

CURRICULUM VITÆ

Nooshin Haghhighipour

National Cell Bank of Iran, Pasteur Institute of Iran,
Pasteur Institute of Iran(IPI), NO. 69, Pasteur Ave, Tehran, Iran, 1316943551
Tel&fax: (+9821) 66492595
E-mail: haghhighipour@pasteur.ac.ir

Education

- 2009-2010: Post-doctoral Fellowship
Tissue Engineering Laboratory
National Cell Bank of Iran, Pasteur Institute of Iran
- 2008: PhD,
Amirkabir University of Technology (Tehran Polytechnic),
Medical Engineering, Biomechanics
Title of thesis: Biomechanical analysis of dynamic loading on the behavior of vascular endothelial cells
- 2001: MS,
Amirkabir University of Technology (Tehran Polytechnic),
Medical Engineering, Biomechanics
Title of thesis: Effects of circumferential residual stress on the non-linear tensile stress profile across the arterial wall with finite element method
- 1999: BS,
Iran University of Science and Technology
Mechanical engineering, solid mechanics

Scientific Employment And Academic Responsibilities

Years	Title
2010- Present	Assistant Professor, Tissue Engineering Laboratory and Routine Cell Culture Laboratory National Cell Bank of Iran, Pasteur Institute of Iran.
2009-	Teaching: Cell Banking, Stem Cell Engineering, Biomechanics

Present	Pasteur Institute of Iran: Cell Culture Systems. Amirkabir University of Technology (Tehran Polytechnic): Cell Culture Systems. Sharif University of Technology Iran University of Science and Technology University of Tehran Iran University of Medical Sciences
2005- Present	Collaborator of projects, Tissue Engineering Laboratory, National Cell Bank of Iran, Pasteur Institute of Iran.
2004- 2005	Consultant of Medical Engineering Projects Industrial Development and Renovation Organization of Iran
2001- 2005	Teaching Assistant Amirkabir University of Technology (Tehran Polytechnic), Department of Biomedical Engineering, Division of Biomechanics Courses: Dynamics, Principles of Rehabilitation, Solid Mechanics, English for Biomedical Engineers
1998- 1999	Manager of Quality Control Unit Shayan-Sanat Company

Research Interests And Experiences

- Biomedical Engineering

Stem Cell Engineering

Cell Mechanics

Tissue Engineering

Regenerative medicine

- Cell Culture (Cell bank of Pasteur Inst. of Iran)

Current and Completed Research Projects (director and collaborator)

No.	Years	Title
1	2015-present	Effect of mechanical environment on the fate of mesenchymal stem cells for osteochondral tissue in silk fibroin- fibroin nano fibers multilayered nano-composite scaffolds Stem Cell Laboratory, Cell bank of Pasteur Inst. of Iran Faculty of New Sciences & Technologies - Tehran University
2	2014- present	Evaluation of differentiation of mesenchymal stem cells into chondrocytes and tenocytes by engineering of cell morphology Stem Cell Laboratory, Cell bank of Pasteur Inst. of Iran

