

Curriculum Vitae

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Name: Mahmoud Kadkhodaei

Date of Birth: 16 September 1978

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Employment

• Dec. 2016-Present:

Professor, Department of Mechanical Engineering, Isfahan University of Technology

• Mar. 2013-Dec. 2016:

Associate Professor, Department of Mechanical Engineering, Isfahan University of Technology

• June 2007-Mar. 2013:

Assistant Professor, Department of Mechanical Engineering, Isfahan University of Technology

Education

• Ph.D. (Sept. 2002-Feb. 2007):

Mechanical Engineering (Applied Design), IUT, Coursework GPA: 18.2/20 (1st rank in the department)

Dissertation: Thermomechanical Modeling of Shape Memory Alloys

Fields of Research: Smart Materials, Nonlinear Finite Elements Method, Composites, Multi-continuum Theories, Biomechanics

• M.Sc. (Sept. 2000-Sept. 2002):

Mechanical Engineering (Applied Design), IUT, GPA: 19.1/20 (1st rank in the department)

Thesis: Analysis of Asymmetrical Sheet Rolling

Fields of Research: Metal Forming Technology, Linear Finite Elements Method

• B.Sc. (Sept. 1996-Sept. 2000):

Mechanical Engineering (Solid Design), IUT, GPA: 17.3/20 (3rd rank in the department)

Final Project: Investigation of Stepwise and Continuous Automatic Transmissions

Fields of Research: Automatic Transmissions, Flight Simulators

Research Interests

- Shape Memory Materials
- Additive Manufacturing
- Biomechanics

- Metal Forming

Courses Taught

• Undergraduate:

- Mechanics of Materials I & II
- Machine Design I & II
- Machinery Installation and Maintenance
- Textile Machinery Design
- Research and Documentation in Engineering

• Graduate:

- Shape Memory Materials
- Metal Forming
- Research and Documentation in Engineering

Administrative Experience

• Mar. 2020-Oct. 2021:

Coordinator of International Affairs, Department of Mechanical Engineering, Isfahan University of Technology

• Feb. 2014-May 2017:

Deputy of Research Affairs and Industrial Relationships, Department of Mechanical Engineering, Isfahan University of Technology

• Dec. 2010-June 2011:

Head-in-Charge, Department of Mechanical Engineering, Isfahan University of Technology

• July 2008-Dec. 2010:

Deputy of Educational Affairs, Department of Mechanical Engineering, Isfahan University of Technology

Research Appointments

• Mar. 2022 to Present:

Researcher, Warsaw University of Technology, Poland

• Feb. 2022 to Mar. 2022:

Visiting Professor, Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland

• Oct. 2021 to Dec. 2021:

Visiting Professor, University of Calabria, Italy

• July-Sept., 2018:

Visiting Professor, International Research Center for Mathematics & Mechanics of Complex Systems (M&MoCS), Italy

• June-July, 2015:

Visiting Researcher, Laboratoire Brestois de Mécanique et des Systèmes (LBMS), France

• Sept. 2005-July 2006:

Visiting Research Assistant, University of British Columbia (UBC), Canada

Projects

- ◆ Constitutive modeling of shape memory alloys
- ◆ Experimental investigation on the behaviors of Nitinol wires at different thermomechanical conditions

• 2000-2001:

Member of IUT Subsea R&D Center

Projects

- ◆ Design and manufacture of the mechanical arms for a remotely operated underwater vehicle (ROV)
- ◆ Design and manufacture of underwater hull cleaners (1-brushed & 3-brushed models)

Papers

• Journal Papers:

