CURRICULUM VITAE (CV)

Mahmoud Nili Ahmadabad

Professor in Metallurgy and Materials Engineering, College of engineering, University of Tehran

Position

The head of Advanced Phase Transformation Lab (since 1998)/ http://www.aptlab.ir/
The deputy in research affairs, College of Engineering, University of Tehran (1996-2001)
The head of Center of Excellence for high performance materials (since 2004)
The Head of Iranian Metallurgical and Materials Engineering Society of Iran (2015-continue)
The Dean of College of Engineering at University of Tehran (2002-2008)
The President of University of Tehran (2014-2021)
The president of Asia Pacific Association (2019-2021)
The Board member of International Association of Universities (2017-continue)

Education

Ph.D in materials processing (physical metallurgy), Dept. of materials processing, Tohoku University, Sendai, Japan, 1991-1994.
M.Sc
Sharif University of Technology, Tehran- Iran, 1984-1987
B.Sc:
Shiraz (Pahlavi) University, Shiraz-Iran, 1974-1981

Experiences
Chief Engineer and manager in R&D centers and Metallurgical plants, 1980-1990(1984-1987 part time job).

Membership
Iranian foundryman society
Iranian iron and steel society
Iranian metallurgical engineers' society
The Minerals, Metals & Materials Society (TMS)

Awards
Distinguished Research Manager, University of Tehran (2014)
The 18th Khwarazmi Int. Award (2005)
COSMTEC Award (2005)
Distinguished Prof., University of Tehran, 2003
Ministry of Higher Education Ph.D. Scholarship award, (1990-1994)
University of Tehran applied research award, 1999

Courses taught

Graduate
Interfaces in polycrystals and nano-structured materials, thermodynamics and kinetics

Phase transformation in metals and alloys

Undergraduate
Fundamental Solidification and Casting

PUBLICATIONS

A- Book chapter

1- Book chapter, Biomaterial, University of Tehran, 2007, 50-89 (in Persian)

2- Book chapter, Encyclopedia in Iron and Steel and its alloys, 2015, Taylor & Francis

3- Book chapter, M. Nili-Ahmadabadi, H. Koohdar and M H Parsa, Cold Rolling Practice of Martensitic Steel, Rolling of Advanced High Strength Steels Theory, Simulation and Practice, Edited by Jingwei Zhao and Zhengyi Jiang 2017, CRC press, Taylor and Francis group.

B- Patent

Maryam Mohri, Mahmoud Nili Ahmadabadi, bi-layer thin film exhibiting pseudo U.S. patent number 11,220,738, patent office on 2022-01-11

C- Selected WOS selected Journal Papers (2010-2021)

1. Dehkordi, Z.K., Malekan, M., Nili-Ahmadabadi, M., Superplastic formability of the developed $Zr_{40}Hf_{10}Ti_5Al_{10}Cu_{25}Ni_{10}$ high entropy bulk metallic glass with enhanced thermal stability, Journal of Non-Crystalline Solids, 2022, 576, 121265
2. Mehranpour, M.S., Shahmir, H., Derakhshandeh, A., Nili-Ahmadabadi, M., Significance of Ti addition on precipitation in CoCrFeNiMn high-entropy alloy, Journal of Alloys and Compounds, 2021, 888, 161530
3. Baradari, S., Resnina, N., Belyaev, S., Nili-Ahmadabadi, M., Martensitic phase transformation and shape memory properties of the as-cast NiCuTiHf and NiCuTiHfZr alloys, Journal of Alloys and Compounds, 2021, 888, 161534
4. Shahmir, H., Mehranpour, M.S., Derakhshandeh, A., Nili-Ahmadabadi, M, Microstructure tailoring to enhance mechanical properties in CoCrFeNiMn high-entropy alloy by Ti addition and thermomechanical treatment, Materials Characterization, 2021, 182, 111513
5. Koohdar, H., Nili-Ahmadabadi, M., Kalahroudi, F.J., Jafarian, H.R., Langdon, T.G., Effect of post-deformation annealing on the microstructure and mechanical behavior of an Fe–Ni–Mn steel processed by high-pressure torsion, Journal of Materials Research and Technology, 2021, 15, pp. 1537–1546
6. A Ahadi, AS Ghorabaei, H Shirazi, M Nili-Ahmadabadi, Bulk NiTiCuCo shape memory alloys with ultra-high thermal and superelastic cyclic stability, Scripta Materialia (2021) 200, 113899
7. N Forouzanmehr, HR Jafarian, M Samadi-khoshkhoo, M Bönisch, M Nili-Ahmadabadi, Nanostructural Evolution and Deformation Mechanisms of Severely Deformed Pure Fe, Metals and Materials International, (2021) 27 (6), 1798-1807

