fracture of carbon fiber composites,Ceramics International,44,3,2700-2708,2018,Elsevier |
| 1. Al-Harahsheh, Mohammad; Al-Otoom, Awni; **Al-Jarrah, Muhannad**; Altarawneh, Mohammednoor; Kingman, Sam; ,Thermal analysis on the pyrolysis of tetrabromobisphenol A and electric arc furnace dust mixtures,Metallurgical and Materials Transactions B,49,1,45-60,2018,Springer US |
| 1. Al-Harahsheh, Mohammad; **Aljarrah, Mohannad**; Al-Otoom, Awni; Altarawneh, Mohammednoor; Kingman, Sam; ,Pyrolysis kinetics of tetrabromobisphenol a (TBBPA) and electric arc furnace dust mixtures,Thermochimica Acta,660,,61-69,2018,Elsevier |
| 1. Al-Harahsheh, Mohammad; **AlJarrah, Mohannad**; Mayyas, Mohannad; Alrebaki, Muna; ,High-stability polyamine/amide-functionalized magnetic nanoparticles for enhanced extraction of uranium from aqueous solutions,Journal of the Taiwan Institute of Chemical Engineers,86,,148-157,2018,Elsevier |
| 1. Al-Mahsaneh, Majdi**; Aljarrah, Mohannad**; Rababah, Taha; Alu’datt, Muhammad; ,Using MR-FTIR and Texture Profile to Track the Effect of Storage Time and Temperature on Pita Bread Staling,Journal of Food Quality,2018,,,2018,Hindawi |
| 1. Bender, ET; Wang, R; **Aljarrah, MT**; Evans, EA; Ramsier, RD; ,Papers from the 53rd International Symposium of AVS-Applied Surface Science-Synthesis and characterization of erbia doped metal oxide nanofibers for applications in thermophotovoltaics,Journal of Vacuum Science and Technology-Section A,25,4,922-926,2007,"New York: Published for the Society by the American Institute of Physics, 1983-" |
| 1. Al-Harahsheh, Mohammad; Altarawneh, Mohammednoor**; Aljarrah, Mohannad**; Rummanah, Fahed; Abdel-Latif, Kameel; ,Bromine fixing ability of electric arc furnace dust during thermal degradation of tetrabromobisphenol: Experimental and thermodynamic analysis study,Journal of Analytical and Applied Pyrolysis,134,,503-509,2018,Elsevier |
| 1. **Aljarrah, MT**; Al-Harahsheh, Mohammad S; Mayyas, M; Alrebaki, Muna; ,In situ synthesis of quaternary ammonium on silica-coated magnetic nanoparticles and it’s application for the removal of uranium (VI) from aqueous media,Journal of environmental chemical engineering,6,5,5662-5669,2018,Elsevier |
| 1. **Aljarrah, Mohannad T**; Abdelal, Nisrin R; ,Improvement of the mode I interlaminar fracture toughness of carbon fiber composite reinforced with electrospun nylon nanofiber,Composites Part B: Engineering,in press,2019,Elsevier |