- 95) Zamani, M. R., **Kadkhodaei, M.**, Badrossamay, M., and Foroozmehr, E., “Adjustment of the scan track spacing and linear input energy to fabricate dense, pseudoelastic Nitinol shape memory alloy parts by selective laser melting”, *Journal of Intelligent Material Systems and Structures*, Vol. 33, No. 13, pp. 1719-1730, 2022
- 94) Yaghoubi, V., Setayeshnasab, H., Mosaddegh, P., and **Kadkhodaei, M.**, “A stochastic approach to estimate intraocular pressure and Dynamic Corneal Responses of the cornea”, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 130, p. 105210, 2022
- 93) Sattari, M., **Kadkhodaei, M.**, Akbarzadeh, S., Gholami, R., and Beheshti, A., “Wear in superelastic shape memory alloys: A thermomechanical analysis”, *Wear*, Vol. 488-489, p. 204139, 2022
- 92) Falahian, A., Asadi, P., Tajmir Riahi, H., and **Kadkhodaei, M.**, “An experimental study on a self-centering damper based on shape-memory alloy wires”, *Mechanics Based Design of Structures and Machines*, In Press
- 91) Mohammadi Bagheri, N., Mosaddegh, P., and **Kadkhodaei, M.**, “Effects of intracorneal ring segments on the biomechanical response of the ectatic cornea to air-puff: a patient-specific numerical analysis”, *Mathematics and Mechanics of Solids*, Vol. 27, No. 3, pp. 390-409, 2022
- 90) Shayanfard, P., Alarcon, E., Barati, M., Mahtabi, M., **Kadkhodaei, M.**, Arbab Chirani, S., and Šandera, P., “Stress Raisers and Fracture in Shape Memory Alloys: Review and Ongoing Challenges”, *Critical Reviews in Solid State and Materials Sciences*, Vol. 47, No. 6, pp. 461-519, 2022
- 89) Sareman, R., Foroozmehr, E., Badrossamay, M., and **Kadkhodaei, M.**, “An experimental and numerical evaluation of the mechanical properties and behavior of the kelvin lattice structure, made by SLM method”, *The Iranian Journal of Mechanical Engineering*, Vol. 23, No. 2, pp. 157-175, 2021 (In Persian)
- 88) Mohammadi Bagheri, N., **Kadkhodaei, M.**, Mosaddegh, P., and Pirhadi S., “Effects of intracorneal ring segments implementation technique and design on corneal biomechanics and keratometry in a personalized computational analysis”, *Scientific Reports*, Vol. 11, No. 1, 14433, 2021

- 87) Saremiyan, R., Badrossamay, M., Foroozmehr, E., **Kadkhodaei, M.**, and Forooghi, F., “Experimental and numerical investigation on lattice structures fabricated by selective laser melting process under quasi-static and dynamic loadings”, *The International Journal of Advanced Manufacturing Technology*, Vol. 112, pp. 2815-2836, 2021
- 86) Sattari, M., Ashtari Esfahani, H., **Kadkhodaei, M.**, and Akbarzadeh, S., “A mechanical contact model for superelastic shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol. 32, No. 2, pp. 208-218, 2021
- 85) Keshavarzan, M., **Kadkhodaei, M.**, and Forooghi, F., “An investigation into compressive responses of shape memory polymeric cellular lattice structures fabricated by vat polymerization additive manufacturing”, *Polymer Testing*, Vol. 91, p. 106832, 2020
- 84) Keshavarzan, M., **Kadkhodaei, M.**, Badrossamay, M., and Karamooz Ravari, M. R., “Investigation on the failure mechanism of triply periodic minimal surface cellular structures fabricated by Vat photopolymerization Additive Manufacturing under compressive loadings”, *Mechanics of Materials*, Vol. 140, p. 103150, 2020
- 83) Ashtari Esfahani, H., Akbarzadeh, S., and **Kadkhodaei, M.**, “Numerical and experimental study on the effect of considering plastic and elastoplastic deformation of each asperity in dry contact of rough surfaces”, *Surface Topography: Metrology and Properties*, Vol. 7, No. 2, p. 025021, 2019
- 82) Jahanbazi Asl, F., **Kadkhodaei, M.**, and Karimzadeh, F., “The effects of shape-setting on transformation temperatures of pseudoelastic shape memory alloy springs”, *Journal of Science: Advanced Materials and Devices*, Vol. 4, No., 4, pp. 568-576, 2019
- 81) Mohammadzadeh, M. R., **Kadkhodaei, M.**, Barati, M., Arbab Chirani, S., and Saint-Sulpice, L., “Modeling of torsion fatigue in shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol 30, No. 20, pp. 3146-3162, 2019
- 80) Mohammad Hashemi, Y., **Kadkhodaei, M.**, and Mohammadzadeh, M. R., “Fatigue Analysis of Shape Memory Alloy Helical Springs”, *International Journal of Mechanical Sciences*, Vol. 161-162, p. 105059, 2019
- 79) Mohammad Hashemi, Y., **Kadkhodaei, M.**, and Salehan, M., “Fully coupled thermomechanical modeling of shape memory alloys under multiaxial loadings and implementation by finite element method”, *Continuum Mechanics and Thermodynamics*, Vol 31, No. 6, pp. 1683-1698, 2019
- 78) Mostofizadeh, P., **Kadkhodaei, M.**, Arbab Chirani, S., Saint-Sulpice, L., Rokbani, M., Bouraoui, T., and Calloch, S., “Fatigue Analysis of Shape Memory Alloys by Self-heating Method”, *International Journal of Mechanical Sciences*, Vol. 156, pp. 329-341, 2019
- 77) Mohammad Hashemi, Y., and **Kadkhodaei, M.**, “The Effects of Geometric Parameters under Small and Large Deformations on Dissipative Performance of Shape Memory Alloy Helical Springs”, *Journal of Stress Analysis*, Vol 3, No. 1, pp. 69-79, 2018
- 76) Jafarzadeh, S., Shirani, M., **Kadkhodaei, M.**, and Gheibgholami, E. “Phenomenological constitutive modeling of ferromagnetic shape memory alloys considering the effects of loading history on reorientation start conditions”, *Continuum Mechanics and Thermodynamics*, Vol. 31, pp. 1065-1085, 2019
- 75) Naji, Z., Jamshidian, M., and **Kadkhodaei, M.**, “Micromechanical response analysis of Ti-Ni shape memory alloy undergoing martensitic reorientation and detwinning”, *Physica B: Condensed Matter*, Vol. 548, No. 1, pp. 34-45, 2018
- 74) Jannesari, M., Mosaddegh, P., **Kadkhodaei, M.**, Kasprzak, H., and Jabbarvand Behrouz, M., “Numerical and Clinical Investigation on the Material Model of the Cornea in

