# *Curriculum Vitae*

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## Personal Details:

**Full Name:** Mohsen Karimi

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## Education and Qualifications:

**2009 – 2014: Ph.D.**, Materials Engineering, Isfahan University of Technology,
Doctoral dissertation: Mechanical and Microstructural Evaluation of nanostructured Ti–SiC Composites Produced by Accumulative Roll Bonding Process
**2006 – 2009: M.Sc.**, Materials Engineering, Isfahan University of Technology,
Master's thesis: Evaluation of Annealing Parameters in Cold Rolling–Annealing Thermomechanical Process for Producing Nano-Structured 301 Stainless Steel
**2002– 2006: B.Sc**., Materials Engineering, Chamran University, Ahvaz,
Bachelors project: Investigation of wear properties for Al–Si eutectic alloy used in automotive industry.

## Expertise:

- Mechanical properties of materials
- Processing and characterization of ultrafine/nanostructure bulk metals
- Metallurgy of metal forming
- Engineering failure analysis
- Heat treatment of metals
- Materials selection (steels)

## Teaching Experiences:

- Mechanical properties of materials
- Metals forming
- Physical chemistry

- Materials science
- Non-ferrous alloys
- Manufacturing processes for engineering materials
- Composite materials
- manufacturing processes for composite materials

**Masters Theses (supervisor/advisor):**

- Rasool Naderi (2019), "Microstructure and mechanical properties of friction stir processed AA5456-O /$SiO_2$ nanocomposite", MSc Thesis, Shahrood University Of Technology, Mostafa Hajian Heidary[Supervisor/Supervisors], Mohsen Karimi, Ali Reza Ahmadi[Advisor/ Advisors]

- Sara Kamkar (2019), " Assessing of Corrosion, biological and tribological behavior of double-layer nitride coating on Ti-6Al-4V alloy by plasma nitriding method and cathodic arc evaporation", MSc Thesis, Shahrood University Of Technology, Mohsen Karimi[Supervisor/Supervisors], Majid Salehi[Advisor/ Advisors]

- Mahla Seif Zadeh Omrani (2019), "Effect of nanostructured AISI 301 stainless steel substrate on mechanical, tribological and corrosion properties of TiN coating", Msc Thesis, Shahrood University Of Technology, Mohsen Karimi, Mansoor Bozorg[Supervisor/Supervisors]

- Amir Kaviani (2021), "Evaluation of corrosion and tribological properties of TiB2/Cu coating applied on 304 austenitic stainless steel by PVD", MSc Thesis, Shahrood University Of Technology, Mohsen Karimi, Mansoor Bozorg[Supervisor/Supervisors], Marzieh Abbasi [Advisor/ Advisors]

- Mostafa Dangchi, "Evaluation of microstructure, mechanical and corrosion properties of Al/YSZ composite produced by accumulative roll bonding", MSc Thesis, Shahrood University Of Technology, Mohsen Karimi, Mansoor Bozorg[Supervisor/Supervisors]

- Abolfazl Sharifinia, "Evaluation of microstructure, mechanical and corrosion properties of Al/$ZrC_p$ composite produced by accumulative roll bonding", MSc Thesis, Shahrood University Of Technology, Mansoor Bozorg, Mohsen Karimi [Supervisor/Supervisors]

- Elahe Ayoubi, "Investigating the effect of additives on the properties of ceramic cores used for single crystal and directional solidification blades", MSc Thesis, Shahrood University Of Technology, Mohsen Karimi, Mansoor Bozorg[Supervisor/Supervisors], Amir Mahdi Shabani, Salahoddin Isafi [Advisor/ Advisors]

- Majid Yahyaee, "Production of cramic pigments from industrial waste matrials to use in tile glazes", MSc Thesis, Shahrood University Of Technology, Arash Yazdani, Mohsen Karimi [Supervisor/Supervisors]

**Publications:**

**Journals:**

1. **Mohsen Karimi**, Mansoor Bozorg, "Wear behavior of laminated nanostructured CP-Ti sheets fabricated by severe plastic deformation", Materials Chemistry and Physics, 290 (2022) 126634. https://doi.org/10.1016/j.matchemphys.2022.126634.

2. Mahla Seif Zadeh Omrani, **Mohsen Karimi**, Mansoor Bozorg, "Characterization and comparison of TiN coatings deposited on coarse- and nano-grained substrates", metals and materials international, 28 (2022) 1-12. https://doi.org/10.1007/s12540-022-01233-5.

3. Sara Kamkar, Majid Mohammadi, **Mohsen Karimi**, Majid Salehi, "Electrochemical and biological properties of mono- and bilayer nitride coatings deposited on Ti-6%Al-4%V alloy", materials chemistry and physics, 286 (2022): 126185. https://doi.org/10.1016/j.matchemphys.2022.126185.