3	2014- present	Evaluation of effects of fibronectin on physiochemical and biocompatibility properties of carbon single wall nanotube Stem Cell Laboratory, Cell bank of Pasteur Inst. of Iran
4	2013- present	Effect of PCL/collagen nanofiber with grephene layers scaffold on adipose stem cell differentiation into neural cell under magnetic field Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
5	2013- 2015	Evaluation of proliferation and differentiation of stem cells cultured in 3 dimensional modified alginate and a specialized cartilage tissue engineering bioreactor Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
6	2012- 2014	Design and manufacture of bioreactor of human blood pressure wave in order to differentiate mesenchymal stem cells to arterial endothelial cells Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
7	2012- 2013	Differentiation of mesenchymal stem cells into osteoblast by means of mechanical loadings, growth factors and electromagnetic fields and repair of bone damage in Rat Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
8	2011- 2013	Effect of cyclic hydrostatic pressure on proliferation and chondrogenic differentiation of mesenchymal stem cells , and regeneration of cartilage tissue in rabbit Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
9	2011- 2012	Effect of mechanical stimulation on markers expression in dental pulp stem cells Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran- Shahid Beheshti Medical University, School of dentistry
10	2011- 2012	Effect of mechanical stimulation on markers expression in human mesenchymal stem cells Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran- Shahid Beheshti Medical University, School of dentistry
11	2010- 2012	Comparison of chemical induction and applying cyclic hydrostatic pressure on proliferation and differentiation of human mesenchymal stem cells into chondrocytes Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
12	2009- 2012	Evaluation of Rabbit Myocardial Repair With Transplantation Cardiomyocytes Differentiated From Mesenchymal And Animal Adipose-Derived Stem Cells By Mechanical Loading Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
13	2009- 2011	The Generation of Living Skin Containing Biocompatible Scaffold and Stem Cells and It Evaluation in Regeneration of Experimental Animal Burn Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
14	2009- 2010	Tissue Engineering of Tendon by Nanofabricated Scaffold Mesychanmal Cells Tissue Engineering Laboratory, Cell bank of Pasteur Inst. of Iran
15	2008- 2009	Design and Manufacturing of a Tensile Cyclic Device for Soft Tissues and Cultured Cells Iran National Science Foundation (INSF) Medical Engineering Department -Amirkabir University of Technology
16	2006-	Biomechanical Analysis of Arterial Endothelial Cells Reflection to Cyclic Loading

	2008	Tissue Engineering Laboratory, Cell Bank of Pasteur Inst. of Iran- Medical Engineering Department - Amirkabir University of Technology
--	------	--

Patents, Honor and Awards

2015	Bioreactor of Blood Pressure Wave (Patented in Iran)
2015	Bioreactor of Compressive Pressure and Fluid Flow in Cell Box
2015	Member of Health Biotechnology Convention
2013	Vertical Vibration Device of Cultured Cells (Patented in Iran)
2012	Shear Stress-Cyclic Stretch Device of Cultured Cells (Patented in Iran)
2011	Cyclic Hydrostatic Pressure Device of Cultured Cells (Patented in Iran)
2011	Cyclic Multiaxial Stretch Device of Cultured Cells (Patented in Iran)
2011	Member of Iranian Biomedical Engineering Society
2007	Fatigue Tensile Device of Soft Tissues and Cultured Cells (Patented in Iran)
2001	First rank among MS students in Medical engineering Medical Engineering Department -Amirkabir University of Technology

Thesis supervisor/advisor

No.	Date	Title
1	2015- present	Ph.D. Effect of mechanical environment on the fate of mesenchymal stem cells for osteochondral tissue in silk fibroin- fibroin nano fibers multilayered nano-composite scaffolds to repair the damages caused by the infection of the bone and cartilage Faculty of New Sciences & Technologies University of Tehran
2	2014-present	Ph.D. Tissue Engineering of Blood Vessel by Polyurethane Nanofibrous Scaffold School of Advanced Technologies in Medicine University of Tehran
3	2015- present	M.S. Effect of Equiaxial Cyclic Strain on Cardiomyogenic Differentiation of Rabbit adipose derived Mesenchymal Stem cells Medical Engineering Department, Biomechanics Amirkabir University of Technology

4	2015- present	M.S. The Role of Electrical Conductivity upon Neural Cells Behavior and Differentiation in Nanocomposites Based on TPU/CNT Polymer & Color Engineering Department Amirkabir University of Technology
5	2014-present	M.S. Experimental Study of Proliferation of Stem Cells on a Scaffold in the Perfusion Bioreactor Chemical & Petroleum Engineering Department Sharif University of Technology
6	2014-2015	M.S. Effect of Cyclic Uniaxial Stress and Morphology of Membrane on Differentiation of Stem Cells into Tenocytes Medical Engineering Department, Biomaterials Iran University of Science and Technology
7	2014-present	M.S. Fabrication of Composite Nanoscaffold of Collagen/Polycaprolactone Nanofiber with Graphene Sheet in Order to Investigate the Differentiation of Adipose Stem Cell into Neural Cells on the Electromagnetic Field Medical Engineering Department, Tissue Engineering Amirkabir University of Technology
8	2014-2015	M.S. Evaluation of the Effects of Mechanical Parameters on Morphology and Cytoskeleton Structure of Mesenchymal Stem Cells in Differentiation Process with Experimental Method Medical Engineering Department, Biomechanics Amirkabir University of Technology
9	2013-2014	M.S. Design and Fabrication of a Microbioreactor to Study the Effects of Mechanical Simulations on the Cell Fate Medical Engineering Department, Tissue Engineering Amirkabir University of Technology
10	2013-2014	M.S. Evaluation of Continuous Differentiation of Mesenchymal Stem Cells into Endothelial Cells Under the Chemical Stimulation and Flow Stress in Perfusion Bioreactor Faculty of New Sciences & Technologies University of Tehran
11	2013-2014	M.S. Study of the Effect of Purification in Mesenchymal Stem Cells Derived From Human Adipose Tissue Over Their Differentiation into Endothelial Cells Under the Chemical Factors and Shear Stress in