- Corvis Tonometry Tests: Differentiation between Hyperelasticity and Viscoelasticity”, *Mechanics of Time-Dependent Materials*, Vol. 23, No. 3, pp 373-384, 2019
- 73) Shayanfard, P., **Kadkhodaei, M.**, and Jalalpour, A., “Numerical and Experimental Investigation on Electro-Thermo-Mechanical Behavior of NiTi Shape Memory Alloy Wires”, *Iranian Journal of Science and Technology, Transactions of Mechanical Engineering*, Vol. 43 (Suppl 1), pp. S621-S629, 2019
 - 72) Jannesari, M., **Kadkhodaei, M.**, Mosaddegh, P., Kasprzak, H., and Jabbarvand Behrouz, M., “Assessment of corneal and fatty tissues biomechanical response in dynamic tonometry tests by using inverse models”, *Acta of Bioengineering and Biomechanics*, Vol. 20, No. 1, pp. 39-48, 2018
 - 71) Karamooz, M. R., Taheri, M., **Kadkhodaei, M.**, Saedi, S., Kraca, H., and Elahinia M., “Modeling the cyclic shape memory and superelasticity of selective laser melting fabricated NiTi”, *International Journal of Mechanical Sciences*, Vol. 138-139, pp. 54-61, 2018
 - 70) Barati, M., **Kadkhodaei, M.**, and Arbab Chirani, S., “Investigation on pseudoelastic training method and the generated two-way shape memory effect in NiTi shape memory alloy”, *Modares Mechanical Engineering*, Vol. 18, No. 3, pp. 86-94, 2018 (In Persian)
 - 69) Badnava, H., Mashayekhi, M., **Kadkhodaei, M.**, and Amiri-Rad. A., “A non-local implicit gradient-enhanced model for thermomechanical behavior of shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol. 29, No. 9, pp. 1818-1834, 2018
 - 68) Hesami, M., Pino, L., Saint-Sulpice, L., Legrand, V., **Kadkhodaei, M.**, Arbab Chirani, S., and Calloch, S., “Rotary bending fatigue analysis of shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol. 29, No. 6, pp. 1183-1195, 2018
 - 67) Shirani, M., Taheri Andani, M., **Kadkhodaei, M.**, and Elahinia, M., “Effect of loading history on phase transition and martensitic detwinning in shape memory alloys: Limitations of current approaches and development of a 1D constitutive model”, *Journal of Alloys and Compounds*, Vol. 729, pp. 390-406, 2017
 - 66) Müser, M. H., Dapp, W. B., Bugnicourt, R., Sainsot, Ph., Lesaffre, N., Lubrecht, T. A., Persson, B. N. J., Harris, K., Bennett, A., Schulze, K., Rohde, S., Ifju, P., Sawyer, W. G., Angelini, T., Ashtari Esfahani, H., **Kadkhodaei, M.**, Akbarzadeh, S., Wu, J. J., Vorlaufer, G., Vernes, A., Solhjoo, S., Vakis, A. I., Jackson, R. L., Xu, Y., Streater, J., Rostami, A., Dini, D., Medina, S., Carbone, G., Bottiglione, F., Afferrante, L., Monti, J., Pastewka, L., Robbins, M. O., and Greenwood. J. A., “Meeting the contact-mechanics challenge”, *Tribology Letters*, Vol. 65, No.4, p. 118, 2017
 - 65) Jafarzadeh, S., and **Kadkhodaei, M.**, “Finite Element simulation of ferromagnetic shape memory alloys using a revised constitutive model”, *Journal of Intelligent Material Systems and Structures*, Vol. 28, No.19, pp. 2853-2871, 2017
 - 64) Feizbakhsh, M., **Kadkhodaei, M.**, Zandian, D., and Hosseinpour, Z., “Stress Distribution in Maxillary First Molar Periodontium by Using Straight Pull Headgear with Vertical and Horizontal Tubes: A Finite Element Analysis”, *Dental Research Journal*, Vol. 14, No. 2, pp. 117-124, 2017
 - 63) Shayanfard, P., **Kadkhodaei, M.**, and Safaee, SH., “Proposition of R-phase transformation strip in the phase diagram of Ni-Ti shape memory alloy using electromechanical experiments”, *Journal of Intelligent Material Systems and Structures*, Vol. 28, No.19, pp. 2757-2768, 2017
 - 62) Barati, M., Arbab Chirani, S., **Kadkhodaei M.**, Saint-Sulpice, L. and Calloch S., “On the origin of residual strain in shape memory alloys: experimental investigation on evolutions in the microstructure of CuAlBe during complex thermomechanical loadings”, *Smart Materials and Structures*, Vol. 26, No. 2, pp. 02504, 2017

