

# Curriculum Vitae

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**Name:** Mahmoud Kadkhodaei

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## Education

### • **Ph.D. (Sept. 2002-Feb. 2007):**

Mechanical Engineering (Applied Mechanics), IUT, Coursework GPA: 18.2/20 (1<sup>st</sup> 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 Mechanics), IUT, GPA: 19.1/20 (1<sup>st</sup> 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 Mechanics), IUT, GPA: 17.3/20 (3<sup>rd</sup> rank in the department)

*Final Project:* Investigation of Stepwise and Continuous Automatic Transmissions

*Fields of Research:* Automatic Transmissions, Flight Simulators

## Research Interests

- Thermal and Ferromagnetic Shape Memory Alloys
- Metal Forming
- Biomechanics

## 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 Alloys
- Metal Forming

## **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

## **Administrative Experience**

- **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

## **Work Experience**

- **June-July, 2015:**

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

- **Feb. 2001-present:**

Member of IUT Metal Forming Center

### **Projects**

- ◆ Design and manufacture of a smart temperature control mechanism for flat solar collectors
- ◆ Analysis and troubleshooting of the twist roll machine of a continuous cold strip rolling mill for Mobarakeh Steel Complex
- ◆ Manufacture of porous Nitinol
- ◆ Development of design and manufacturing technology of a pickling line tension reel for Mobarakeh Steel Complex
- ◆ Compilation of state of the arts in rolling technology for Mobarakeh Steel Complex
- ◆ Development of an integrated trend in hot and cold rolling technology in Mobarakeh Steel Complex

- **Sept. 2005-July 2006:**

Visiting Research Assistant, The 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:**

- 66) 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, In Press
- 65) Heidarpour, 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
- 64) 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, In Press
- 63) 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
- 62) 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, In Press
- 61) 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
- 60) 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, In Press
- 59) Shayanfard, P., and Kadkhodaei, M., “A smart thermal actuator for temperature control of the flat solar collectors using NiTi Shape Memory Alloy thin wires”, Mechanics of Advanced Materials and Structures, In Press
- 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., 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*, In Press
- 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*, In Press
- 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*, 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. 2, 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 method and experimental data", *Modarres 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
- 12) Qwamizadeh, M., Kadkhodaei, M., and Salimi, M., "Asymmetrical sheet rolling analysis and evaluation of developed curvature", *International Journal of Advanced Manufacturing Technology*, Vol. 61, No. 1-4, pp. 227-235, 2012
- 11) Rezaei DA, H., Kadkhodaei, M., and Nahvi, H., "Analysis of Nonlinear Free Vibration and Damping of a Clamped-Clamped Beam with Embedded Pre-Strained SMA Wires", *Journal of Intelligent Material Systems and Structures*, Vol. 23, No. 10, pp. 1107-1117, 2012
- 10) Mehrabi, R., Kadkhodaei, M., and Ghaei, A., "Numerical Implementation of a Thermomechanical Constitutive Model for Shape Memory Alloys using Return Mapping Algorithm and Microplane Theory", *Advanced Materials Research*, Vol. 516-517, pp. 351-354, 2012
- 9) Sakhaei, A. H., Salimi, M., and Kadkhodaei, M., "Caliber Design in Shape Rolling by Finite Element Method", *Steel Research International*, Vol. 81, No. 9, pp. 174-177, 2010
- 8) Qwamizadeh, M., Kadkhodaei, M., and Salimi, M., "Analysis of Curvature Development in Asymmetrical Plate Rolling in Free and Forced Horizontal Entry Conditions", *Steel Research International*, Vol. 81, No. 9, pp. 90-93, 2010
- 7) Latifi, M., Farhatnia, F., and Kadkhodaei, M., "Buckling Analysis of Rectangular FGM Plates under Arbitrary Boundary Conditions", *Journal of Solid Mechanics*, Vol. 2, No. 1, pp. 57-68, 2009 (In Persian)
- 6) Kadkhodaei, M., Salimi, M., Rajapakse, R. K. N. D., and Mahzoon, M., "Modeling of shape memory alloys based on microplane theory", *Journal of Intelligent Material Systems and Structures*, Vol. 19, No. 5, pp. 541-550, 2008
- 5) Kadkhodaei, M., Rajapakse, R. K. N. D., Mahzoon, M., and Salimi, M., "Modeling of the cyclic thermomechanical response of SMA wires at different strain rates", *Smart Materials and Structures*, Vol. 16, No. 6, pp. 2091-2101, 2007
- 4) Kadkhodaei, M., Salimi, M., Rajapakse, R. K. N. D., and Mahzoon, M., "Microplane modelling of shape memory alloys", *Physica Scripta*, T129, pp. 329-334, 2007
- 3) Kadkhodaei, M., Salimi, M., and Poursina, M., "Analysis of asymmetrical sheet rolling by a genetic algorithm", *International Journal of Mechanical Sciences*, Vol. 49, pp. 622-634, 2007
- 2) Salimi, M., and Kadkhodaei, M., "Asymmetrical cold sheet rolling in free horizontal entry conditions", *Steel Grips*, No. 150, pp. 75-81, 2004
- 1) Salimi, M., and Kadkhodaei, M., "Slab analysis of asymmetrical sheet rolling", *Journal of Materials Processing Technology*, Vol. 150, No. 3, pp. 215-222, 2004