		Perfusion Bioreactor Faculty of New Sciences & Technologies University of Tehran
12	2012-2014	M.S. Experimental and Finite Element Analysis of Specific Cells Under Mechanical Load Using Confocal Microscopy Imaging Faculty of New Sciences & Technologies University of Tehran
13	2013-2014	M.S. Experimental and CFD study of specific cells in fluid flow: study of the effect of fluid flow parameters on cell response Faculty of New Sciences & Technologies University of Tehran
14	2013-2014	B.S. Effect of Electromagnetic Field on Differentiation of Human Follicle Dermal Papilla Stem Cells into neuron Medical Engineering Department, Biomaterials Amirkabir University of Technology
15	2012-2013	M.S. The Role of Modulus and Viscoelastic Behavior of PP/EPDM/Nano Hydroxyapatite Nanocomposites Thermoplastic Elastomer in Cell Compatibility and Osteoblast Differentiation Polymer & Color Engineering Department Amirkabir University of Technology
16	2012-2013	M.S. Modeling and Optimizing of Flow Shear Stress on the Cultured Cells in a Hollow Fiber Bioreactor Chemical Engineering Department University of Tehran
17	2012-2013	M.S. Modeling of Fluid Hydrodynamic Effect and Validity of Data in Cell Cultured Bioreactor Chemical Engineering Department University of Tehran
18	2012-2013	M.S. Effect of Electromagnetic Field on Chondrogenic Differentiation of Mesenchymal Stem Cells Kish International Campus University of Tehran
19	2012-2013	M.S. Studying the Effect of Fluid Stress on Adhesiveness of Vascular Endothelial Cells Cultured on the Scaffold Using Produced Metabolites in a Bioreactor

		Faulty of New Sciences & Technologies University of Tehran
20	2012-2013	M.S. Investigating Adipose-derived Stem Cells Differentiation into Endothelial Cells on Biocompatible Scaffold under Flow Stress in Perfusion Bioreactor Faulty of New Sciences & Technologies University of Tehran
21	2012-2013	M.S. The Effect of Shear Stress on Osteogenic Differentiation of Mesenchymal Stem Cell Mechanical Engineering Department Sahand University of Technology
22	2012-2013	M.S. Influence of Mechanical Properties of Substrate on Cell-Surface Adhesion: Experimental Medical Engineering Department, Biomechanics Amirkabir University of Technology
23	2011-2012	M.S. Modeling of Energy Distribution Rate of Animal Cells in Cell Culture Bioreactor and Its Validation Chemical Engineering Department University of Tehran
24	2011-2013	Ph.D. Functional Differentiation of Mesechymal Stem Cell to Endothelial Cell by Concurrent Tensile and Shear Loadings Medical Engineering Department, Biomechanics Amirkabir University of Technology
25	2011-2012	B.S. Investigate the Possibility of Transferring of Cells into the Hydrogel Structure by Electromagnetic Field Medical Engineering Department, Biomechanics Amirkabir University of Technology
26	2010-2012	M.S. Effects of Cyclic Shear Stress and Strech on Diffrentiation of Mesenchymal Stem Cells into Endothelial cells Medical Engineering Department, Biomechanics Amirkabir University of Technology
27	2010-2012	M.S. Study of Chondrogenic Differentiation of Mesenchymal Stem Cells Exposed to Combined Shear with Hydrostaic Pressure Loadings Medical Engineering Department, Biomechanics Amirkabir University of Technology
28	2010-2012	M.S.