- 61) Alipour, A., **Kadkhodaei, M.**, and Safaei, M., “Design, analysis and manufacture of a tension-compression self-centering damper based on energy dissipation of pre-stretched superelastic shape memory alloy wires”, *Journal of Intelligent Material Systems and Structures*, Vol. 28, No.15, pp. 2129-2139, 2017
- 60) Heidari, M., **Kadkhodaei, M.**, Barati, M. and F Karimzadeh, F., “Fabrication and modeling of shape memory alloy springs”, *Smart Materials and Structures*, Vol. 25, No. 12, pp. 125003, 2016
- 59) Amrollahipour, R., and **Kadkhodaei, M.**, “Influence of Strain Rate on Stress-Strain Response of Ni-Mn-Ga Ferromagnetic Shape Memory Alloy Single Crystals”, *Iranian Journal of Science & Technology, Transactions of Mechanical Engineering*, Vol. 41, No. 4, pp. 265-268, 2017
- 58) Zare F., Jannesari, M., **Kadkhodaei, M.**, and Mosadegh, P., “Thermomechanical modeling and experimental investigation of transformation-induced creep and stress relaxation in shape memory alloy wires”, *Journal of Intelligent Material Systems and Structures*, Vol. 28, No. 7, pp. 923-933, 2017
- 57) Taheri Andani, M., Haberland, CH., Walker, J. M., Karamooz, M. R., Sadi Turabi, A., Saedi, S., Rahmanian, R., Karaca, H., Dean, D., **Kadkhodaei, M.**, and Elahinia, M., “Achieving biocompatible stiffness in NiTi through additive manufacturing”, *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 19, pp. 2661-2671, 2016
- 56) Badnava H., Mashayekhi, M., and **Kadkhodaei, M.**, “An anisotropic gradient damage model based on microplane theory”, *International Journal of Damage Mechanics*, Vol. 25, No. 3, pp. 336-357, 2016
- 55) Shirani, M., and **Kadkhodaei, M.**, “One dimensional constitutive model with transformation surfaces for phase transition in shape memory alloys considering the effect of loading history”, *International Journal of Solids and Structures*, Vol. 81, pp. 117-129, 2016
- 54) Rezaei, R., Karamooz, M.R., Badrossamay, M, and **Kadkhodaei, M.**, “Mechanical characterization and finite element modeling of polylactic acid BCC-Z cellular lattice structures fabricated by fused deposition modeling”, *Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science*, Vol. 23, No. 11, pp. 1995-2004, 2017
- 53) Karamooz, M.R., **Kadkhodaei, M.**, and Ghaei, A., “Effects of asymmetric material response on the mechanical behavior of porous shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 12, pp. 1687-1701, 2016
- 52) Shirani, M., and **Kadkhodaei, M.**, “Constitutive modeling of Ni–Mn–Ga ferromagnetic shape memory alloys under biaxial compression”, *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 11, pp. 1547-1564, 2016
- 51) Mosavar, A., Nili, M., Hashemi, S. R., and **Kadkhodaei, M.**, “A Comparative Analysis on Two Types of Oral Implants, Bone-Level and Tissue-Level, with Different Cantilever Lengths of Fixed Prosthesis”, *Journal of Prosthodontics*, Vol. 26, No. 4, pp. 289-295, 2017
- 50) Mehdizadeh, A. H., Mashayekhi, M., and **Kadkhodaei M.**, “Estimating High Cycle Fatigue Lifetime using Chaboche-Lemaitre damage model”, *Journal of Computational Methods in Engineering (Esteghlal)*, Vol. 35, No.1, pp. 27-41, 2016 (In Persian)
- 49) Jamalimehr, A., Ravanbakhsh, S., **Kadkhodaei, M.**, and Kamrani, M., “Investigation of dog-bone geometry for simple tensile test of pseudoelastic shape memory alloys”, *Iranian Journal of Science & Technology, Transactions of Mechanical Engineering*, Vol. 40, No. 4, pp. 337-345, 2016
- 48) Naghieh, S., Karamooz, M.R., Badrossamay, M., Foroozmehr, E., and **Kadkhodaei, M.**, “Numerical investigation of the mechanical properties of the additive manufactured

