Hamed Shahmir

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Current Position

Assistant professor: Materials Engineering Department, Tarbiat Modares University, Tehran, Iran (2020-Now)

Research Interests

- Microstructure Engineering in Metallic Materials
- Alloy Design based on Computational Methods
- Machine Learning in Materials Engineering
- Ultrafine-Grained and Nanostructured Materials
- High-Entropy Alloys
- Shape Memory Alloys

Academic Positions

 Post-doctoral Research Associate: University of Sheffield (2019-2020)

Research project: Fabrication and characterization of high entropy alloys for advanced nuclear systems
Under supervision of Dr. Amy Gandy

 Post-doctoral Researcher: University of Tehran (2017-2019)

Research project: Severe plastic deformation of high-entropy alloys
Under supervision of Prof. Mahmoud Nili-Ahmadabadi and Prof. Terence G. Langdon

 Post-doctoral Research Fellow: University of Southampton (2015-2017)

Research project: Severe plastic deformation of CP-Ti, Ti-6Al-4V and CoCrFeNiMn high-entropy alloys
Under supervision of Prof. Terence G. Langdon

Academic Qualifications

 Ph.D.: University of Tehran (2010-2015)

Metallurgical and Materials Engineering, University of Tehran, Iran. GPA (3.66/4.00)
Research project: Nanostructured NiTi-based shape memory alloys processed by severe plastic deformation
Under supervision of Prof. Mahmoud Nili-Ahmadabadi and Prof. Terence G. Langdon
Study leave for 6 months under supervision of Prof. Hyoung Seop Kim at POSTECH University in South Korea

 M.Sc.: University of Tehran (2006-2008)

Metallurgical and Materials Engineering, University of Tehran, Iran, GPA (3.46/4.00)
Research project: Wire drawing know how and the effect of the thermomechanical treatment on transformation behavior of Ni-Ti shape memory alloy
Under supervision of Prof. Mahmoud Nili-Ahmadabadi

 B.Sc.: University of Imam Khomeini (2002-2006)

Metallurgical and Materials Engineering, University of Imam Khomeini, Iran, GPA (3.06/4.00)
Research project: Investigation of mechanical property of Al/SiCp composite
Under supervision of Dr. Ahmad Razaghian and Prof. Masoud Emami

Publications

More than 70 publications in high-prestige journals with an h-index of 29. The list of papers is available by following link:

https://scholar.google.co.uk/citations?user=cmJgPzQAAAAJ&hl=en

Teaching Experiences

- Physical Metallurgy, Teacher Assistant, University of Tehran (2009)
- Phase transformation in metals and alloys, Teacher Assistant, University of Tehran (2020)
- Strengthening mechanisms in metals and alloys, Tarbiat Modares University (2021-Now)
- Ultrafine grained and nanostructured materials, Tarbiat Modares University (2021-Now)
- Plastic deformation in metallic materials, Tarbiat Modares University (2022-Now)
- Uncertainty and error measurements in materials engineering, Tarbiat Modares University (2022-Now)
- Fracture in metallic materials, Tarbiat Modares University (2024-Now)

Industrial Experiences and Projects

- Founder and Chairman of the board - Arziz Sanat Co. (2020-Now)
- Research and Development Manager - Arziz Sanat Co. (2020-Now)
- Fabrication of NiTi orthodontic wires (2008-2010)
- Failure Analyses of industrial parts (2014-2015)
- On-line monitoring of steam power plants (2017-2018)
- Rejuvenation of a Ni-based gas turbine blade (2020-2023)
- Fabrication and characterization of solder alloys (2021-2023)
- Fabrication and characterization of Pb-based anodes for copper electrowinning (2022-2024)
- Fabrication of solder pastes (2021-2024)
- Heat treatment and characterization of NiTi rotary files (2022-2024)
- Fabrication of high strength-high and high-conductivity Corson strips (Cu-Ni-Co-Si alloys) (2024-2025)
- Fabrication of solder flux (2024-2025)

Awards & Grants

- Severe plastic deformation of high-entropy alloys (National Elite Foundation of Iran, 2017-2019)
- Heat treatment of NiTi rotary files (Hamerz Medical Co., 2023-2024)
- Fabrication and characterization of high-entropy alloys for hydrogen storage applications (Iran National Science Foundation (INSF) under Grant agreement no. 4006067, 2022-2024)
- Development of lead-based anodes for copper electrowinning application (Arziz Sanat Co., 2021-2023)
- Machine Learning for designing high-entropy alloys (Iran National Science Foundation (INSF) under Grant agreement no. 4040316, 2025-2026)