

Mousa Javidani

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➤ **Education**

- **Ph.D. (Materials Science and Engineering)** 2010- 2015
Université Laval, Quebec, Canada
Thesis Title: “*Development of high temperature strength aluminum alloys for automotive diesel engine applications*”
- **M. Sc. (Materials Selection, Materials Science and Engineering)** 2005- 2008
Shiraz University, Shiraz, Iran
Thesis Title: “*Steel-making and thermo-mechanical processing of microalloyed steel*”
- **B. Sc. (Materials Science and Engineering, Extractive Metallurgy)** 2001- 2005
Sahand University of Technology, Tabriz, Iran

➤ **Industrial and Research Experiences**

- **Postdoctoral fellow** Nov. 2015- present
Department of Materials Science and Engineering, McGill University, Montreal, Canada
 - Additive manufacturing process of Al alloys.
- **Postdoctoral fellow** Apr. 2015- Oct. 2015
Department of Applied Sciences, Université du Québec à Chicoutimi, Chicoutimi, Canada
 - Study phase transformation and microstructure characterisation of Al-Si alloys containing Cu, Mg, Mo and Zr;
 - Development of a new solution heat treatment procedure for Al-Si-Cu-Mg based alloys.
- **Research assistant** 2010- 2015
Department of Materials Science and Engineering, Université Laval, Quebec, Canada
 - Study solidification, heat treatment, microstructure characterization and high temperature mechanical properties of Al-Si based alloys;
 - Evaluate hot tearing tendency of Al-Si alloys containing various Cu, Mg and Fe contents;
 - Modeling and computational thermodynamics (*Thermo-Calc*);
 - Skilled in operation and interpretation of materials characterization technics (e.g. SEM/EPMA/EBSD, XRD and DSC/DTA).
- **Project management and research coordination** 2006- 2010
Iran-Alloy-Steel-Company, (University and industry collaboration), Yazd, Iran
 - Coordinating a team to develop technical knowledge on steel-making and hot rolling of niobium- vanadium microalloyed steel (which led to mass production);
 - Study the mechanical properties and perform statistical-analysis to evaluate the effect of alloying elements (i.e. C, V, Nb and Mn) on mechanical properties of medium carbon steel;
 - Designing of heat treatment cycles for medium carbon steels
 - Analysis of microstructure, inclusion and fracture-surface using different characterization technics
 - Collaborating in resolving hot cracking problem in structural beam steel by modifying steel-making and pre-heating processes;
 - Working with different standards (e.g. ASTM, JIS, DIN).

Teaching Experiences

- Lecturer** 2008- 2010
 Hakim Sabzevari University, Sabzevar
 - **Courses Taught:** “Steelmaking”, “Metals-solidification”, “Casting-principles”, “Mechanical-metallurgy”, “Metallography”
- Adjunct lecturer** 2006- 2007
 Shahid Sadoogi College, Yazd
 - **Courses Taught:** “Extractive-metallurgy”, “Steelmaking”, “Die-casting”, “Metals solidification”
 - Mentoring and Supervising undergraduate students.
- Assistant teaching**
 - “Material Heat Transfer”, preparing solutions to the problems of the course, Université Laval; 2014
 - “Welding of metals”, Université Laval; 2013
 - “Metals solidification”, Shiraz University; 2006
 - “Physical metallurgy”, Sahand University of Technology. 2003

➤ Honors

- Winner of Graduate Scholarship of Rio-Tinto-Alcan (18,000\$), Université Laval; 2014
- Winner of excellent publication award, Faculty of science and engineering, Université Laval; 2014
- Winner of FRQNT scholarship (15,000\$); Aluminum Research Center (Regal), Université Laval; 2013
- Winner of MetSoc student poster award, Conference of Metallurgists (COM), Montréal, Canada; 2011
- Ranked as the top ten best industrial projects (among 400 applicants), “Mechanical Properties of Microalloyed Steel”, 7th Industries & Mines Research and Development Centers’ Conference, Iran; 2007
- Ranked 101th among more than 3000 materials science and engineering graduates, the nationwide M.Sc. entrance exam, Iran; 2005
- Ranked 1900th among more than 400,000 high-school math & physics students, the nationwide B.Sc. entrance exam, Iran. 2001