4. Rasoul Naderi, Mostafa Hajian Heidary, **Mohsen Karimi**, Alireza Ahmadi, "Microstructure and mechanical properties of AA5456/$SiO_{2p}$ nanocomposite fabricated by friction stir processing", Iranian Journal of Manufacturing Engineering, 7 (2020) 39-47. (in Persian)

5. S. Kamkar, M. Mohammadi, **M. Karimi**. "Assessment of the Corrosion and Tribological Properties of Double Layer Nitride Coatings Performed by Plasma Nitriding and Cathodic Arc Evaporation on Ti-6Al-4V Alloy" Modares Mechanical Engineering, 20 (2020) 1555-1565. (in Persian)

6. **M. karimi,** "A Comparison between Mechanical and Tribological Properties of Coarse- and Nano-Grained Austenitic Stainless Steel", Materials Research Express, 6 (2019) 125065. https://dx.doi.org/10.1088/2053-1591/ab583b.

7. **M. Karimi**, M.R. Toroghinejad, J. Dutkiewicz, "Fracture Analysis of ARB-Processed CP-Ti Sheets Under Unidirectional Tensile Loading", Journal of Materials Engineering and Performance, 27 (2018) 6097-6106. https://doi.org/10.1007/s11665-018-3680-4.

8. N. Saeidi, M. Jafari, F. Ashrafizadeh, **M. Karimi**, S Ziaei-Rad, H. S. Kim, "Strain Hardening and Micro-Deformation Behavior in Advanced DP and TRIP steels: EBSD Examinations and Crystal Plasticity Simulations" Materials Research Express, 5 (2018) 126507. https://doi.org/10.1088/2053-1591/aae044.

9. **Mohsen Karimi**, Mohammad Reza Toroghinejad, Hamed Asgari, Jerzy A. Szpunar, "Texture evolution and plastic anisotropy of commercial purity titanium/SiC composite processed by accumulative roll bonding and subsequent annealing", Materials Chemistry and Physics, 219 (2018) 182–188. https://doi.org/10.1016/j.matchemphys.2018.08.027.

10. Arash Fattah–alhosseini, Mohsen K. Keshavarz, Yousef Mazaheri, Ali Reza Ansari, **Mohsen Karimi**. "Strengthening mechanisms of nano–grained commercial pure titanium processed by accumulative roll bonding" Materials Science and Engineering: A, 693 (2017) 164–169. https://doi.org/10.1016/j.msea.2017.03.070.

11. Arash Fattah–alhosseini, Ali Reza Ansari, Yousef Mazaheri, **Mohsen Karimi**, Meysam Haghshenas. "An Investigation of mechanical properties in accumulative roll bonded nano–grained pure

titanium", Materials Science and Engineering: A, 688 (2017) 218–224. https://doi.org/10.1016/j.msea.2017.02.013.

12. Arash Fattah–alhosseini, Ali Reza Ansari, Yousef Mazaheri, **Mohsen Karimi**. "Electrochemical Behavior Assessment of Micro–and Nano–Grained Commercial Pure Titanium in H2SO4 Solutions", Journal of Materials Engineering and Performance, 26(2) (2017) 611–620. https://doi.org/10.1007/s11665-016-2489-2.

13. Navid Saeidi, **Mohsen Karimi**, Mohammad Reza Toroghinejad. "Development of a new dual phase steel with laminated microstructural morphology", Materials Chemistry and Physics, 192 (2017) 1–7. https://doi.org/10.1016/j.matchemphys.2017.01.052.

14. **Mohsen Karimi**, Mohammad Reza Toroghinejad, Jan Dutkiewicz. "Nanostructure formation during accumulative roll bonding of commercial purity titanium", Materials Characterization, 122 (2016) 98–103. https://doi.org/10.1016/j.matchar.2016.10.024.

15. **Mohsen Karimi**, Mohammad Reza Toroghinejad, Khosro Farmanesh. "Multi–response optimization on the annealing of accumulative roll bonded monolithic Ti and Ti–SiCp composites", Materials & Design, 65 (2015) 34–41. https://doi.org/10.1016/j.matdes.2014.08.057.

16. **Mohsen Karimi**, Mohammad Reza Toroghinejad. "An alternative method for manufacturing high–strength CP Ti–SiC composites by accumulative roll bonding process", Materials & Design, 59 (2014) 494–501. https://doi.org/10.1016/j.matdes.2014.03.040.

17. Hossein Ashrafizadeh, **Mohsen Karimi**, Fakhreddin Ashrafizadeh. "Failure analysis of a high pressure natural gas pipe under split tee by computer simulations and metallurgical assessment", Engineering Failure Analysis, 32 (2013) 188–201. https://doi.org/10.1016/j.engfailanal.2013.03.013.

18. **Mohsen Karimi**, Abbas Najafizadeh, Ahmad Kermanpur, Mostafa Eskandari. "Effect of martensite to austenite reversion on the formation of nano/Submicron grained AISI 301 stainless steel", Materials Characterization, 60 (2009) 1220–1223. https://doi.org/10.1016/j.matchar.2009.04.014.

19. Mostafa Eskandari, Abbas Najafizadeh, Ahmad Kermanpur, **Mohsen Karimi**. "Potential application of nanocrystalline 301 austenitic stainless steel in lightweight vehicle structures", Materials & Design, 30 (2009) 3869–3872. https://doi.org/10.1016/j.matdes.2009.03.043.