- bone scaffolds fabricated by FDM: The effect of layer penetration and post-heating”, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 59, pp.241-250, 2016
- 47) Miramini, A., **Kadkhodaei, M.**, Alipour A., and Mashayekhi, M., “Analysis of Interfacial Debonding in Shape Memory Alloy Wire-Reinforced Composites”, *Smart Materials and Structures*, Vol. 25, No. 1, 015032, 2016
 - 46) Kamrani, M., and **Kadkhodaei, M.**, “Investigation on Local and Global Behaviors of Pseudoelastic SMA Wires in Simple Tensile Test Considering Stress Concentration of Grippers”, *Journal of Intelligent Material Systems and Structures*, Vol. 27, No. 2, pp. 221-232, 2016
 - 45) Karamooz, M.R., Nasr Esfahani, S., Taheri Andani, M., **Kadkhodaei, M.**, Ghaei, A., Karaca, H., and Elahinia, M., “On the effects of geometry, defects, and material asymmetry on the mechanical response of shape memory alloy cellular lattice structures”, *Smart Materials and Structures*, Vol. 25, No. 2, 025008, 2016
 - 44) Mehrabi, R., Shirani, M., **Kadkhodaei, M.**, and Elahinia, M., “Constitutive Modeling of Cyclic Behavior in Shape Memory Alloys”, *International Journal of Mechanical Sciences*, Vol. 103, pp. 181-188, 2015
 - 43) Karamooz, M.R., **Kadkhodaei, M.**, and Ghaei, A., “A Unit Cell Model for Simulating the Stress-Strain Response of Porous Shape Memory Alloys”, *Journal of Materials Engineering and Performance*, Vol. 24, No. 10, pp. 4096-4105, 2015
 - 42) Badnava, H., **Kadkhodaei, M.**, and Mashayekhi M., “Modeling of unstable behaviors of shape memory alloys during localization and propagation of phase transformation using a gradient-enhanced model”, *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 18, pp. 2531-2546, 2015
 - 41) Karamooz, M.R., **Kadkhodaei, M.**, and Ghaei, A., “A microplane constitutive model for shape memory alloys considering tension-compression asymmetry”, *Smart Materials and Structures*, Vol. 24, No. 7, 075016, 2015
 - 40) Mehrabi, R., Andani, M., **Kadkhodaei, M.**, and Elahinia, M., “Experimental Study of NiTi Thin-walled Tubes under Uniaxial Tension, Torsion, Proportional and Non-proportional Loadings”, *Experimental Mechanics*, Vol. 55, No. 6, pp. 1151-1164, 2015
 - 39) Mosavar, A., Ziaei, A., and **Kadkhodaei, M.**, “The Effect of Implant Thread Design on Stress Distribution in Anisotropic Bone with Different Osseointegration Conditions: A Finite Element Analysis”, *The International Journal of Oral & Maxillofacial Implants*, Vol. 30. Nol. 6, pp.1317-1326, 2015
 - 38) Zare, F., **Kadkhodaei, M.**, and Salafian, I., “Thermomechanical Modeling of Stress Relaxation in Shape Memory Alloy Wires”, *Journal of Materials Engineering and Performance*, Vol. 24, No. 4, pp. 1763-1770, 2015
 - 37) Salem, M., Farzin, M., **Kadkhodaei, M.**, and Nakhaei, M., “A chain link mandrel for rotary draw bending: Experimental and finite element study of operation”, *International Journal of Advanced Manufacturing Technology*, Vol. 79, No. 5-8, pp. 1071-1080, 2015
 - 36) Sameallah, SH., **Kadkhodaei, M.**, Legrand, V., Saint-Sulpice, L., and Arbab Chirani, SH., “Direct numerical determination of stabilized dissipated energy of shape memory alloys under cyclic tensile loadings”, *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 16, pp. 2137-2150, 2015
 - 35) Karamooz, M.R., and **Kadkhodaei, M.**, “A computationally-efficient modeling approach for predicting mechanical behavior of cellular lattice structures”, *Journal of Materials Engineering and Performance*, Vol. 24, No. 1, pp. 245-252, 2015
 - 34) Alipour, A., **Kadkhodaei, M.**, and Ghaei, A., “Finite Element Simulation of SMA Wires Using a UMAT: Parametric Study on Heating Rate, Conductivity and Heat