➤ Community involvement and volunteer activities

- member of professional engineering society of Quebec (OIQ); 2015
- Reviewer of journal of Canadian Metallurgical Quarterly; 2015
- Volunteer executive committee, Conference of Metallurgists (COM), Toronto, ON, Canada; 2015
- Vice president, Association of Graduate Students of Mining, Metallurgical and Materials engineering department, Université Laval, Canada; 2012-2014
- Executive committee (online-membership/program chair), ASM Quebec Chapter, Université Laval, Canada. 2011-2015

➤ Specific Competencies

- Languages:** English, French, Persian, Azerbaijani, Turkish;
- Computer skills:** Thermo-Calc, Image analysis (Clemex and Image-J), Microsoft-Office, Adobe-Photoshop, Adobe-Illustrator, MS-Visio, Origin-Lab, AutoCAD/ ABAQUS/ MATLAB (notions).

➤ Scientific Publications

■ Journal papers:

- “Dissolution of Cu/Mg Bearing Intermetallics in Al-Si Foundry Alloys Containing Different Cu and Mg Content” (submitted to MMTA); ...
- “Mathematical analysis of the heat measured by a power compensated differential scanning calorimeter during the solidification of a multiphase alloy”, *Journal of Thermal Analysis and Calorimetry*, 1-9; 2015
- “Assessment of post-eutectic reactions in multicomponent Al-Si foundry alloys containing Cu, Mg and Fe”, *Metallurgical and Materials Transactions A*, (46) 2933-2946; 2015
- “Evolution of Intermetallic Phases in Multicomponent Al-Si Foundry Alloys Containing Different Cu, Mg and Fe Content”, *AFS Transaction* (14-056); 2014
- “Application of Cast Al-Si Alloys in Internal Combustion Engine Components”, *International Materials Reviews*, Vol. 59(3), pp. 132-158; 2014
- “Phase Formation in As-Solidified and Heat-Treated Al-Si-Cu-Mg-Ni Alloys: Thermodynamic Assessment and Experimental Investigation”, *Journal of Alloys and compound*, Vol. 551, pp. 596–606; 2013
- “Hot Deformation Behavior of Nb-V Microalloyed Steel”, *Journal of Mechanical Engineering Research* Vol. 2(5), pp. 92-96; 2010
- “Effect of thermo-mechanical parameters on microstructure and mechanical properties of microalloyed steels”, *Braz. J. Phys.*, Vol. 40 (4): p. 454-458; 2010
- “The Physical Simulation of Hot Deformation and Microstructural Evolution for 42CrMo4 Steel Prior to Direct Quenching”, *Journal of Iron and Steel Research*; 2009
- “Nano- Scale Localized Corrosion Studies of EN AW- 3003 Al Alloy by SEM-EDS, SKPFM and in-Situ AFM”, *Iranian Journal of Materials Science & Engineering* Vol. 6, Number 3, summer. 2009

■ Patent:

- “Production of Niobium Microalloyed Steel (Industrial Scale)”, 51778, Iranian Inventions Registration Organization. 2008

■ Featured conference papers:

- “Assessment of hot tearing sensitivity in Al-Si based foundry alloys”, *Conference of Metallurgists (COM)*, Toronto, ON, Canada; 2015
- “Investigation of Hot Deformation Behavior of Nb-V Microalloyed Steel”, *Hot forming of steels & product properties*, Grado, Italy; 2009
- “Hot Deformation Behavior of Alloy 28 Stainless Steel”, *5th International Materials Symposium*, Lisbon, April;; 2009
- “Mechanical Properties Modification of Structural Beam Steel”, *Steel Symposium*, Iran; 2008
- “Effect of Chemical Composition on Mechanical Properties of Microalloyed Steels”, *Steel Symposium*, Iran; 2008
- “Investigation of Mechanical Properties of Nb-V Microalloyed Steel”, *10th congress of the Iranian Metallurgical Engineering society*, Iran. 2007
- “Production of Nb-V Microalloyed Steels”, *10th congress of the Iranian Metallurgical Engineering society*, Iran, October. 2007