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PERSONAL

Date of Birth	1987
Place of Birth	Tehran- Iran

EDUCATION

2010-2017	Sharif University of Technology, Mechanical Engineering, Ph.D.
2008-2010	Sharif University of Technology, Mechanical Engineering, M.Sc.
2004-2008	Amirkabir University of Technology, Mechanical Engineering, B.Sc.

ACADEMIC POSITIONS

Februrary/2025-	Assistant Professor, Department of Automotive Engineering, Atilim University,	
Present	Turkey	
November/2021- Februrary/2025	Principal investigator and researcher, SUIMC, Sabanci University, Turkey	
September/2019-	Project Postdoctoral researcher, FENS, Sabanci University, Istanbul, Turkey	
October/2021	Froject Postdoctoral researcher, TENO, Sabarici Oniversity, Istalibul, Turkey	

RESEARCH INTERESTS

1	Advanced and sustainable manufacturing
2	Additive Manufacturing (3D/ 4D printing, Bioprinting)
3	Design, modeling and simulation of engineering system with focus on automotive engineering application
4	Design, modeling, testing and fabrication of Smart Structures and systems
5	Numerical and Computational mechanics, Multiscale modeling of homogeneous material
6	Physics based Machine learning algorithms, physics informed neural networks

PUBLICATIONS

1	A. Fallah, Q. Saleem, G. Scalet, B. Koc, "4D printing of reusable mechanical metamaterial energy absorber, experimental and numerical investigation", Smart Materials and Structures, (2025) (<u>https://doi.org/10.1088/1361-665X/addead</u>)
2	R. Nopour, A.Fallah , M. Aghdam, "Large Deflection Analysis of Functionally Graded Reinforced Sandwich Beams with Auxetic Core Using Physics-Informed Neural Network", Mechanics Based Design of Structures and Machines , (2025) (<u>https://doi.org/10.1080/15397734.2025.2462674</u>
3	S. Mirsadeghi, A. Fallah , M. Aghdam, "Physics-informed Neural Network for Bending Analysis of Two-Dimensional Functionally Graded Nano-Beams based on Nonlocal Strain Gradient Theory", Journal of Computational Applied Mechanics , (2025), (<u>10.22059/jcamech.2025.386451.1307</u>)
4	M.Nejatpour, A. Fallah, B. Koc, "An Overview of 4D Printing of Smart Multi-Functions Continuous Fiber-Reinforced Composites: Recent Advances and Novel Applications", Advanced Composites and Hybrid Materials, (2024) (<u>https://doi.org/10.1007/s42114-024-00943-1</u>)
5	M.Nejatpour, A. Fallah , B. Koc, "Shape Memory PLA/TPU Blend using High-Speed Thermo-Kinetic Mixing", ACS OMEGA , (2024), (<u>https://doi.org/10.1021/acsomega.4c04338</u>)