• **Conference Papers:**

- 37) Jahanbazi, F., and Kadkhodaei, M., "Characterization and modelling of NiTi pseudoelastic helical springs", *The 25th Annual (International) Conference on Mechanical Engineering*, Tehran, Iran, 2017 (In Persian)
- 36) Naghieh, S., Karamooz, M. R., Badrossamay, M., Forouzmehr, E., and Kadkhodaei, M., "Finite element analysis for predicting the mechanical properties of bone scaffolds fabricated by fused deposition modeling (FDM)", *Advanced Machinery Conference*, Tehran, Iran, 2015

- 35) 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.
- 34) Shirani, M., Mehrabi, R., Taheri Andani, M., Kadkhodaei, M., Elahinia, M., and Taheri Andani M. "A Modified Microplane Model Using Transformation Surfaces to Consider Loading History on Phase Transformation in Shape Memory Alloys", *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS)*, Newport, USA, 2014
- 33) 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
- 32) Heidari, B., and Kadkhodaei, M., "Numerical study of pseudoelastic shape memory alloy helical springs", *The 22nd Annual (International) Conference on Mechanical Engineering*, Ahwaz, Iran, 2014
- 31) Mosavar, A., Ziaei, A., and Kadkhodaei, M., "Evaluation of Implant Stability in Transition to the Secondary Stability", *The 22nd Annual (International) Conference on Mechanical Engineering*, Ahwaz, Iran, 2014
- 30) Rezaei, L., and Kadkhodaei, M., "Finite Element Analysis of Shape Memory Alloy Beam", *The 22nd Annual (International) Conference on Mechanical Engineering*, Ahwaz, Iran, 2014 (In Persian)
- 29) Heidari, B., Kadkhodaei, M., and Karimzadeh, F., "Shape Setting and Thermomechanical Characterization of Shape Memory Alloy Springs", *The Bi-Annual International Conference on Experimental Solid Mechanics (X-Mech)*, Tehran, Iran, 2014
- 28) Mehrabi, R., Kadkhodaei, M., and Elahinia, M., "Microplane modeling of shape memory alloys in alternative formulation", *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS)*, Utah, USA, 2013
- 27) Karamooz, M.R., Rezaei, R., Kadkhodaei, M., and Badrossamay, M., "Investigation on Manufacturability, Repeatability, and Mechanical Properties of Lightweight Poly(lactic Acid) BCC-Z Cellular Lattice Structures Fabricated by Fused Deposition Modeling", *International Porous and Powder Materials Symposium and Exhibition*, Izmir, Turkey, 2013
- 26) 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
- 25) Ravanbakhsh, H., Jamalimehr, A., Kadkhodaei, M., and Kamrani, M., "Proposition of dog-bone geometry for shape memory alloys under simple tensile test", *The 21st Annual (International) Conference on Mechanical Engineering*, Tehran, Iran, 2013
- 24) Amrollahipour, R., Kadkhodaei, M., and Kameli, P., "Experimental investigation on behaviors of Ni-Mn-Ga ferromagnetic shape memory alloy single crystals", *The 21st Annual (International) Conference on Mechanical Engineering*, Tehran, Iran, 2013
- 23) Mehrabi, R., Kadkhodaei, M., and Arbab Chirani, S.H., "Microplane Modeling of Martensite Reorientation in Shape Memory Alloys", *6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS)*, Vienna, Austria, 2012
- 22) Mehrabi, R., Kadkhodaei, M., Andani M., and Elahinia, M., "Shape memory effect behavior of NiTi torque tubes in torsion", *ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS)*, Georgia, USA, 2012



