

# **Abdallah Almomani**

Assistant Professor  
Department of Aeronautical Engineering  
Jordan University of Science and Technology  
almomani0@just.edu.jo

## **Education.**

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### **Iowa State University of Science and Technology-Ames, Iowa**

PhD in Aerospace Engineering, December 2017.  
Master of Engineering in Aerospace Engineering, May 2017.  
Cumulative GPA: 3.88/4.00 (Excellent Rating)

### **Jordan University of science and Technology-Irbid, Jordan**

Bachelor of Science in Mechanical Engineering, January 2009  
Cumulative GPA: 84.2/100 (Excellent Rating)

## **Employment History.**

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### **June 2018- Now, Assistant Professor at Jordan University of Science and Technology**

#### **Jan 2010 – July 2012, Jordan Nuclear Regularity Commission, Jordan**

I worked as a Mechanical Engineer at the Nuclear Safety and Security Center. At this early stage, we were studying and preparing nuclear safety and security regulations to be used in licensing the first nuclear power reactor in Jordan.

#### **Feb 2009 – Dec 2009 King Abdullah II Design and Development Bureau, Jordan**

I worked as a Test and Evaluation Engineer at the internationally accredited Test and Evaluation Center, I participated in conducting independent evaluations and experiments on and for land vehicles, weapons, ammunition, military equipment and armor material testing according to worldwide military standards and reporting to the Design and Development Center for modifications.

## **Research Interest Areas**

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- Ionic polymer transducers
- Mechanics of Soft Materials
- Soft Electronics (Advanced Manufacturing and Mechanics)
- Functional Polymers and Polymeric Systems
- Biopolymers and Biocomposites

## **Teaching Experience at Jordan University of Science and Technology**

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**Strength of Materials AE 214:** Concepts of stress and strain, Stresses and displacements of axially loaded members, the state of stress and strain, Normal, bending, shear, and torsion stresses, Mechanical properties of materials, combined stresses, composite sections, Deflections: integration Method, Moment area method, Buckling of columns.

**Aircraft Structural Materials AE 332:** Structural materials in aircraft industry, Structure of crystalline solids, Imperfections in solids, Mechanical properties, Strengthening mechanisms,

Static and fatigue fracture, Phase diagram, Processing conditions-properties relationship, Creep, Corrosion, Introduction to composite materials.

**Aeronautics Lab I AE 444:** Basic measurements of aerodynamic forces and pressure distribution using low speed wind tunnel, Supersonic flow, flight demonstration, tunnel experiments, Aerospace propulsion (gas turbines), ramjets, etc.), Basic aircraft sensors.

**Aircraft Structures I AE 533:** Principles of stressed skin construction: materials and structural components of aircraft, Airworthiness and Airframe Loads, Bending, shear and torsion of open and closed thin-walled beams, Structural idealization, Stress analysis of aircraft components: wing spars and box beams, fuselages, wings, fuselage frames and wing ribs and laminated composite structures.

**Composite Materials AE 537:** Application of composite materials in aerospace industry, Fiber reinforced composites, Stress, strain, and strength of composite laminate, Failure criterion, Environmental effect, Design of composite structure.

**Machine Elements Design AE 431:** Static and fatigue failure theories, The analysis and design of machine elements including but not limited to shafts, screws, non-permanent joints, ball & roller bearings, and gears.

**Special Topics in Aeronautics:** Material evaluation, Various physical properties of materials that may be of interest for materials evaluation and the means for determining these properties by widely used and lesser used non-destructive evaluation methods. The methods will include: Overview of Visual Inspection (VT), Liquid Penetrant Testing (PT), Magnetic Particle Testing (MT), Review of Surface NDT Methods, Radiographic Testing (x-ray) ; (RT), Ultrasonic Testing (UT), Eddy Current Testing (ET), Thermal Testing (TT)

## **Publications**

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[Engineering ionic conductivity of ionomeric membranes: influence of Van der Waals volume of counterions and temperature](#) 2018  
A Almomani, L Granadillo, W Hong, R Montazami (Materials Research Express 5 (6), 065325)

[Influence of temperature on the electromechanical properties of ionic liquid-doped ionic polymer-metal composite actuators](#) 2017  
A Almomani, W Hong, W Hong, R Montazami (Polymers 9 (8), 358)

[Soft ionic electroactive polymer actuators with tunable non-linear angular deformation](#) 2017  
W Hong, A Almomani, Y Chen, R Jamshidi, R Montazami (Materials 10 (6), 664)

[Supporting Information Soft Ionic Electroactive Actuators with Tunable Non-Linear Angular Deformation](#)  
W Hong, A Almomani, Y Chen, R Jamshidi, R Montazami

- [Study of parameters dominating electromechanical and sensing response in ionic electroactive polymer \(IEAP\) transducers](#) 2017  
AM Almomani (PhD Dissertation)
- [Electrochemical and morphological studies of ionic polymer metal composites as stress sensors](#) 2017  
W Hong, A Almomani, R Montazami (Measurement 95, 128-134)
- [Influence of ionic liquid concentration on the electromechanical performance of ionic electroactive polymer actuators](#) 2014  
W Hong, A Almomani, R Montazami (Organic Electronics 15 (11), 2982-2987)
- [Ionic interactions of ionic membrane and polymer-metal nanostructures in ionic electroactive polymer soft actuators](#) 2014  
W Fong, A Almomani, C Meis, H Acar, R Montazami (ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 247)