8. MS Mehranpour, H Shahmir, M Nili-ahmadabadi, Precipitation kinetics in heavily deformed CoCrFeNiMn high entropy alloy, Materials Letters (2021) 288, 129359

9. H Shahmir, P Asghari-Rad, MS Mehranpour, F Forghani, HS Kim, M Nili-Ahmadabadi, Evidence of FCC to HCP and BCC-martensitic transformations in a CoCrFeNiMn high-entropy alloy by severe plastic deformation, Materials Science and Engineering: (2021) A 807, 140875

10. H Koohdar, P Hakimipour, HR Jafarian, TG Langdon, M Nili-Ahmadabadi, Engineering mechanical properties by controlling the microstructure of an Fe–Ni–Mn martensitic steel through pre-cold rolling and subsequent heat treatment, Materials Science and Engineering: (2021) A 804, 140760

11. FJ Kalahroudi, H Koohdar, TG Langdon, M Nili-Ahmadabadi, Phase evolution and mechanical properties of an intercritically-annealed Fe–10Ni–7Mn (wt.%) martensitic steel severely deformed by high-pressure torsion, Materials Science and Engineering: (2021) A 804, 140519

12. H Koohdar, M Nili-Ahmadabadi, FJ Kalahroudi, HR Jafarian, TG Langdon

13. The effect of high-pressure torsion on the microstructure and outstanding pseudoelasticity of a ternary Fe–Ni–Mn shape memory alloy, Materials Science and Engineering: (2021) A 802, 140647

14. MS Mehranpour, H Shahmir, M Nili-ahmadabadi, Microstructure and excess free volume of severely cold shape rolled CoCrFeNiMn high entropy alloy, Journal of Alloys and Compounds (2020) 840, 155672

15. MS Mehranpour, H Shahmir, M Nili-ahmadabadi, CoCrFeNiMn high entropy alloy microstructure and mechanical properties after severe cold shape rolling and annealing, Materials Science and Engineering: (2020) A 793, 139884

16. Askari-Naeini, F.G., Taghizadeh, M., Mohri, M., Nili-Ahmadabadi, M. On the microstructure and mechanical properties of a two-way shape memory NiTi/NiTiCu bi-layer diaphragm, (2020) Materials and Design, 188, art. no. 108464, .

17. Shahmir, H., Nili-Ahmadabadi, M., Mohammadi, M., Huang, Y., Andrzejczuk, M., Lewandowska, M., Langdon, T.G., Effect of Cu on Amorphization of a TiNi Alloy during HPT and Shape Memory Effect after Post-Deformation Annealing (2020), Advanced Engineering Materials, 22 (1), art. no. 1900387, .

18. Shafiee, A., Nili-Ahmadabadi, M., Kim, H.S., Jahazi, M.,Development and Microstructural Characterization of a New Wrought High Entropy Superalloy(2019) Metals and Materials International.

19. H Shahmir, M Nili-Ahmadabadi, A Shafiee, M Andrzejczuk, Effect of Ti on phase stability and strengthening mechanisms of a nanocrystalline CoCrFeMnNi high-entropy alloy, Materials Science and Engineering A, 2018

20. H Shahmir, M Nili-Ahmadabadi, A Shafiee, TG Langdon, Effect of a minor titanium addition on the superplastic properties of a CoCrFeNiMn high-entropy alloy processed by high-pressure torsion, Materials Science and Engineering, 2018, A 718, 468-476

