Personal Information:

Mohammad Hasan Daneshifar

Ph.D. in Materials Engineering

Assistant Professor (since **2016**)

Department of Polymer and Materials Engineering,
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Previously known as Mohammad Hasan Avazkonandeh-Gharavol

Education:

2001 – 2005	**B.Sc.**	**Materials Engineering (**Industrial Metallurgy**)**
		Sahand University of Technology, Tabriz, Iran.
	Thesis Title:	Studying Advanced Surface Heat Treatment of Steels
	Supervisor:	Prof. Rasul Azari Khosroshahi
	Thesis Grade:	19.5 (out of 20)
	GPA:	17.15 (out of 20) (First Class Honors)
2005 – 2008	**M.Sc.**	**Materials Engineering (**Characterization, Selection, and Manufacturing Methods of Materials**)**
		Ferdowsi University of Mashhad, Mashhad, Iran.
	Thesis Title:	Effect of Copper and Chromium on the Microstructure and Mechanical Properties of Low Alloy Steel Weld Metals in Manual Metal Arc welding
	Supervisor:	Profs. Ali Haerian-Ardakani & Mohsen Haddad-Sabzevar
	Thesis Grade:	19.5 (out of 20)
	GPA:	18.63 (out of 20)
2008 – 2014	**Ph.D.**	**Materials Engineering (**Characterization, Selection, and Manufacturing Methods of Materials**)**
		Ferdowsi University of Mashhad, Mashhad, Iran.
	Thesis Title:	Effect of Cooling Rate on the Microsegregation in Aluminum Alloys
	Supervisor:	Prof. Mohsen Haddad-Sabzevar
	Thesis Grade:	19.75 (out of 20)
	GPA:	19.12 (out of 20) (First Class Honors)
2012	**Visiting researcher**	**Casting Division**, Royal Institute of Technology (**KTH**), Stockholm, Sweden
	Supervisor:	Prof. Hasse Fredriksson

Research Interests:

- Welding
- Solidification of Metals and Alloys
- Thermal Analysis of Metallic Materials
- Structure-Properties Relationship
- Development of Light Alloys
- Friction Stir Processing (FSP)

Teaching Experience:

Master Courses:

- Special Topics (Thermal Analysis)
- Simulation in Materials Engineering
- Phase Transformation

Under-Grad Courses:

- Casting I (Casting Technology)
- Casting II (Ferrous and Non-Ferrous Alloys Casting)
- Welding Metallurgy
- Heat Treatment of Steels
- Selection of Metallic Materials
- Introduction to the History of Materials Engineering and Metallurgy
- Materials Science (Dept. of Mechanical Eng.)
- Solidification Lab
- Metallography Lab
- Principles of Metallography
- Technical Drawing

Publications:

Journal Papers

No.	Authors:	Paper Title:	Journal Title:	Date:
1	M.H. Avazkonandeh, M. Haddad-Sabzevar, A. Haerian	Effect of Chromium Content on the Microstructure and Mechanical Properties of Multipass MMA, Low Alloy Steel Weld Metal	Journal of Materials Science	44 (2009) 186–197
2	M.H. Avazkonandeh, M. Haddad-Sabzevar, A. Haerian	Effect of Copper Content on the Microstructure and Mechanical Properties of Multipass MMA, Low Alloy Steel Weld Metal Deposits	Materials & Design	30 (2009) 1902–1912
3	M.H. Avazkonandeh, M. Haddad-Sabzevar, A. Haerian	Effect of Chromium Content on the Microstructure and Inclusion Formation in Multipass MMA, Low Alloy Steel Weld Metal (in Persian)	Journal of Materials and Metallurgical Engineering	21 (2) (2011) 13–28
4	M.H. Avazkonandeh, S.A. Sajjadi, *et al*.	Effect of heat treatment of nanodiamonds on the scratch behavior of polyacrylic/ nanodiamond nanocomposite clear coats	Progress in Organic Coatings	76 (2013) 1258–1264
5	M.H. Avazkonandeh, S.A. Sajjadi, *et al*.	A Comparative Study on the Effect of Type of Reinforcement on the Scratch Behavior of a Polyacrylic-Based Nanocomposite coating	Journal of Coatings Technology and Research	10 (2013) 255-261
6	A. R. Valizadeh,	The Influence of Cooling Rate on the Microstructure and Micro-segregation in Al–	Metallography, Microstructure, and	2 (2013) 107-112