- 21) Saberi, A., Kadkhodaei, M., Safavi, M., and Rabiei, F., "Slab Method Analysis of Incremental Sheet Metal Forming", The 20th Annual (International) Conference on Mechanical Engineering, Shiraz, Iran, 2012 (In Persian)
- 20) Safaee, SH., Kadkhodaei, M., and Saidi, A., "MASHS: A Novel Method to Fabricate Porous Nickel-Titanium Shape Memory Alloy", The 20th Annual (International) Conference on Mechanical Engineering, Shiraz, Iran, 2012
- 19) Rabiei, F., Saberi, A., Safavi, M., and Kadkhodaei, M., "Experimental Study and Finite Element Simulation of Two-Point Incremental Sheet Metal Forming to Investigate Motions in the Spindle of CNC Machine", The 3rd Annual Conference on Manufacturing Engineering, Tehran, Iran, 2012 (In Persian)
- 18) Safavi, M., Saberi, A., Rabiei, F., and Kadkhodaei, M., "CNC Forming of Sheet Metals", The 12th Annual (International) Conference on Manufacturing Engineering, Tehran, Iran, 2012 (In Persian)
- 17) Salem, M., Kadkhodaei, M., and Farzin, M., "Thin-Walled Tube Bending Process Simulation using ABAQUS Software and Investigate Comparison between Simulation, Experimental and Stress Analysis Results", 11th Iranian Conference on Manufacturing Engineering, Tabriz, Iran, 2010
- 16) Latifi, M., Farhatnia, F., and Kadkhodaei, M., "Buckling analysis of FGM plates based on the theory of physical neutral plane", The 3rd Annual Conference of Mechanical Engineering, Khomeinishahr, Iran, 2010 (In Persian)
- 15) Khataei, M., Poursian, M., and Kadkhodaei, M., "A Study on Fracture Locus of St12 Steel and Implementation Ductile Damage Criteria", The 10th International Conference on Numerical Methods in Industrial Forming Processes, Korea, 2010
- 14) Nahvi, H., Rezaei, H., and Kadkhodaei, M., "Non-linear vibration analysis of a beam with embedded shape memory alloy wires", The 10th International Conference on Motion and Vibration Control, Japan, 2010
- 13) Sakhaei, A. H., Salimi, M., and Kadkhodaei, M., "Investigation into the Roll Pass Design for Channel Beams in Conventional Rolling", The 18<sup>th</sup> Annual (International) Conference on Mechanical Engineering, Tehran, Iran, 2010
- 12) Latifi, M., Farhat Nia, F., and Kadkhodaei, M., "On the Applications of Stocks Transformation in Structural Analysis", Second National Conference on Mechanical Engineering, Khomeinishahr, Iran, 2009 (In Persian)
- 11) Mohagheghian, I., Kadkhodaei M., and Slaimi, M., "A Fully Coupled Electro-Thermo-Mechanical Model for SMA Wires", Third International Conference on Advances and Trends in Engineering Materials and Their Application, Montreal, Canada, 2009
- 10) Jafari, S., Kadkhodaei M., and Slaimi, M., "Microplane Modeling of Shape Memory Alloy Torque Tubes", Third International Conference on Advances and Trends in Engineering Materials and Their Application, Montreal, Canada, 2009
- 9) Rezaei, H., Nahvi, H., and Kadkhodaei, M., "Vibration Characteristics of a Beam with Shape Memory Alloy Wires: Frequency Analysis", The 17th Annual (International) Conference on Mechanical Engineering, Tehran, Iran, 2009
- 8) Rezaei, H., Kadkhodaei, M., and Nahvi, H., "Vibration analysis of a rotating cantilever beam with embedded shape memory alloy wires", The 8th Iranian Aerospace Society Conference, Isfahan, Iran, 2009
- 7) Mehranfar, Y., Mousabeigi, V., Vakili, F., Zarshenas, M., Arazm, M., and Kadkhodaei, M., "Design and manufacture of a novel cycloidal propeller", 1st Conference on Rotating Equipment in Oil & Power Industries, Tehran, Iran, 2008 (In Persian)
- 6) Mohagheghian, I., Salimi, M., and Kadkhodaei, M., "Thermal response of SMA wires under electrical actuation", The 16th Annual (International) Conference of Mechanical Engineering, Kerman, Iran, 2008

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- 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 in analytical mechanics*", Toseye Amouzesh Publications, Tehran, 2005 (In Persian)
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- 8) Safaei, M., and Kadkhodaei, M., *An SMA damper*, Iran, 2012; Patent No. 89/A 036143
- 7) Shayanfar, 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, A., Pagoli, A., and Kadkhodaei, M., *A chair to assist in sitting down and standing up for people with disabilities*, Iran, 2009; 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 006916
- 1) Mehranfar, Y., Mousabeigi, V., Vakili, F., Zarshenas, M., and Kadkhodaei, M., *A modified Voith Schneider Propeller (VSP)*, Iran, 2008; Patent No. 89/A 000536

## **Awards and Honors**

- 17) Listed in Who'sWho in the Iranian Elite Academics
- 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