20. Mostafa Eskandari, Abbas Najafizadeh, Ahmad Kermanpur, **Mohsen Karimi**. "Effect of homogenization condition and hot rolling parameters on grain refinement of an as–cast 301 stainless steel", International Journal of ISSI, 5 (2008) 21–28.

**Conferences:**

1. Elahe Ayoubi, Monire razazan, Mehdi Abdollahi, **Mohsen Karimi**, "The effect of adding industrial polymers on the properties of the slurry and the strength of the ceramic molds in investment casting, 2nd Modern Materials Conference, 2022, Yazd, Iran.

2. Mahla seifzadeh omrani, **Mohsen Karimi**, Mansoor Bozorg, "The effect of ultrafine substrate on the electrochemical behavior of TiN-coated stainless steel", 19th national corrosion congress, 2021, Tehran, Iran.

3. Amir Kaviani Katooli, Marzieh Abbasi Firozjah , Mansor Bozorg, **Mohsen Karimi**, "The effect of copper on phase structure and surface morphology of $TiB_2$-Cu composite coating produced by magnetron sputtering", 8th conference on plasma engineering and plasma physics, 2021, Babolsar, Iran.

4. Mahla seifzadeh omrani, **Mohsen Karimi**, Mansoor Bozorg, "Wear behavior of TiN coating deposited on nanostructured AISI301 stainless steel substrate" 21th National Conference on Surface Engineering, 2021, Isfahan, Iran.

5. **Mohsen Karimi**, Amir-Mahdi Shabani, Ali Makhdoomi, Mansoor Bozorg, "Reduction of metal dusting in HP-Nb heat-resistant steel at high working temperature using $Cr_3C_2$-NiCr coating", 21th National Conference on Surface Engineering, 2021, Isfahan, Iran.

6. Amir-Mahdi Shabani, **Mohsen Karimi**, Ali Makhdoomi, Seyyed Majid Azimi, Setareh Aghaeian, "The effect of dissolution heat treatment on the microstructure and creep properties of IN 939 superalloy", first Modern Materials Conference, 2021, Yazd, Iran.

7. Salaheddin Isafi, Ali Makhdoomi, Monireh Razazan, Amir-Mahdi Shabani, **Mohsen Karimi**, "Investigation of the effect of zircon and alumina on the strength and leachability of ceramic muscles silica base", first Modern Materials Conference, 2021, Yazd, Iran.

8. **Mohsen Karimi**, Saeedeh Afshar, "Phase transformations during processing of austenite stainless steels and comparison of different phase measurement methods", Steel Symposium, 2017, Kish International Convention Center, Iran.

9. **Mohsen Karimi**, Mohsen Mohammadi, Mohammad Reza Toroghinejad, "Improvment the wear resistance of the side–guide plates in the hot–roll mill", 17th national seminar on surface engineering, 2017, Isfahan university of technology, iran.

10. **Mohsen karimi**, Mohsen Mohammadi, Mohammad Reza Toroghinejad, ali kyani bamakani, ali nazeri, shahram abbasi, "Investigation of elongation jumping problem in T3 temper–mill sheets", *Steel Symposium 93*, 2015, Hormozgan steel company, Iran.

11. Hossein Ashrafizadeh, **Mohsen Karimi**, F. Ashrafizadeh, "Failure analysis of a natural gas pipe by computer simulations and metallurgical studies", 3rd Iranian pipe & pipeline conference, May 24–25, 2011, Razi Inl. Conference Center, Tehran, Iran.

12. M. Eskandari, A. Najafizadeh, A. Kermanpur, **M. Karimi**, "Effect of Martensitic Process Parameters on Behavior of Stress-induced Martensite in Metastable Ausenitic Stainless Steels", Steel Symposium 87, 2009, Ahvaz, Iran.

13. **M. Karimi**, A. Najafizadeh, A. Kermanpur, M. Eskandari, "Evaluation of annealing behavior of cold rolled AISI 301 for producing ultrafine/nano microstructure", Steel Symposium 87, 2009, Ahvaz, Iran.

14. M. Eskandari, A. Najafizadeh, A. Kermanpur, **M. Karimi**, "Production of ultrafine/nano grained AISI 301 stainless steel", Second IMES Congress, 2009, Karaj azad university, Iran.

**Industrial Research:**

– Feasibility study of setting up a continuous annealing line in Isfahan Mobarakeh Steel Company, Mobarakeh Steel Company, Isfahan, Iran, 2022.

– Improvement in the wear resistance of the side–guide plates in the hot–roll mill, Mobarakeh Steel Company, Isfahan, Iran, 2014.

– Improving the elongation jumping in T3 temper–milled sheets, Mobarakeh Steel Company, Isfahan, Iran, 2013.

– Failure analysis of a cracked natural gas pipe, Steel Institute of Iran, Isfahan University of Technology, 2010.

– Feasibility study on the production of oriented electrical steels in Iran, Steel Institute of Iran, Isfahan University of Technology, 2009.

**Reviewer of:**

– Materials Engineering and Performance
– Materials Characterization
– Materials Science and Engineering A
– Journal of Advanced Materials and Processing
– Journal of Advanced Materials in Engineering
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