- Convection”, *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 5, pp. 554-572, 2015
- 33) Sameallah, SH., Legrand, V., Saint-Sulpice, L., **Kadkhodaei, M.**, and Arbab Chirani, SH., “A comprehensive energy approach to predict fatigue life in CuAlBe shape memory alloy”, *Smart Materials and Structures*, Vol. 24, No. 2, 025004, 2015
 - 32) Mehrabi, R., **Kadkhodaei, M.**, Andani, M., and Elahinia, M., “Microplane modeling of shape memory alloy tubes under tension, torsion and proportional tension-torsion loading”, *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 2, pp. 144-155, 2015
 - 31) Shirani, M., and **Kadkhodaei, M.**, “A modified constitutive model with an enhanced phase diagram for ferromagnetic shape memory alloys”, *Journal of Intelligent Material Systems and Structures*, Vol. 26, No. 1, pp. 56-68, 2015
 - 30) Shirani, M., and **Kadkhodaei, M.**, “A geometrical approach to determine reorientation start and continuation conditions in ferromagnetic shape memory alloys considering the effects of loading history”, *Smart Materials and Structures*, Vol. 23, No. 12, 125008, 2014
 - 29) Karamooz, M.R., **Kadkhodaei, M.**, and Badrossamay, M., and Rezaei, R., “Numerical Investigation on mechanical properties of cellular lattice structures fabricated by fused deposition modeling”, *International Journal of Mechanical Sciences*, Vol. 88, pp. 154-161, 2014
 - 28) Badnava, H., **Kadkhodaei, M.**, and Mashayekhi M., “A non-local implicit gradient-enhanced model for unstable behaviors of pseudoelastic shape memory alloys in tensile loading”, *International Journal of Solids and Structures*, Vol. 51, No. 23-24, pp. 4015-4025, 2014
 - 27) Mehrabi, R., Taheri Andani, M., Elahinia, M., and **Kadkhodaei, M.**, “Anisotropic behavior of superelastic NiTi shape memory alloys; an experimental investigation and constitutive modeling”, *Mechanics of Materials*, Vol. 51, pp. 110-124, 2014
 - 26) Mehrabi, R., **Kadkhodaei, M.**, and Elahinia, M., “Constitutive modeling of tension-torsion coupling and tension-compression asymmetry in NiTi shape memory alloys”, *Smart Materials and Structures*, Vol. 23, No. 7, 075021, 2014
 - 25) Amrollahipour, R., **Kadkhodaei, M.**, and Kameli, P., “Behaviors of ferromagnetic shape memory alloy Ni-Mn-Ga under incomplete magneto-mechanical loading-unloading cycles”, *Advanced Engineering Materials*, Vol. 16, No. 11, 1362-1369, 2014
 - 24) Mehrabi, R., **Kadkhodaei, M.**, and Elahinia, M., “A Thermodynamically-Consistent Microplane Model for Shape Memory Alloys”, *International Journal of Solids and Structures*, Vol. 51, No. 14, pp. 2666-2675, 2014
 - 23) Qwamizadeh, M., **Kadkhodaei, M.**, and Salimi, M., “Asymmetrical rolling analysis of bonded two-layer sheets and evaluation of outgoing curvature”, *International Journal of Advanced Manufacturing Technology*, Vol. 73, No. 1-4, pp. 521-533, 2014
 - 22) Abrishami, O. H., and **Kadkhodaei, M.**, “A cycle-dependent phase diagram to investigate the thermomechanical behavior of SMA wires under cyclic loadings”, *Journal of Intelligent Material Systems and Structures*, Vol. 25, No. 16, pp. 2060-2073, 2014
 - 21) Kamarni, M., and **Kadkhodaei, M.**, “An Investigation into the Simple Tensile Test of SMA Wires Considering Stress Concentration of Grippers”, *Journal of Materials Engineering and Performance*, Vol. 23, No. 3, pp. 1114-1123, 2014
 - 20) Rabiei, F., Safavi, S. M., **Kadkhodaei, M.**, and Saberi, A., “Finite element study and experimental investigation on two-point incremental sheet metal forming”, *Iranian Journal of Mechanical Engineering, Transactions of the Iranian Society of Mechanical Engineers*, Vol. 15, No. 3, pp. 22-36, 2013 (In Persian)