	A. R. Kiani, M. H. Avazkonandeh, E. Z. Karimi	30Sn Binary Alloy	Analysis	
7	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Effect of partition coefficient on microsegregation during solidification of aluminium alloys	International Journal of Minerals, Metallurgy, and Materials	21 (2014) 980-989
8	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	On the Microsegregation of Al-Mg Alloys by Thermal Analysis and Numerical Modeling	Journal of Alloys and Compounds	610 (2014) 462-471
9	M. Dehnavi, M. Haddad-Sabzevar, M.H. Avazkonandeh	Cooling Curve Analysis in Binary Al-Cu Alloys: Part II - Effect of Cooling Rate and Grain Refinement on the Thermal and Thermodynamic Characteristics	Metallurgical and Materials Engineering	21 (2015) 207-221
10	M. Dehnavi, M. Haddad-Sabzevar, M.H. Avazkonandeh, H. Vafaeenezhad	Effect of Cooling Rate and Grain Refinement on the Microsegregation in Al-4.8 wt.% Cu Alloy	Iranian Journal of Materials Science and Engineering	12 (2015) 62-70
11	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Experimental analysis of Partition Coefficient in Al-Mg Alloys	Iranian Journal of Materials Science and Engineering	13 (2016) 62-72
12	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Analysis of phase diagram and diffusion coefficient for modeling of microsegregation	Journal of Materials Science	52 (2017) 1446–1460
13	M.H. Avazkonandeh, M. Haddad-Sabzevar	On the Microsegregation in Al-Cu Alloys by Thermal Analysis and Numerical Modeling (in Persian)	Journal of Materials and Metallurgical Engineering	28 (1) (2017) 51-72
14	M.H. Daneshifar, S.A. Sajjadi, et al	The effects of fillers on properties of automotive nanocomposite clear coats: Type, content and surface functionalization	Progress in Organic Coatings	134 (2019) 33-39
15	F. Taherimanesh, B. Koroji, M.H. Dneshifar	Effect of Stirring Temperature on the Primary Si Morphology, Hardness and Wear Behavior of Al-20%Si Alloy Prepared by Semi-Solid Casting Route (in Persian)	Founding Research journal	2019
16	M.H. Daneshifar, A. Papi, M. Alishahi	Fabrication of Al-Si/Mg_2Si in-situ composite by friction stir processing	Materials Letters	282 (2021) 128832
17	Gh. Asrari, M.H. Daneshifar, S.A. Hosseini, M. Alishahi	Fabrication of Al-Mg solid solution by friction stir selective alloying	Materials Letters	308 (2022) 131073
18	M.H. Daneshifar M.A. Jabbareh	Numerical Modeling of the Complex Link Between Grain Refinement and Microsegregation in Binary Alloy Solidification	Metallurgical and Materials Transactions A	2021

Conference Papers

No.	Authors:	Paper Title:	Conference Title:	Date:
1	M.H. Avazkonandeh, M. Haddad-Sabzevar, A. Haerian	Effect of Cr Content on the Toughness of Multipass Low Alloy Steel Welds (in Persian)	9th National Conference on Welding and Inspection	October 22-23, 2008, Isfahan, Iran
2	M.H. Avazkonandeh,	Effect of Cu Content on the Microstructure	9th National	October 22-23, 2008,