6	A. Fallah , Q. Saleem, B. Koc, "Assessment of mechanical properties and shape memory behavior of 4D printed continuous fiber-reinforced PETG composites", Composites Part A: Applied Science and Manufacturing , Vol 181 (2024) (<u>https://doi.org/10.1016/j.compositesa.2024.108165</u>)
7	A.Fallah, M.M. Aghdam, " <i>Physics-Informed Neural Network for Bending and Free Vibration Analysis of Three-Dimensional Functionally Graded Porous Beam Resting on Elastic Foundation</i> ", Engineering with Computers (2023) (<u>https://doi.org/10.1007/s00366-023-01799-7</u>)
8	A. Fallah, M.Altunbek, G. Cooper, A. Weightman, G. Blunn, B. Koç, P. Bartolo, B. Koc, "3D Printed scaffold design for large bone defects for improved mechanical and biological properties". Journal of Mechanical Behavior of Biomedical Material Vol 134 (2023) (https://www.sciencedirect.com/science/article/pii/S1751616122003241)
9	M. Altunbek, F. Afghah, A. Fallah , A. A. Acar, B. Koc," Design and 3D printing of personalized hybrid and gradient structures for critical size bone defects", ACS Applied Bio Materials (2023) (<u>https://doi.org/10.1021/acsabm.3c00107</u>)
10	A. Zarrabi, D Perrin, M Kavoosi, M Sommer, S Sezen, P Mehrbod, P Bhushan, F Machaj,, A. Fallah , B. Koc,S Ghavami, "Rhabdomyosarcoma: Current Therapy, Challenges, and Future Approaches to Treatment Strategies". Cancer Vol <i>15</i> (2023), pp. 261 (<u>https://doi.org/10.3390/cancers15215269</u>)
11	H. Maleki-Ghaleh, H. Siadati, A. Fallah , A. Zarrabi, F. Afghah, B. Koc, E. Dalir, J. Barar, Y. Omidi, A. Akbari-Fakhrabadi, Y. Khosrowshahi, K. Adibkia, <i>"Effect of zinc-doped hydroxyapatite/ graphene nanocomposite on the physicochemical properties and osteogenesis differentiation of 3D-printed polycaprolactone scaffolds for bone tissue engineering". Chemical Engineering Journal <u>Vol</u> <u>426(</u>2021), pp.131321 (<u>https://doi.org/10.1016/j.cej.2021.131321</u>)</i>
12	A. Fallah , S. Asif, G Gokcer, B. Koc, "4D Printing of Continuous Fiber Reinforced Electroactive Composites by Coaxial Additive Manufacturing". Composite Structures Vol 316 (2023) (<u>https://doi.org/10.1016/j.compstruct.2023.117034</u>)
13	E. Daskalakis, B. Huang, C. Vyas, F. Liu, A. A. Acar, A. Fallah , G. Cooper, A. Weightman, G. Blunn, B. Koç, P. Bartolo,"Bone Bricks: The Effect of Architecture and Material Composition on the Mechanical and Biological Performance of Bone Scaffolds" ACS omega Vol 7 (2022), pp. 7515 (<u>https://doi.org/10.1021/acsomega.1c05437</u>).