		<p>Effect of Amplitude and Duration of Cyclic Hydrostatic Pressure on Differentiation of Mesenchymal Stem Cells</p> <p>Medical Engineering Department, Biomechanics</p> <p>Amirkabir University of Technology</p>
29	2009-2011	<p>Ph.D.</p> <p>The Role of Biomechanical Stimuli in Myogenic Induction of Marrow Stromal Cells, Adipose-Driven Stem Cells and Satellite Cells of Adult Rat</p> <p>Shahid Beheshti Medical University</p>
30	2009-2011	<p>M.S.</p> <p>Effects of Mechanical Loading on Mouse Embryonic and Mesenchymal Stem Cell Differentiation to Myoskeletal Cells</p> <p>Khatam University</p>
31	2009-2011	<p>M.S.</p> <p>Effects of Mechanical Loading and Pulsed Electromagnetic Field on Osteogenic Differentiation of Mesenchymal Stem Cell</p> <p>Khatam University</p>
32	2009-2011	<p>M.S.</p> <p>The generation of living skin containing biocompatible scaffold and stem cells and its evaluation in regeneration of experimental animal burn</p> <p>Khatam University</p>
33	2009-2011	<p>M.S.</p> <p>Effects of Mechanical Loading on Human Bone Marrow Stem Cells Differentiation to Myoskeletal Cells</p> <p>Khatam University</p>
34	2008-2010	<p>M.S.</p> <p>Effects of Mechanical Loading on Mesenchymal Stem Cell Differentiation to Cardiomyocytes</p> <p>Medical Engineering Department, Biomechanics</p> <p>Amirkabir University of Technology</p>
35	2008-2010	<p>M.S.</p> <p>Effects of Mechanical Loading on Differentiation of Mesenchymal Stem Cell to Chondrocytes</p> <p>Medical Engineering Department, Biomechanics</p> <p>Amirkabir University of Technology</p>
36	2007-2008	<p>M.S.</p> <p>Experimental Study and FSI Analysis of Blood Flow in Models of Stenosed Arteries</p> <p>Medical Engineering Department, Biomechanics</p> <p>Amirkabir University of Technology</p>