	M. Haddad-Sabzevar, A. Haerian	and Inclusion Formation in Multipass Low Alloy Steel Welds (in Persian)	Conference on Welding and Inspection	Isfahan, Iran
3	S.A. Sajjadi, S.M. Zebarjad, M.H. Avazkonandeh, M. Mohammadtaheri, M. Abbasi, K. Mossaddegh	Effects of different dispersing processes on the structure of polyacrylic/nanodiamond nanocomposites coatings (in Persian)	iMAT 2010	November 15-16, **2010**, Iranian University of science and Technology, Tehran, Iran
4	M. Mohammadtaheri, S.A. Sajjadi, S.M. Zebarjad, M.H. Avazkonandeh, M. Abbasi	Surface modification of detonation nanodiamond	14th Iranian Physical Chemistry Conference	February 25-28, **2011**, University of Tehran, Kish
5	S.A. Sajjadi, S.M. Zebarjad, M.H. Avazkonandeh, M. Mohammadtaheri, M. Abbasi, K. Mossaddegh	Effect of Surface Functionalization of Detonation Nano-Diamond on the Scratch Resistance of Acrylic/Nano-Diamond Nano-Composite Prepared by Wet Milling (in Persian)	12th National Conference on Surface Engineering	May 10-12, **2011**, Isfahan, Iran
6	S.A. Sajjadi, S.M. Zebarjad, M.H. Avazkonandeh, M. Mohammadtaheri, M. Abbasi, K. Mossaddegh	Effect of Nano-Diamond Content and Sonication Time On the Scratch Resistance of the Acrylic/Nano-Diamond Nano-Composite Coating Produced by Sonication (in Persian)	12th National Conference on Surface Engineering	May 10-12, **2011**, Isfahan, Iran
7	E. Ahmadzade-Beiraki, V. Ayati, M. Haddad-Sabzevar, M.H. Avazkonandeh	Effect of Welding Current on the Formation of Inclusions and Evolution of Microphases in C-Mn Steel Weld Metals Produced by MMAW Technique (in Persian)	4th Iranian Pipe and Pipeline Conference	September 29-30, **2012**, Tehran, Iran
8	M. Dehnavi, M. Haddad-Sabzevar, M.H. Avazkonandeh	Effect of Cooling Rate on the Microstructure and Thermal Analysis Characteristics in Al-Cu Alloys (in Persian)	iMAT 2013	October 30-31, **2013**, Semnan University, Semnan, Iran
9	M. Dehnavi, M. Haddad-Sabzevar, M.H. Avazkonandeh	Effect of Cooling Rate and Grain refinement on the Thermal and Thermodynamic Characteristics of Al-Cu Alloys	iMAT 2013	October 30-31, **2013**, Semnan University, Semnan
10	M. Dehnavi, M. Haddad-Sabzevar, H. Vafaeenezhad, M.H. Avazkonandeh	Effect of Cooling Rate and Grain Refinement on the Microsegregation in Al-4.8 Wt.% Cu Alloy	IIAC 2014	25-26 May **2014**, Olympic Hotel, Tehran
11	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Experimental Analysis of Partition Coefficient in Al-Mg Alloys	IIAC 2014	25-26 May **2014**, Olympic Hotel, Tehran
12	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Modeling of non-Equilibrium Solidification of Aluminium-Copper Alloys	IIAC 2016	11-12 May **2016**, Olympic Hotel, Tehran
13	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Fredriksson	Dynamic Nature of Diffusion during Solidification	IIAC 2016	11-12 May **2016**, Olympic Hotel, Tehran
14	M.H. Avazkonandeh, M. Haddad-Sabzevar, H. Gholami, E.Z. Karimi	Effect of Cooling Rate on the Microstructure of the 30MSV6 Vanadium Bearing Microalloyed Steel Weld Metal Welded by Shielded Metal Arc Welding (in Persian)	iMAT 2016	November 8-9 **2016**, Shiraz University, Shiraz, Iran
15	M.H. Avazkonandeh,	Effect of coarsening of the Secondary	iMAT 2016	November 8-9, **2016**,