21. M Taghizadeh, M Nili-Ahmadabadi, M Baghani, MH Malekoshoaraei, A Combined Analytic, Numeric, and Experimental Investigation Performed on NiTi/NiTiCu Bi-Layer Composites under Tensile Loading, Advanced Engineering Materials, 2018, 20 (2), 1700395

22. M Mohri, M Taghizadeh, D Wang, H Hahn, M Nili-Ahmadabadi, Microstructural study and simulation of intrinsic two-way shape memory behavior of functionally graded Ni-rich/NiTiCu thin film, Materials Characterization, 2018 135, 317-324

23. H Koohdar, M Nili-Ahmadabadi, M Habibi-Parsa, HR Jafarian, On the Stability of Reversely Formed Austenite and Related Mechanism of Transformation in an Fe-Ni-Mn Martensitic Steel Aided by Electron Backscattering Diffraction., Metallurgical and Materials Transactions, 2017 A 48 (11), 5244-5257

24. S Mirab, M Nili-Ahmadabadi, A Khajezade, HR Jafarian, Correlation between poly-modal grain size and peculiar mechanical properties of pure aluminum deformed by RCSR process, Materials Science and Engineering: A, 2017 700, 416-424

25. P Asghari-Rad, M Nili-Ahmadabadi, H Shirazi, S Hossein Nedjad, ..., A Significant Improvement in the Mechanical Properties of AISI 304 Stainless Steel by a Combined RCSR and Annealing Process, 2017, Advanced Engineering Materials 19 (3)

26. A Derakhshandeh, M Nili-Ahmadabadi, A Khajezade, H Shahmir, Room Temperature Flow Behavior of Ti Deformed by Equal-Channel Angular Pressing Using Core–Sheath Method, Advanced Engineering Materials, 2017 19 (2)

27. MA Moghadasi, M Nili-Ahmadabadi, F Forghani, HS Kim, Development of an oxide-dispersion-strengthened steel by introducing oxygen carrier compound into the melt aided by a general thermodynamic model, 2016, Scientific reports 6, 38621

28. S Mirab, M Nili-Ahmadabadi, A Khajezade, M Abshirini, MH Parsa, On the deformation analysis during RCSR process aided by finite element modeling and digital image correlation, 2016, Advanced Engineering Materials 18 (8), 1434-1443
29. M Mohri, M Nili-Ahmadabadi, M PouryazdanPanah, H Hahn, Evaluation of structure and mechanical properties of Ni-rich NiTi/Kapton composite film, 2016, Materials Science and Engineering: A 668, 13-19
30. N Forouzanmehr, M Nili-Ahmadabadi, M Bönisch The Physics of Metals and Metallography 117 (6), 624-633, The analysis of severely deformed pure Fe structure aided by X-ray diffraction profile, 2016,
31. HR Koohdar, M Nili-Ahmadabadi, M Habibi-Parsa, HR Jafarian, Observation of pseudoelasticity in a cold rolled Fe–Ni–Mn martensitic steel, 2106, Materials Science and Engineering: A 658, 86-90.
32. Nazanin Forouzanmehr, Mahmoud Nili-Ahmadabadi, Mohsen Samadi Khoshkhoo, On the microstructure and mechanical properties of severely cold shape rolled Cu, Materials Science and Engineering: A, Volume 650, 5 January 2016, Pages 264–272.
33. Hamed Shahmir, Mahmoud Nili-Ahmadabadi, Alireza Razzaghi, Mahdi Mohammadi, Chuan Ting Wang, Jai Myun Jung, Hyoung Seop Kim, Terence G. Langdon, Using dilatometry to study martensitic stabilization and recrystallization kinetics in a severely deformed NiTi alloy, Journal of Materials Science, June 2015, Volume 50, Issue 11, pp 4003-4011.
34. Maryam Mohri, Mahmoud Nili-Ahmadabadi, Phase transformation and structure of functionally graded Ni–Ti bi-layer thin films with two-way shape memory effect, Sensors and Actuators A: Physical, Volume 228, 1 June 2015, Pages 151–158.
35. Hamed Shahmir, Mahmoud Nili-Ahmadabadi, Chuan Ting Wang, Jai Myun Jung, Hyoung Seop Kim, Terence G. Langdon, Annealing behavior and shape memory effect in NiTi alloy processed by equal-channel angular pressing at room temperature, Materials Science and Engineering: A, Volume 629, 1 April 2015, Pages 16–22.
36. F. Saeidi, M. Nili-Ahmadabadi, Thermal behavior of Fe40Co8Cr15Mo13Y2C16B6 bulk metallic glass with reference to irreversible structural relaxation, Materials Letters, Volume 143, 15 March 2015, Pages 108–111.
37. Maryam Mohri , Mahmoud Nili-Ahmadabadi, Functionally Graded Shape-Memory and Pseudoelastic Response in Ni-Rich/Ti-Rich and Vice Versa NiTi Multilayer Thin Films Deposited on Si (111), JOM, July 2015, Volume 67, Issue 7, pp 1585-1593.
38. Hamed Shahmir, Mahmoud Nili-Ahmadabadi, Yi Huang, Jai Myun Jung, Hyoung Seop Kim, Terence G. Langdon, Shape memory effect in nanocrystalline NiTi alloy processed by high-pressure torsion, Materials Science and Engineering: A, Volume 626, 25 February 2015, Pages 203–206.
39. H.R. Koohdar, M. Nili-Ahmadabadi, M. Habibi-Parsa, H.R. Jafarian, Development of pseudoelasticity in Fe–10Ni–7Mn (wt%) high strength martensitic steel by intercritical heat treatment and subsequent ageing, Materials Science and Engineering: A, Volume 621, 5 January 2015, Pages 52–60.
40. Maryam Mohri, Mahmoud Nili-Ahmadabadi, Venkata Sai Kiran Chakravadhanula, Crystallization study of amorphous sputtered NiTi bi-layer thin film, Materials Characterization, Volume 103, May 2015, Pages 75–80.