- 19) Amrollahipour, R., **Kadkhodaei, M.**, and Kameli, P., “Experimental Study on the magnetomechanical characteristics of Ni-Mn-Ga Ferromagnetic Shape Memory Alloy Single Crystals”, Iranian Journal of Mechanical Engineering, Transactions of the Iranian Society of Mechanical Engineers, Vol. 14, No. 1, pp. 72-84, 2013
- 18) Sakhaei, A. H., Salimi, M., and **Kadkhodaei, M.**, “New multi-pass hot channel section rolling design by the finite element method”, Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science, Vol. 227, No. 12, pp. 2742-2750, 2013
- 17) Mostashfi, A., **Kadkhodaei, M.**, Poursina, M., and Bakhshi, S. R., “An investigative study on the performance of twist roll machine in a continuous cold strip rolling mill”, Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science, Vol. 227, No. 8, pp. 1623-1649, 2013
- 16) Latifi, M., Farhatnia, F., and **Kadkhodaei, M.**, “Buckling Analysis of Rectangular FGM Plates under Arbitrary Boundary Conditions using Fourier series expansion”, European Journal of Mechanics - A/Solids, Vol. 41, pp. 16-27, 2013
- 15) Saberi, A., Safavi, S. M., **Kadkhodaei, M.**, and Rabiei, F., “Two point incremental forming analysis using slab analysis and experimental data”, Modares Mechanical Engineering, Vol. 13, No. 1, pp. 61-69, 2013 (In Persian)
- 14) Mehrabi, R., and **Kadkhodaei, M.**, “3D phenomenological constitutive modeling of shape memory alloys based on microplane theory”, Smart Materials and Structures, Vol. 22, 025017, 2013
- 13) Qwamizadeh, M., **Kadkhodaei, M.**, and Salimi, M., “Slab analysis of asymmetrical rolling of bonded two-layer sheets”, ISIJ International, Vol. 53, No. 2, pp. 265-273, 2013
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- 40) Sattari, M., Akbarzadeh, S., **Kadkhodaei, M.**, and Narenjkar, P., “An Investigation into Correlation between Acoustic Emission and Wear in Ni-Ti Shape Memory Alloy”, 9th International Conference of Acoustics and Vibrations, Tehran, Iran, 2019 (In Persian)
- 39) Jalalpour, A., **Kadkhodaei, M.**, Arbab Chirani, S. Lakrit M., Barati M., Pino L., Saint-Sulpice L., and Calloch, S., “On the effects of numerical integration on accuracy of microplane modeling of shape memory alloys”, 24^{ème} Congrès Français de Mécanique, Brest, France, 2019
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- 35) Mohammad Hashemi, Y., and **Kadkhodaei, M.**, “The effects of geometric parameters under small and large deformations on dissipative performance of shape memory alloy helical springs”, The Bi-Annual International Conference on Experimental Solid Mechanics (X-Mech), Tehran, Iran, 2018
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- 5) Gholami, G. H., and **Kadkhodaei, M.**, “Behaviors of Ferromagnetic Shape Memory Alloy Ni-Mn-Ga under Incomplete Biaxial Loadings”, International Conference on Smart Materials and Surfaces, Bangkok, Thailand, 2014
- 4) Karamooz, M.R., and **Kadkhodaei, M.**, “Finite Element Modeling of the Elastic Modulus of Ti6Al4V Scaffold Fabricated by SLM”, 5th BIOT Conference on Poromechanics, Vienna, Austria, 2013
- 3) Barati, M., Arbab Chirani, S., and **Kadkhodaei, M.**, “Residual stress-induced martensite process in NiTi shape memory alloy during and after different training methods studied by electric resistivity measurement”, 11th European Symposium on Martensitic Transformations, Metz, France, 2018
- 2) Karamooz, M.R., Nasr Esfahani, S., Taheri Andani, M., **Kadkhodaei, M.**, and Elahinia, M. “Finite element modeling of NiTi cellular lattice structures considering microstructural defects”, Materials Science & Technology 2015 (MS&T15), Columbus, USA, 2015.
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- 5) Book Chapter: Karamooz-Ravari, M. R., **Kadkhodaei, M.**, and Elahinia, M., “Microplane Modeling for Inelastic Responses of Shape Memory Alloys” in “*Dynamics, Strength of Materials and Durability in Multiscale Mechanics*”, Springer, pp. 303-328, 2021
- 4) **Kadkhodaei, M.**, and Javadinejad, M., “*Statics*”, Daneshpajouhan Publications, Isfahan, 2nd Edition, 2017; 1st Edition, 2008 (In Persian)
- 3) Book Chapter: Haberland, C., **Kadkhodaei, M.**, and Elahinia, M., “Introduction” in “*Shape Memory Alloy Actuators: Design, Fabrication and Experimental Evaluation*”, by: Elahinia, M., John Wiley & Sons, 2016
- 2) Forouzan, M., and **Kadkhodaei, M.**, “*A key to selected software packages in analytical mechanics*”, Toseye Amouzesh Publications, Tehran, 2005 (In Persian)
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- 9) Amrollahipour, R., and **Kadkhodaei, M.**, *Magnetomechanical testing equipment*, Iran, 2013; Patent No. 89/A 025860
- 8) Safaei, M., and **Kadkhodaei, M.**, *An SMA damper*, Iran, 2012; Patent No. 89/A 036143
- 7) Shayanfard, P., and **Kadkhodaei, M.**, *A smart temperature control unit for solar collectors*, Iran, 2012; Patent No. 89/A 008987