14	E. Daskalakis, MH. Hassan, AM OMAR, A. A. Acar, A. Fallah , G. Cooper, A. Weightman, G. Blunn, B. Koç, P. Bartolo, "Accelerated Degradation of Poly-ε-caprolactone Composite Scaffolds for Large Bone Defects" Polymers Vol 15 (2023), pp. 7515 (<u>https://doi.org/10.3390/polym15030670</u>).
15	E. Daskalakis, Z. Xu, A. M Omar, F. Liu, A. A. Acar, A. Fallah, G. Cooper, A. Weightman, G. Blunn, B. Koç, P. Bartolo, "In vitro evaluation of pore size graded bone scaffolds with different material composition", 3D Printing and Additive Manufacturing (2022) (<u>https://doi.org/10.1089/3dp.2022.0138</u>)
16	S. B. Hanay, A. Fallah , E. Senturk, Z. Yetim, F. Afghah, H. Yilmaz, M Culha, B. Koc, A. Zarrabi, R.S. Varma, "Exploiting urazole's ionic character for fabrication of anionic hydrogels and ion-exchange materials". Gells Vol 7 (2021), pp. 261 (<u>https://doi.org/10.3390/gels7040261</u>)
17	P. Keikhosravani, H. Maleki-Ghaleh, Z. Dargahi, M. Bodaghi, A. Khosrowshahi, M. Kavanlouei, P. Khademi-Azandehi, A. Fallah , Y. Beygi-Khosrowshahi, M. H. Siadati, "Bioactivity and antibacterial behaviors of nanostructured lithium-doped hydroxyapatite for bone scaffold application" International Journal of Molecular Sciences , 2021, <i>22</i> (17), 9214.
18	H. Maleki-Ghaleh , H. Siadati , A. Fallah , B. Koc, P. Khademi-Azandehi, F. S. Rezaei , E. Dalir, Y. Omidi, J. Barar, Y. Khosrowshahi, A.P. Kumar, K. Adibkia, " <i>Antibacterial and cellular properties of novel zinc doped hydroxyapatite/graphene nanocomposite for bone tissue engineering</i> ", International Journal of Molecular Sciences, Vol. 22 (2021). (<u>https://doi.org/10.3390/ijms22179564</u>)
19	A. Fallah , M.T. Ahmadian, " <i>Micromechanical Study of Rate-Dependent Behavior of Connective Tissue: A Nonlinear Hyper Viscoelastic Model</i> ", International journal of mechanical sciences , Vol 121 (2017),pp. 91–107.
20	A. Fallah , M.T. Ahmadian, K. Firozbakhsh, M.M. Aghdam, " <i>Micromechanical modeling of Rate-dependent behavior of Connective tissues</i> ", Journal of Theoretical Biology , Vol 416 (2017), pp. 119-128.
21	A. Fallah , M.T. Ahmadian, K. Firozbakhsh, M.M. Aghdam, " <i>Micromechanical and constitutive modeling of connective soft tissues</i> ", International journal of mechanical behavior of biomedical materials , Vol. 60, (2016), pp. 157-176.
22	H.N. Jahromi, A. Fallah, M.M. Aghdam, " <i>Nonlinear bending of functionally graded tapered beams subjected to thermal and mechanical loading</i> ". International Journal of Non-Linear Mechanics , Vol. 65, (2014), pp. 141–147.
23	H.N. Jahromi, M.M. Aghdam, A. Fallah " <i>Free vibration analysis of Mindlin plates partially resting on Pasternak foundation</i> ". International Journal of Mechanical Sciences Vol. 75 (2013), pp.1-7
24	A. Fallah , M.M. Aghdam. "Large Amplitude Free Vibration and Post Buckling Analysis of Asymmetrically Laminated Beams on Pasternak Foundation". Nonlinear Engineering – Modeling and Application. Vol. 1 (2012), pp. 35-48.
25	A. Fallah , M.M. Aghdam, M.H. Kargarnovin. " <i>Free Vibration Analysis of Moderately Thick Functionally Graded Plates on Elastic Foundation Using the Extended Kantorovich Method</i> ". Archive of Applied Mechanics . (2012). DOI: 10.1007/s00419-012-0645-1.
26	M. Zamani, A. Fallah , M.M. Aghdam. "Free Vibration Analysis of Moderately Thick Trapezoidal Symmetrically Laminated Plates with Various Combinations of Boundary Conditions". European Journal of Mechanics - A/Solids . Vol 36 (2012), pp:204-212.
27	A. Fallah , M.M. Aghdam. "Thermo-Mechanical Buckling and Nonlinear Free Vibration Analysis of Functionally Graded Beams on Nonlinear Elastic Foundation". Composites Part B: Engineering .