41. Maryam Mohri, Mahmoud Nili-Ahmadabadi, Julia Ivanisenko, Ruth Schwaiger, Horst Hahn, Venkata Sai Kiran Chakravadhanula, Microstructure and mechanical behavior of a shape memory Ni-Ti bi-layer thin film, Thin Solid Films, Volume 583, 29 May 2015, Pages 245–254.

42. Maryam Mohri, Mahmoud Nili-Ahmadabadi, Julia Ivanisenko, On the Super-Elastic and Phase Transformation of a Novel Ni-Rich/NiTiCu Bi-Layer Thin Film, Advanced Engineering Materials, Volume 17, Issue 6, 1 June 2015, 856-865.

43. H. Ghasemi-Nanesa, M. Nili-Ahmadabadi, H. R. Koohdar, M. Habibi-Parsa, S. Hossein Nedjad, S. A. Alidokht, and T. G. Langdon, Strain-induced martensite to austenite reverses transformation in an ultrafine-grained Fe–Ni–Mn martensitic steel, Philosophical Magazine (2014), 1-15.

44. M. Moradi, M. Nili-Ahmadabadi, B. Poorganji, B. Heidarian, and T. Furuhara, EBSD and DTA Characterization of A356 Alloy Deformed by ECAP During Reheating and Partial Re-melting, Metallurgical and Materials Transactions A, Vol. 45, No. 3 (2014), 1540-1551.

45. M. Moradi, M. Nili-Ahmadabadi, B. Poorganji, B. Heidarian, and T. Furuhara, EBSD and DTA Characterization of A356 Alloy Deformed by ECAP During Reheating and Partial Re-melting, Metallurgical and Materials Transactions A, Vol. 45, No. 3 (2014), 1540-1551.

46. M. Moradi, M. Nili-Ahmadabadi, B. Poorganji, B. Heidarian, and T. Furuhara, EBSD and DTA Characterization of A356 Alloy Deformed by ECAP During Reheating and Partial Re-melting, Metallurgical and Materials Transactions A, Vol. 45, No. 3 (2014), 1540-1551.

47. Maryam Mohri, Mahmoud Nili-Ahmadabadi, Stefan Flege, Diffusion evaluation of Cu in NiTi Bi-layer thin film interface, Journal of Alloys and Compounds 594 (2014) 87–92.