- 6) Soltanzadeh, T., and **Kadkhodaei, M.**, *A portable device to assist in putting on clothes for people with disabilities*, Iran, 2012; Patent No. 89/A 024345
- 5) Mansourifar, A., and **Kadkhodaei, M.**, *A portable bridge for wheelchair riders to pass over the sidewalk curb cuts*, Iran, 2011; Patent No. 89/A 030286
- 4) Mahali, H., Pagoli, A., and **Kadkhodaei, M.**, *A chair to assist in sitting down and standing up for people with disabilities*, Iran, 2010; Patent No. 85/A 013823
- 3) Riahi, A., and **Kadkhodaei, M.**, *A purely mechanical lift-carrying mechanism for people with disabilities*, Iran, 2009; Patent No. 82/A 012650
- 2) Mehranfar, Y., Mousabeigi, V., Vakili, F., Zarshenas, M., and **Kadkhodaei, M.**, *An enhanced cycloidal drive for marine propulsion systems*, Iran, 2008; Patent No. 87/A 000536
- 1) Mehranfar, Y., Mousabeigi, V., Vakili, F., Zarshenas, M., and **Kadkhodaei, M.**, *A modified Voith Schneider Propeller (VSP)*, Iran, 2008; Patent No. 87/A 006916

Awards and Honors

- 18) Ulam NAWA Grant, Polish National Agency for Academic Exchange, 2022-2023
- 17) Outstanding Researcher of IUT with International Collaborations, 2019
- 16) Outstanding Supervisor of the Year Award, IUT, 2017
- 15) Supervision of the outstanding PhD dissertation, IUT, 2015
- 14) Gundishapur Grant for French-Iranian Scientific Collaborations, 2015-2016
- 13) ISME award for supervision of the best MS thesis in solid mechanics in the whole country, 2015
- 12) Listed among the 10 finalists of Zwick Science Award 2014
- 11) Supervision of the outstanding MSc thesis, IUT, 2014
- 10) Best Presented Paper Award at the 22nd Annual (International) Conference on Mechanical Engineering, Ahwaz, Iran, 2014
- 9) Teaching Excellence Award, IUT, 2013
- 8) Best Presented Paper Award at the 21st Annual (International) Conference on Mechanical Engineering, Tehran, Iran, 2013
- 7) ISME award for supervision of the best BSc final project in solid mechanics in the whole country, 2010
- 6) Outstanding PhD Thesis Award, IUT, 2009
- 5) Outstanding PhD Holder Award, IUT, 2008
- 4) Outstanding Student Achievement Award, IUT, 2007
- 3) Canadian Natural Science and Engineering Research Council Grant, UBC, 2005-2006
- 2) PhD Scholarship, IUT, 2004-2007
- 1) “Aali Nasab” award from the Iranian Society of Mechanical Engineers (ISME) for the best MSc thesis in solid mechanics in the whole country, 2003