Publications

- 1-Jazayeri M, Shokrgozar M.A., **Haghighipour N.**, Bolouri B., Mirahmadi F., Farokhi M., Effects of Electromagnetic Stimulation on Gene Expression in Mesenchymal Stem Cells and Repair Bone Lesions, *Journal of Biomaterials and Tissue Engineering*, 2015, accepted.
- 2-Ghaemi R., Vahidi B., Sabou M.H., **Haghighipour N.**, Alihemmati Z., Fluid-Structure Interactions Analysis of Shear-Induced Modulation of a Mesenchymal Stem Cell: An Image-Based Study, *Artificial Organs*, 2015, accepted.
- 3-Shojaei S., Tafazzoli-Shahdpour M., Shokrgozar M.A., **Haghighipour N.**, *Comparative Analysis of Effects of Cyclic Uniaxial and Equiaxial Stretches on Gene Expression of Human Umbilical Vein Endothelial Cells*, *Cell Biology International*, 39(6), 2015 Jun,741-9.
- 4-Kabirian F., Amoabediny G., **Haghighipour N.**, Salehi-Nik N., Zandieh-Doulabi B., *Nitric Oxide Secretion by Endothelial Cells in Response to Fluid Shear Stress*, *Journal of Biomedical Materials Research: Part A*, 103A, 2015, 1231-1237.
- 5- Alihemmati Z., Vahidi B., **Haghighipour N.**, Numerical Analysis of a Single Cultured Mesenchymal Stem Cell Under Pressure Stimulation Using Atomic Force Microscopy and Finite Element Method, *Iranian Journal of Biomedical Engineering*, 8, 2014, 135-149.
- 6- Khani M.M., Tafazzoli-Shadpour M., Goli-Malekabadi Z., **Haghighipour N.**, *Mechanical Characterization of Human Mesenchymal Stem Cells Subjected to Cyclic Uniaxial Strain and TGF- β 1*, *Journal of the Mechanical Behavior of Biomedical Materials*, 43, 2015, 18-25.
- 7-Tabatabaei F.S., Jazayeri M., Vahid Dastjerdi E., Ghahari P., **Haghighipour N.**, *Effects of Equiaxial Strain on the Differentiation of Dental Pulp Stem Cells without Using Biochemical Reagents*, *Molecular & Cellular Biomechanics*, 11(3), 2014, 209-220.
- 8- Anisi F., Salehi-Nik N., Amoabediny G., Pouran B., **Haghighipour N.**, Zandieh-Doulabi B., *Applying Shear Stress to Endothelial Cells in a New Perfusion Chamber: Hydrodynamic Analysis*, *Journal of Artificial Organs*, 17, 2014, 329-336.
- 9- Norizadeh Abbariki T., Mashinchian O., Shokrgozar M.A., **Haghighipour N.**, Sen T., Mahmoudi M., *Superparamagnetic Nanoparticles Direct Differentiation of Embryonic Stem Cells into Skeletal Muscle Cells*, *Journal of Biomaterials and Tissue Engineering*, 4(7), 2014, 579-585.
- 10- Norizadeh Abbariki T., Shokrgozar M.A., **Haghighipour N.**, Aghdami N., Mahdian R., Amanzadeh A., Jazayeri M., *Comparing the Effect of Uniaxial Cyclic Mechanical Stimulation and Chemical Factors on Myogenin and Myh2 Expression in Mouse Embryonic and Bone Marrow Derived Mesenchymal Stem Cells*, *Molecular and Cellular Biomechanics*, 11(1), 2014, 019-037.
- 11- Safshekan F., Tafazzoli Shadpour M., Shokrgozar M.A., **Haghighipour N.**, Alavi S.A., *Effects of Short-Term Cyclic Hydrostatic Pressure on Initiating and Enhancing the Expression of Chondrogenic Genes in Human Adipose-Derived Mesenchymal Stem Cells*, *Journal of Mechanics in Medicine and Biology*, 14(4), 2014, 1450054.
- 12- Shojaei S., Tafazzoli-Shahdpour M., Shokrgozar M.A., **Haghighipour N.**, *Alteration of Human Umbilical Vein Endothelial Cell Gene Expression in Different Biomechanical Environments*, *Cell Biology International*, 38(5), 2014, 577-581.
- 13- Karkhaneh A., Naghizadeh Z., Shokrgozar M.A., Bonakdar S., Solouk A., **Haghighipour N.**, Effects of Hydrostatic Pressure on Biosynthetic Activity During Chondrogenic Differentiation of MSCs in Hybrid Scaffolds, *International Journal of Artificial Organs*, 2(37), Mar 2014, 142-8.