	M. Haddad-Sabzevar	Dendrite Arms on the Microsegregation in Binary Aluminum-Copper Alloys (in Persian)		Shiraz University, Shiraz, Iran
16	M.H. Avazkonandeh, M. Haddad-Sabzevar	Effect of Cooling Rate on the Microstructure and Microsegregation in Al-Mg Alloys (in Persian)	3rd National Conference on Materials Engineering, Chemistry Engineering and Industrial Safety	October 11-12, **2017**, Esfarayen Higher Education Complex, Esfarayen, Iran
17	M.H. Daneshifar, M.A. jabbareh	Effect of Inoculation on the microsegregation in Al-Cu Binary alloy: Experimental study and Phase Field Simulation (in Persian)	4th National Conference on Materials Engineering, Chemistry Engineering and Industrial Safety	October 11-12, **2018**, Esfarayen Higher Education Complex, Esfarayen, Iran
18	M.H. Daneshifar, Pouria Oveysi, Moeen Ghuchani	Effect of Initial Cast Microstructure and number of FSP Passes on the Final Microstructure and Hardness of Cast A356 Al-Si Alloy (in Persian)	4th National Conference on Materials Engineering, Chemistry Engineering and Industrial Safety	October 11-12, **2018**, Esfarayen Higher Education Complex, Esfarayen, Iran
19	M.H. Daneshifar, Pouria Oveysi, Moeen Ghuchani	Effect of Initial Cast Microstructure and Tool Rotational Speed on the Microstructure and Hardness of A356 Alloy Processed by FSP Technique (in Persian)	iMAT 2018	October 9-10, **2018**, Tehran, Iran
20	F. Taherimanesh, B. Korojy, M.H. Daneshifar	Effect of Stirring Temperature on the Primary Si Morphology and Hardness of the Al-20%Si Hypereutectic Alloy Prepared by Semi-Solid Casting Route (in Persian)	iMAT 2018	October 9-10, **2018**, Tehran, Iran
21	F. Monji, M. Moshakhas, M. Elhami, M.A. Jabbareh, M.H. Daneshifar	Thermodynamic Modelling of Binary Nano-Alloys phase diagram (in Persian)	iMAT 2018	October 9-10, **2018**, Tehran, Iran
22	S.R. Hosseini, M.H. Daneshifar, M. Alishahi, G. Asrari	Fabrication of Al/Mg Surface Solid Solution by Friction Stir Processing (in Persian)	20th ISSST	February 4-5, **2020**, Isfahan, Iran
23	A. Shekari, M.H. Daneshifar, A. Allahbakhsh, Z. Jamili	Fabrication of A356/Gr Composite by Friction Stir Processing (in Persian)	iMAT 2020	November 10-11, **2020**, Tehran, Iran
24	M.A. Jabbareh, M.H. Daneshifar	Thermodynamic Simulation of Melting Point of Bulk Nano-Structure Metals (in Persian)	iMAT 2020	November 10-11, **2020**, Tehran, Iran
25	Y. Baniasadi, M.A. Jabbareh, M.H. Daneshifar	Fabrication and Characterization of High Concentration Light Multicomponent AlMgMnSnZn Alloy (in Persian)	iMAT 2021	November 17-17, **2021**, Tehran, Iran

Awards:

2008	Best Researcher (Master Student), Ferdowsi University of Mashhad
2010	Best Researcher (PhD Student), Ferdowsi University of Mashhad

℘ *Thesis Supervised*:

M.Sc. Thesis:

1. Effect of Tin content and semi-solid processing content on the wear resistance of Al-Si hypereutectic alloys
2. Effect of Friction Stir Processing on Microstructure and Mechanical Properties of Fe-Bearing Cast Al–Si Alloy
3. Fabrication of Al/Mg solid solution on pure aluminum surface by friction stir alloying
4. Effects of Friction Stir Welding Parameters on the Microstructure and Mechanical Properties of Dissimilar Aluminium Alloys
5. Study the Tribological Properties of Al-Si/Graphite Composite Fabricated by Friction Stir Processing Technique