	Vol 43 (2012) 1523–1530.
28	Ali Fallah , Mohammad Hossein Kargarnovin, Mohammad Mohammadi Aghdam. " <i>Free Vibration Analysis of Symmetrically Laminated Fully Clamped Skew Plates Using Extended Kantorovich Method</i> ". Key Engineering Materials , Vol. 471 – 472(2011), pp. 745-750.
29	Ali Fallah, Hamid Shahsavari Alavijeh, Abdoreza Pasharavesh, Mohammad Mohammadi Aghdam. "Large Amplitude Thermo-Mechanical Vibration Analysis of Asymmetrically Laminated Composite Beams". Key Engineering Materials, Vol. 471 – 472 (2011), pp. 745-750.
30	A. Fallah , M.M. Aghdam. " <i>Nonlinear Free Vibration and Post Buckling Analysis of Functionally Graded Beams on Nonlinear Elastic Foundation</i> ". European Journal of Mechanics - A/Solids . Vol.30 (2011) 571-583.

PROJECTS

1	Tübitak, 1001 research Grant. 4D Printed Smart Electro-Active and Load-Bearing
	Composite Structures with In-Field Shape Recovery, 2021-2024, Turkey. (Grant
	Number 221M067)
	Role: Principal investigator
	Host institution: SUIMC, Sabancı University
	Duration: 36 Months- November/2021- December/2024
2	UK Engineering and Physical Sciences Research Council (EPSRC). Bone Bricks: Cost
	effective modular osseointegrated prosthetics for large bone loss surgical
	procedures
	Role: Project Postdoctoral Researcher
	Supervisor: Prof. Bahattin Koc
	Host institution: Sabancı University
	Duration: September/2019- November/2021

CONFERENCE PRESENTATIONS

1	A. Fallah , M.T. Ahmadian. "Nonlinear Free Vibration of Piezoelectric Functionally Graded Beams in Thermal Environment ",ASME 2014 International Mechanical Engineering Congress & Exposition IMECE 2014, Canada.
2	A. Fallah , M.M.Aghdam, "A New Technique for Stress Analysis of Functionally Graded Pressure Vessels Based on Bernstein Polynomials", ISME Conference 2010, Sharif university.
3	A. Fallah , M. M. Aghdam, A. R. Pasharavesh," Stress Analysis Of Functionally Graded Cylinders Subjected To Thermo-Mechanical Loads Based On Bernstein Polynomials ",ASME 2010 International Mechanical Engineering Congress & Exposition, Vancouver, Canada,2010.
4	R. Pasharavesh, A. Fallah , M. T. Ahmadian, ," Control of vibration amplitude, frequency and damping of an electrostatically actuated microbeam using capacitive, inductive and resistive elements ",ASME 2010 International Mechanical Engineering Congress & Exposition, Vancouver, Canada,2010.
5	A. Fallah , M.M. Aghdam," Bending analysis of laminated skew plates using extended Kantorovich method", The 2 nd International Conference on Composites, Characterization, Fabrication and Application, Kish Island, Iran, 2010
6	A. Fallah , M.H. Kargarnovin, M.M. Aghdam, "Free Vibration Analysis of Functionally Graded Plates on Elastic Foundation Using Extended Kantorovich Method", 16th International Conference on Composite Structures ICCS 16, Porto, Portugal, 2011.
7	A. Fallah , M.H. Kargarnovin, M.M. Aghdam, "Free Vibration Analysis of Symmetrically Laminated Fully Clamped Skew Plates Using Extended Kantorovich Method", Eighth international conference on composite science and technology, Kuala Lumpur, Malaysia, 2011
8	A. Fallah , H. Shahsavari, A.R. Pasharavesh, M.M Aghdam, "Large Amplitude Thermo-Mechanical Vibration Analysis of asymmetrically Laminated Composite Beams", Eighth international conference on composite science and technology, Kuala Lumpur, Malaysia, 2011
9	A. Fallah , K. Firozbakhsh, MH. Kahrobaiyan, A. Pasharaveh, "Nonlinear Free Vibration Of Nanobeams With Surface Effects Considerations", ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011,

	Washington, DC, USA
10	A. Fallah , K. Firozbakhsh, A. Pasharaveh, "Nonlinear Thermo-Mechanical Vibration Analysis of Functionally Graded Beams ", ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011, Washington, DC, USA
11	Y. Alizadeh, A. Pasharaveh, MT Ahmadian, A. Fallah , "Static Analysis Of Electrically Actuated Nano To Micron Scale Beams Using Nonlocal Theory ", ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011, Washington, DC, USA
12	MT Ahmadian, A. Pasharaveh, A. Fallah , "Application Of Nonlocal Theory In Dynamic Pull-In Analysis Of Electrostatically Actuated Micro And Nano Beams", ASME 2011 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE 2011, Washington, DC, USA
13	MH. Kahrobaiyan, MT Ahmadian, A. Fallah , K. Firozbakhsh, " On the static pull-in of circular microplates under capillary force", ASME 2011 International Mechanical Engineering Congress & Exposition IMECE 2011, USA.

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	960
H-index (ISI Web of Science):	17

COURSES GIVEN

1 AE428- Chassis Design

THESES SUPERVISED

1	MSc Thesis, Atakan Alkan
	4D printing of smart Composite Structures
	2024.
	Role: Advisor
	Institute: Faculty of Engineering and Natural Science, Sabanci University
	MSc Thesis, Saba Sadat Mirsadeghi Esfehani
	Physics-informed neural network for bending analysis of functionally graded nano-
2	beams based on nonlocal strain gradient theory
2	2025.
	Role: Co-supervisor
	Institute: Department of Mechanical Engineering, Amirkabir University of Technology