- 14- Halvaei M., Solouk A., Abolfathi N., Haghhighipour N., Eskandari M., Shokrgozar M.A., *A Review on the Effect of Mechanical Stimulations on the Fate of Stem Cells*, Modares Journal of Medical Sciences: Pathobiology, 16(3), Autumn 2013, 1-23.
- 15-Shojaei S., Tafazzoli-Shahdpour M., Shokrgozar M.A., **Haghhighipour N.**, Safaei, N., Mahdian R., *The Influence of Cyclic and Uniform Shear Stresses Concurrent with Cyclic Stretch on the Gene Expression of Human Umbilical Vein Endothelial Cells*, Journal of Biomaterials and Tissue Engineering, 3(6), December 2013 , 673-678.
- 16-Amin S., Banijamali S.E., Tafazzoli-Shadpour M., Shokrgozar M.A., Dehghan M.M., **Haghhighipour N.**, Mahdian R., Bayati V., Abbasnia P., *Comparing the Effect of Equiaxial Cyclic Mechanical Stimulation on GATA4 Expression in Adipose-Derived and Bone Marrow-Derived Mesenchymal Stem Cells*, Cell Biology International, 38, 2014, 219-227 .
- 17-Shojaei S., Tafazzoli-Shahdpour M., Shokrgozar M.A., **Haghhighipour N.**, *Effects of Mechanical and Chemical Stimuli on Differentiation of Human Adipose-Derived Stem Cells into Endothelial Cells*, International Journal of Artificial Organs 36(9), 2013, 663-673.
- 18- Shojaei S., Farokhi M., Omidvar R., Mottaghtalab F., **Haghhighipour N.**, Shokrgozar M.A., Ai J., *Essential Functionality of Endometrial and Adipose Stem Cells in Normal and Mechanically Motivated Conditions*, Journal of Biomaterials and Tissue Engineering 3, 2013, 581-588.
- 19- Salehi-Nik N., Amoabediny G., Shokrgozar M.A., Mottaghy K., Pouran B., **Haghhighipour N.**, Zandieh-Doulabi B., Tabesh H., Khatibi N., Anisi F., *Engineering Parameters in Bioreactor's Design: A Critical Aspect in Tissue Engineering*, BioMed Research International, 2013, Article ID762132,15pages.
- 20-Tabatabaei F.S., Vahid Dastjerdi M., Jazayeri M., **Haghhighipour N.**, Vahid Dastjerdie E., Bordbar M., *Comparison of Osteogenic Medium and Uniaxial Strain on Differentiation of Endometrial Stem Cells*, Dental Research Journal, 10(2), March 2013, 190-196.
- 21- Hatami J., Tafazzoli-Shadpour M., **Haghhighipour N.**, Shokrgozar M.A., Janmaleki M., *Influence of Cyclic Stretch on Mechanical Properties of Endothelial Cells*, Experimental Mechanics, 53(8), 2013, 1291-1298.
- 22- Safshekan F., Tafazzoli Shadpour M., Shokrgozar M.A., **Haghhighipour N.**, Mahdian R., Hemmati A., *Intermittent Hydrostatic Pressure Enhances Growth Factor-Induced Chondroinduction of Human Adipose-Derived Mesenchymal Stem Cells*, Artificial Organs, 36(12), 2012, 1065-1071.
- 23- Hosseini M.S., Amjadi I., **Haghhighipour N.**, *Preparation of Poly (Vinyl Alcohol)/Chitosan-Blended Hydrogels: Properties, in Vitro Studies and Kinetic Evaluation*, Journal of Biomimetics, Biomaterials & Tissue Engineering, 15, 2012, 63-72.
- 24- Shokrgozar M.A., Fattahi M., Bonakdar S., Ragerdi Kashani I., Majidi M., **Haghhighipour N.**, Bayati V., Sanati H., Saeedi S.N., *Healing Potential of Mesenchymal Stem Cells Cultured on a Collagen-Based Scaffold for Skin Regeneration*, Iranian Biomedical Journal, 16 (2), April 2012, 68-76.
- 25- Hosseini M.S., Tazzoli Shadpour M., Amjadi I., **Haghhighipour N.**, Shokrgozar M.A., Ghafourian Boroujerdnia M., *Relationship between Cell Compatibility and Elastic Modulus of Silicone Rubber/Organoclay Nanobiocomposites*, Jundishapur Journal of Natural Pharmaceutical Products,

7(2), 2012, 65-70.

26- **Haghighipour N.**, Heidarian S., Shokrgozar M.A., Amirizadeh N., *Differential effects of cyclic uniaxial stretch on human mesenchymal stem cell into skeletal muscle cell*, Cell Biology International, 36(7), 2012, 669-675.

27- Tabatabaei F.S., Vahid Dastgerdi E., Nojehdian H., **Haghighipour N.**, Jondoghi Z., Moaier F., *Effect of uniaxial and multiaxial dental forces on human mesenchymal stem cells*, Journal of Dental School Shahid Beheshti University of Medical Science, 29(5), 2012, 368-375.

28- Bayati V., Sadeghi Y., Shokrgozar M.A., **Haghighipour N.**, Azadmanesh K., Amanzadeh A., Azari S., *The Evaluation of Cyclic Uniaxial Strain on Myogenic Differentiation of Adipose-derived Stem Cells*, Tissue and Cell, 43, 2011, 359-366.

29- Rabbani M., Tafazoli Shadpour M., Shokrgozar M.A., Janmaleki M., Amirizade N., **Haghighipour N.**, *Effects of combined cyclic-static stretch on orientation and proliferation of human mesenchymal stem cells*, Modares Journal of Medical Sciences: pathobiology, 13(4), 2011, 33-42.

