

Hadi Taghizadeh (PhD)

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Education

Ph.D. in Biomedical Engineering (Biomechanics) (sept. 2010- sept. 2015)

- Biomedical engineering department, Amirkabir University of Technology, Tehran, Iran
- Thesis: *Effects of Medial Lamellar structure on Hyperelastic Behavior of Arterial Wall*
- Supervisor: Prof. M. Tafazzoli-Shadpour

Research Assistant (Mar. 2014- sept. 2014)

- Biomechanical engineering department, Graz University of Technology, Graz, Austria
- Supervisor: Prof. G. A. Holzapfel

M.Sc. in Biomedical Engineering (Biomechanics) (sept. 2008- sept. 2010)

- Biomedical engineering department, Amirkabir University of Technology, Tehran, Iran
- Thesis: *3D modeling of the cortical Haversian bone and analyzing of micro-crack propagation*
- Supervisor: Dr. A. R. Arshi

B.Sc. in Biomedical Engineering (Biomechanics) (sept. 2004- sept. 2008)

- Biomedical engineering department, Amirkabir University of Technology, Tehran, Iran Thesis: Biomechanical analysis of the structure and mechanical properties of liver tissue
- Supervisor: Prof. S. Najarian

Professional Appointments

- Assistant Prof. of Biomechanics, Biomedical Eng. Dept. Sahand Uni. of Tech., Tabriz, Iran (Sept. 2015, Jul. 2022)
- Associate Prof. of Biomechanics, Biomedical Eng. Dept. Sahand Uni. of Tech., Tabriz, Iran (Jul. 2022, now)

Research Interests

- Mechanics of Cardiovascular tissues and cells
- Mechanical characterization of soft biomaterials
- Constitutive modeling of soft biological tissues
- Cardiovascular solid biomechanics in health and diseases
- Mechanobiology of Hypertension, Atherosclerosis and Aneurysm
- Microstructural modeling of soft-hard interfaces
- Adaptation

Courses Taught

Undergraduate:

- Statics
- Computer Programming
- Strength of Materials
- Fluid Mechanics
- Medical physics
- Rehabilitation principles
- Research Methodology

Graduate:

- Tissue Mechanics
- Cell Mechanics
- Cardiovascular biomechanics

Selected Publications

- **Taghizadeh, H.**, Taghizadehghalehjoughi, A., Yildirim, S., Ozkaraca, M., Genc, S., Yeni, Y., Mokresh, M.Y., Hacimuftuoglu, A., Tsatsakis, A. and Tsarouhas, K., **2022**. Deteriorated Vascular Homeostasis in Hypertension: Experimental Evidence from Aorta, Brain, and Pancreatic Vasculature. *Journal of Personalized Medicine*, *12*(10), p.1602.
- Samaee, M., Nooraeeen, A., Tafazzoli-Shadpour, M. and **Taghizadeh, H.**, **2022**. A comparison of Newtonian and non-Newtonian pulsatile blood rheology in carotid bifurcation through fluid–solid interaction hemodynamic assessment based on experimental data. *Physics of Fluids*, *34*(7), p.071902.
- **Taghizadeh, H.** and Amini, F., **2022**. Numerical simulation of coronary artery plaque and analysis of plaque calcification and Fibrous cap thickness impact on resulting stress patterns. *Iranian Journal of Biomedical Engineering.*, *16*(1), p1-10.
- Ahmadpour-B, M., Nooraeeen, A., Tafazzoli-Shadpour, M. and **Taghizadeh, H.**, **2021**. Contribution of atherosclerotic plaque location and severity to the near-wall hemodynamics of the carotid bifurcation: an experimental study and FSI modeling. *Biomechanics and Modeling in Mechanobiology*, *20*(3), pp.1069-1085.
- Taghizadeh, Y., Chitsazan, A., Pezeshki, S., **Taghizadeh, H.** and Rouhi, G., **2021**. Total ankle replacement along with subtalar joint arthrodesis: In-vitro and in-silico biomechanical investigations. *International Journal for Numerical Methods in Biomedical Engineering*, *37*(9), p.e3514.
- **Taghizadeh, H.**, **2021**. Mechanobiology of the arterial tissue from the aortic root to the diaphragm. *Medical Engineering & Physics*, *96*, pp.64-70.
- Sedighpour, D. and **Taghizadeh, H.**, **2022**. The effects of mutation on the drug binding affinity of Neuraminidase: case study of Capsaicin using steered molecular dynamics simulation. *Journal of Molecular Modeling*, *28*(2), pp.1-7.
- Sadeghi, S. and **Taghizadeh, H.**, **2020**. Microstructural modeling of Achilles Tendon biomechanics focusing on bone insertion site. *Medical Engineering & Physics*, *78*, pp.48-54.
- **Taghizadeh, H.**, **2020**. Application of the Bridgman Method in More Accurate Determination of Uniaxial Mechanical Properties of Liver. *Iranian Journal of Biomedical Engineering*, *14*(1), pp.23-30.
- **Taghizadeh, H.** and Tafazzoli-Shadpour, M., **2017**. Characterization of mechanical properties of lamellar structure of the aortic wall: effect of aging. *Journal of the mechanical behavior of biomedical materials*, *65*, pp.20-28.
- **Taghizadeh, H.**, Tafazzoli-Shadpour, M., Shadmehr, M.B. and Fatouraee, N., **2015**. Evaluation of biaxial mechanical properties of aortic media based on the lamellar microstructure. *Materials*, *8*(1), pp.302-316.
- **Taghizadeh, H.**, Tafazzoli-Shadpour, M. and Shadmehr, M.B., **2015**. Analysis of arterial wall remodeling in hypertension based on lamellar modeling. *Journal of the American Society of Hypertension*, *9*(9), pp.735-744.
- **Taghizadeh, H.** and Shadpour, M.T., **2013**. Structurally motivated models of the arterial wall tissue. *Journal of Multiscale Modelling*, *5*(04), p.1330002.