48. M. Askari-Paykani, M. Nili-Ahamadabadi, A. Seiffodini, On the subsurface deformation of two different Fe-based bulk metallic glasses indented by Vickers micro hardness, Intermetallics, Vol. 46, (2014), 118-125.

49. Hadi Ghasemi-Nanesa, Mahmoud Nili-Ahmadabadi, Arya Mirsepasi, and Cyrus Zamani, Nano- and Microvoid Formation in Ultrafine-Grained Martensitic Fe-Ni-Mn Steel After Severe Cold Rolling, Met. Mater. Int., Vol. 20, No. 2 (2014), pp. 201-205.

53. S. Mirab, M. Nili Ahmadabadi, On the flow and mechanical behavior of Al matrix composite reinforced by nickel based (90%Ni–10%Cr) wires during equal channel angular pressing, Materials Science &Engineering A, Vol. 583 (2013), PP 43–51.
54. S. M. Seyyed Aghamiri, M. Nili Ahmadabadi , H. Shahmir, F. Naghdi, Sh. Raygan, Study of thermo mechanical treatment on mechanical-induced phase transformation of NiTi and TiNiCu wires, J. Mechanical Behavior of Biomedical Materials 21 (2013), 32-36.
55. N. Rahgozar, M. Nili Ahmadabadi, F. Forghani, Development of high Mo carbide free thick section nodular cast iron by partial melting homogenization, Materials Science and Technology, Vol. 29 NO. 11 (2013), 1346-1353.
56. M. Askari-Paykani, M. Nili Ahmadabadi and A. Seiffodini, The effect of liquid phase separation on the Vickers micro indentation shear bands evolution in a Fe-based bulk metallic glass, accepted for publication in Materials Science & Engineering A (2013).
57. H. Shahmir, M. Nili Ahmadabadi , M. Mansouri-Arani, T.G. Langdon, The processing of NiTi shape memory alloys by equal-channel angular pressing at room temperature, Materials Science and Engineering A, Vol.576 (2013), PP 178-184.
58. Seifoddini, M. Stoica, M. Nili Ahmadabadi , S. Heshmati-Manesh, Uta K¨uhn, J¨ urgen Eckert, New (Fe0.9Ni0.1)77Mo5P9C7.5B1.5 glassy alloys with enhanced glass-forming ability and large compressive strain, Materials Science & Engineering A 560 (2013), PP 575–582.
59. Mirsepasi, M. Nili Ahmadabadi , M. Habibi-Parsa, H. Ghasemi-Nanesa, A.F. Dizaji, Microstructure and mechanical behavior of martensitic steel severely deformed by the novel technique of repetitive corrugation and straightening by rolling, Materials Science and Engineering A,Vol.551 (2012), PP 32– 39.
60. H. Shirazi, G. Miyamoto, S. Hossein Nedjad, H. Ghasemi-Nanesa, M. Nili Ahmadabadi , T. Furuhara, Microstructural evaluation of austenite reversion during intercritical annealing of Fe–Ni–Mn martensitic steel, J. Alloys and Compounds (2012).
61. Mahmoudi, M.R. Zamanzad Ghavidel, S. Hossein Nedjad, A. Heidarzadeh, M. Nili Ahmadabadi , Aging behavior and mechanical properties of maraging steels in the presence of submicrocrystalline Laves phase particles, Materials Characterization 62 (2011), PP 976- 981.
62. H. Shahmir, M. Nili Ahmadabadi , F. Naghdi, Superelastic behavior of aged and thermo mechanical treated NiTi alloy at Af + 10°C, Materials and Design 32 (2011), PP 365–370.
63. M. Akhlaghi, R. Mahmudi, M. Nili Ahmadabadi, Deformation energy of NiTi shape memory wires, Materials and Design 32 (2011), PP 1923–1930.
64. M.R. Jahangiri, M. Nili Ahmadabadi, and H. Farhangi, Enhancement of fatigue properties of ductile irons by successive austempering heat treatment, J. Materials Engineering and Performance, Vol. 20(9) (2011), PP 1642-1647.
65. M. Nili Ahmadabadi , H. Shirazi, H. Ghasemi-Nanesa, S. Hossein Nedjad, B. Poorganji, T. Furuhara, Role of severe plastic deformation on the formation of nanograins and nano-sized precipitates in Fe–Ni–Mn steel, Materials and Design 32 (2011), PP 3526–3531.
66. S. Hossein Nedjad, Y. Zahedi Moghaddam, A. Mamdouh Vazirabadi, H.