30- **Haghighipour N.**, Tafazzoli Shadpour M., Avolio A., *Residual Stress Distribution in a Lamellar Model of the Arterial Wall*, Journal of Medical Engineering & Technology, 35(7-8), 2010, 422-428.

31- **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., Amini S., *Effects of Cyclic Stretch Waveform on Endothelial Cell Morphology using Fractal Analysis*, Artificial Organs, 34(6), 2010, 481-490.

32- Ghazanfari S., Tafazzoli-Shadpour M., Shokrgozar M. A., **Haghighipour N.**, Amirizadeh N., Jafar Gholi Rangraz E., *Analysis of Alterations in Morphologic Characteristics of Mesenchymal Stem Cells by Mechanical Stimulation during Differentiation into Smooth Muscle Cells*, Yakhteh Medical Journal, 12(1), 2010, 73-80.

33- Hatami J., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., *Evaluation of Effects of Cyclic Loading on Structural Properties of Cultured Endothelial Cell*, Modares Journal of Medical Sciences: pathobiology, 12(4), 2010, 19-30.

34- **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., Amini S., Amanzadeh A., Khorasani M.T., *Topological Remodeling of Cultured Endothelial Cells by Characterized Cyclic Strains*, Molecular and Cellular Biomechanics Journal, 4(4), 2007, 189-199.

35- **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., Amini S., *Study of Effects of Cyclic Tensile Loading on Morphology of Human Umbilical Vein Endothelial Cell Line in Cultured Medium*, Yakhteh Medical Journal, 9(2), 2007, 111-118.

36- **Haghighipour N.**, Tafazzoli Shadpour M., Najarian S., *Effects of Circumferential Residual Stress on the Nonlinear Circumferential Stress Distribution of the Arterial Wall by Finite Element Modeling*, Daneshvar Bargh, 1(1), 2007, 29-38.

Conferences Presentations

- 1-Safavi A., Rouhi G., **Haghighipour N.**, *A novel mechanobioreactor for regulating mesenchymal stem cell fate*, International Conference on Cells and Regenerative Medicine, May 22-25 2015, Mashhad, Iran.
- 2-Hasanzadeh E., Amoabediny G.H., **Haghighipour N.**, Amirzadeh N., Mohammadnejad J., Gholami N., *Investigation of FLK-1 Gene Expression in Differentiated Mesenchymal Stem Cells, Exposed to Chemical, Mechanical and Chemical-Mechanical Factors, in Order to Study the Differentiation and Its Stability*, 2nd Annual Congress Stem Cell Research and Application, 22-23 May 2014, Mashhad, Iran.
- 3- Gholami N., Amoabediny G.H., **Haghighipour N.**, Amirzadeh N., Mohammadnejad J., Hasanzadeh E., *Effect of Purification of Human Adipose-derived Mesenchymal Stem Cells on the Expression of Vwf Cell Factor Under Chemical and Mechanical Conditions*, 2nd Annual Congress Stem Cell Research and Application, 22-23 May 2014, Mashhad, Iran.
- 4- Gholami N., Amoabediny G.H., **Haghighipour N.**, Amirzadeh N., Mohammadnejad J., Hasanzadeh E., Janzamin E., *Evaluation of the VE-cadherin Gene Expression in Adipose Derived Stem Cells and Purified Mesenchymal Stem Cells Under Chemical and Mechanical Stimuli*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 5- Hasanzadeh E., Amoabediny G.H., **Haghighipour N.**, Amirzadeh N., Mohammadnejad J., Gholami N., Janzamin E., *Effects of Growth Factor and Shear Stress on the Stability of Differentiation of Mesenchymal Stem Cells, Based on the Expression of VE-cadherin Gene*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 6- Kavand H., **Haghighipour N.**, Zeynali B., Elahi E., Abd Emami B., *Pulsed Electromagnetic Field Enhances SOX9 Gene Expression in Adipose-Derived Mesenchymal Stem Cells Encapsulated in Alginate Hydrogels*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 7- Mirahmadi F., Jalali S., Taffazoli-Shadpour M., Omidvar R., **Haghighipour N.**, *The Effect of Substrate Elasticity on Cell Adhesion Force of Endothelial Cells*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 8- Moraveji M., **Haghighipour N.**, Keshvari H., Nourizadeh Abbariki T., Shokrgozar M.A., Amanzadeh A., *Neural Stimulation of Human Hair Follicle Dermal Papilla Stem Cells by Extremely Low Frequency Electromagnetic Field*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 9- Safavi A.S., Rouhi G., **Haghighipour N.**, Abd Emami B., *Mechanical Vibration As a Physical Means to Influence Stem Cell Fate, Promoting Bone-Specific Gene Expression In Vitro.*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 10- Mokhtari-Jafari F., Amoabediny G.H., **Haghighipour N.**, Zarghami R., Saatchi A., Akbari J., Mehboudi N., *Mathematical Modelling of Dynamic Culture in the Perfusion Bioreactor on a Three Dimensional Model of Bone Formation*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.
- 11- Banikarimi S.P., Amoabediny G.H., Vahidi B., **Haghighipour N.**, Salehi-Nik N., *Investigation of Endothelial Cells Detachment Under the*

