

## *Curriculum Vitae*

(July 2025)

### Personal Details:

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### Education and Qualifications:

**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

**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

**B.Sc.**, Materials Engineering, Chamran University, Ahvaz,  
Bachelors project: Investigation of wear properties for Al–Si eutectic alloy used in the automotive  
industry

### Expertise:

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

### Teaching Experiences:

- Mechanical properties of materials
- Metals forming

- Composite materials
- Manufacturing processes for composite materials
- Mechanical properties of composite materials
- Materials science
- Manufacturing processes for engineering materials
- Non-ferrous alloys
- Physical chemistry
- Technical drawing
- Errors of observation and their treatment

#### Computer skills:

- **Basic Skills:** MS Office (Word, Excel, Powerpoint, Access), Google Drive. Docs, Drive, Forms, Gmail, Sheets.
- **CAD:** Solidworks
- **CAE:** Abaqus, Comsol
- **XRD analysis:** X'pert highscore, MAUD
- **Experimental design:** Qualitek-4

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

- Zahra Jafari motlaq (2024), Zataria multiflora extract as an eco-friendly corrosion inhibitor for copper in HCl, MSc Thesis, Shahrood University Of Technology, Mansoor Bozorg, **Mohsen Karimi**, [Supervisor/Supervisors], Mahshid Rahimi Fard [Advisor/ Advisors].
- Ali Moghaddasi Rostami (2024), An experimental investigation on galling wear resistance of metallic sheets fabricated by accumulative roll bonding, MSc Thesis, Shahrood University Of Technology, Mahdi Gerdooei [Supervisor/Supervisors], **Mohsen Karimi** [Advisor/ Advisors].
- Elahe Ayoubi (2023), "Investigating the effect of additives on the properties of ceramic cores used for single crystal and directional solidification turbine blades", MSc Thesis, Shahrood University Of Technology, **Mohsen Karimi**, Mansoor Bozorg [Supervisor/Supervisors], Amir Mahdi Shabani, Salahoddin Isafi [Advisor/ Advisors].
- Amirhosein Fadaezadeh (2022), "Investigating the tensile components and mechanical properties of metal sheets produced by cumulative rolling method", MSc Thesis, Shahrood University of Technology, Mehdi Gerduue [Supervisor/Supervisors], **Mohsen Karimi** [Advisor/ Advisors].
- Mostafa Dangchi (2022), "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].
- Majid Yahyae (2022), "Production of ceramic pigments from industrial waste materials for using in tile glazes", MSc Thesis, Shahrood University of Technology, Arash Yazdani, **Mohsen Karimi** [Supervisor/Supervisors].

- Abolfazl Sharifinia (2022), "Evaluation of microstructure, mechanical and corrosion properties of Al/ZrC<sub>p</sub> composite produced by accumulative roll bonding", MSc Thesis, Shahrood University of Technology, Mansoor Bozorg, **Mohsen Karimi** [Supervisor/Supervisors].
- Saeedeh Afshar (2022), "Evaluation of corrosion and tribological properties of TiB<sub>2</sub>/Cu coating applied on 304 austenitic stainless steel by PVD", MSc Thesis, Iran University of Science and Technology, Hossein Arabi, Mohammad Bagher Sadeghi [Supervisor/Supervisors], **Mohsen Karimi** [Advisor/ Advisors].
- Amir Kaviani (2021), "Evaluation of corrosion and tribological properties of TiB<sub>2</sub>/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]
- 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].
- 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, Majid Mohammadi, **Mohsen Karimi** [Supervisor/Supervisors], Majid Salehi [Advisor/ Advisors].
- Rasool Naderi (2019), "Microstructure and mechanical properties of friction stir processed AA5456-O/SiO<sub>2</sub> nanocomposite", MSc Thesis, Shahrood University of Technology, Mostafa Hajian Heidary [Supervisor/Supervisors], **Mohsen Karimi**, Ali Reza Ahmadi [Advisor/ Advisors].

## **Publications:**

### **Journals:**

1. E Ayoubi, **M Karimi**, M Bozorg, AM Shabani, S Isafi, "Multi-response optimization on porosity and mechanical properties of alumina-based ceramic core", Powder Technology, (2025) 121358.
2. H Ashrafi, **M Karimi**, Z Soleimani Bistegani, "Development of DP600 and DP800 Steels with High Strength-Elongation Balance via a Simple Heat Treatment Schedule" Journal of Materials Engineering and Performance, (2025) 1-9.
3. Saeedeh Afshar, Hossein Arabi, Mohammad Bagher Sadeghi, **Mohsen Karimi**. "Comparison of tensile properties and work hardening rate of fine-and coarse-grained 304 austenitic stainless steel." Metallurgical Engineering (2023). <https://doi.org/10.22076/me.2023.533113.1356>.
4. Amir Kaviani Katooli, **Mohsen Karimi**, Mansoor Bozorg, "Investigating the Effect of RF Power on the Corrosion Behavior of TiB<sub>2</sub>/Cu Composite Coating Applied on 304 Austenitic Stainless Steel

Substrate by Magnetic Sputtering Method”, Journal of Corrosion Sciences and Engineering 13 (2023) 27-38.

5. **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>.

6. 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>.

7. 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>.

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

9. Sara Kamkar, Majid Mohammadi, **Mohsen 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)

10. **Mohsen 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>.

11. **Mohsen Karimi**, Mohammad Reza 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>.

12. Navid Saeidi, Majid Jafari, Fakhreddin Ashrafizadeh, **Mohsen Karimi**, Saeed Ziaei-Rad, Hyoungh Seop 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>.

13. **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>.

14. 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>.

15. 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>.

16. Arash Fattah-alhosseini, Ali Reza Ansari, Yousef Mazaheri, **Mohsen Karimi**. "Electrochemical Behavior Assessment of Micro–and Nano–Grained Commercial Pure Titanium in H<sub>2</sub>SO<sub>4</sub> Solutions", *Journal of Materials Engineering and Performance*, 26(2) (2017) 611–620. <https://doi.org/10.1007/s11665-016-2489-2>.

17. 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>.

18. **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>.

19. **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>.

20. **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>.

21. 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>.

22. **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>.

23. 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>.

24. 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, 2<sup>nd</sup> 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<sub>2</sub>-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<sub>3</sub>C<sub>2</sub>-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 Intl. 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 Alloys and Compounds
- The Journal of The Minerals, Metals & Materials Society
- Measurement
- Chemical Papers
- Materials Chemistry and Physics
- Journal of Advanced Materials and Processing
- Journal of Advanced Materials in Engineering
- International Journal of Steel structures
- Journal of solid and fluid mechanics
- Journal of Mechanical Engineering University of Tabriz
- Amirkabir Journal of Mechanical Engineering
- Modares Mechanical Engineering
- AUT Journal of mechanical Engineering