Shirazi, M. Nili Ahmadabadi , Grain refinement by cold deformation and recrystallization of bainite and acicular ferrite structures of C–Mn steels, Materials Science and Engineering A 528 (2011), PP 1521–1526.

67. S. Hossein Nedjad, F. Hossini Nasab, M.R. Movaghar Garabagh, S.R. Damadi, and M. Nili Ahmadabadi , X-Ray diffraction study on the strain anisotropy and dislocation structure of deformed lath martensite, Metallurgical and Matrials Transactions A, Vol. 42A (2011),PP 2493-2497.

68. S.M. Seyyed Aghamiri, M. Nili Ahmadabadi , Sh. Raygan, Combined effects of different heat treatments and Cu element on transformation behavior of NiTi orthodontic wires, J. Mechanical Behavior of Biomedical Materials 4 (2011), PP 298-302.

69. F. Hajiakbari , M. Nili-Ahmadabadi, B. Poorganji and T. Furuhara, Control of austenite to martensite transformation through Equal Channel Angular Pressing aided by thermodynamic calculations, Acta Materialia 58 (2010) 3073–3078.

70. F. Haji-Akbari, M. Nili Ahmadabadi M. Porganji and T. Furuhara, microstructure evolution through heavy compression aided by thermodynamic calculations, Journal of Material Science (2010).

Conferences paper and talks, more than 70 Refereed paper in the international Conferences.

Thesis Advisory

Supervise More than 50 M. Sc and 9 Ph.D. students.
Research topics (More than 30 projects granted by industry)

- Effect of Successive Austempering on the Wear behavior of High Mn Ductile Iron Funded by Research council of University of Tehran.
- Application of ADI in manufacturing of O-Ball Clevis Funded by Industry.
- Application of ADI in manufacturing of Car Gears Funded by Industry.
- Effect of Successive Austempering on Mechanical Properties and Wear Behavior of ADI for Gear box manufacturing Funded by Industry.
- Casting and Phase Transformation in Turbine Blade, Udimit-500 Funded by Industry.
- The Optimization of Austenitization in Ductile Iron Funded by Research council of University of Tehran.
- Effect of Austenitization Variables on the Microstructure of Tappets/cam Funded by Industry.
- Effect of Alloying Elements on the Kinetics of Austenitization of Ductile Iron Funded by Research council of University of Tehran.
- Control of Solidification and Bainitic Transformation in Alloyed Austempered Ductile Iron (ADI) with Reference to Industrial Application Funded by National Scientific Research Council of Iran.
- Know how development of Co-free maraging steel Funded by National Scientific Research Council of Iran.
- Solidification and heat treatment of Mn Maraging Steel, Funded by Ministry of industry
- Development of semi-solid ductile iron, Funded by Ministry of industry
- Semi-solid research on Al-Si alloys.
- Developement of austempered vermicular iron brake shoes for Iranian national railway Funded by Iranian national railway.
- Effect of sever plastic deformation on mechanical properties of steel with nano-size precipitates.
  Effect of different variables and reclamation on the pseduelasticity and shape memory of NiTi alloy.
  The effect of thermomechanical treatment on transformation behavior of NiTi shape memory alloy
- Recycling of spot-welding gun in body manufacturing of Iran Khodro Industrial Group Funded by Iran Khodro Industrial Group.
- Characterization of NiTi shape memory alloy.
- Development of know-how of NiTi orthodontic wire, Funded by Ministry of industry
- Improvement of liner in iron ore milling machine. Funded by Ministry of industry
- Development of Intrinsic Two Way Shape Memory NiTi Bi-Layer Thin Film, Granted by Iranian National Science Foundation (INSF).