Fluid Flow Shear Stress in a Parallel Plate Hollow Fiber Bioreactor, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.

12- Alihemmati Z., Vahidi B., **Haghighipour N.**, *Mechanical Modulation Analysis of Mesenchymal Stem Cells Under Pressure Loading*, 10th Royan International Congress on Stem Cell Biology & Technology, 3-5 September, 2014, Tehran, Iran.

13- Vaez Ghaemi R., Vahidi B., Sabour M.H., **Haghighipour N.**, *Simulation of Flow-Induced Differentiation of a Stem Cell*, 1st National Congress on Application of Biomaterials in Regenerative Medicine, 5-7 Feb 2014, Tehran, Iran.

14-Alihemmati Z., Vahidi B., **Haghighipour N.**, *Analysis of Pressure Loading on a Mesenchymal Stem Cell using Finite Elements Method*, 1st National Congress on Application of Biomaterials in Regenerative Medicine, 5-7 Feb 2014, Tehran, Iran.

15- Vaez Ghaemi R., Vahidi B., Sabour M.H., **Haghighipour N.**, *Effects of Microgravity on Stem Cell Response to Fluid Shear Stress*, 13th Conference of Iranian Aerospace Society , 4-6 March, 2014, University of Tehran, Tehran, Iran.

16- Vaez Ghaemi R., Vahidi B., Sabour M.H., **Haghighipour N.**, *CFD Study of Mesenchymal Stem Cells in Fluid Flow*, 20th Iranian Conference on Biomedical Engineering, 18-20 December, 2013, University of Tehran, Tehran, Iran.

17- Amirzadeh M., Amoabediny G., **Haghighipour N.**, Salehi-Nik N., Yazdian F., Ghazizadeh L., *The Effect of Shear Stress on Differentiation of Human Adipose-Derived Mesenchymal Stem Cells into Endothelial Cells by a Perfusion Bioreactor*, 9th Royan International Congress on Stem Cell Biology & Technology, 4-6 September, 2013, Tehran, Iran.

18- Jazayeri M., Shokrgozar M.A., **Haghighipour N.**, Mahdian R. *The Effects of Extremely Low-Frequency Pulsed Electromagnetic Fields on Osteogenic Differentiation of Mesenchymal Stem Cells*, 9th Royan International Congress on Stem Cell Biology & Technology, 4-6 September, 2013, Tehran, Iran.

19- Kabirian F., Amoabediny G., Zandieh Doulabi B., **Haghighipour N.**, *Investigation on Amount of Secreted Nitric Oxide from Endothelial Cells by Applying Shear Stress and different Temperature*, 9th Royan International Congress on Stem Cell Biology & Technology, 4-6 September, 2013, Tehran, Iran.

20- Kabirian F., Amoabediny G., Zandieh Doulabi B., **Haghighipour N.**, *Investigations On Amount Of Secreted Nitric Oxide From Endothelial Cells In Response To Shear Stress*, 9th Royan International Congress on Stem Cell Biology & Technology, 4-6 September, 2013, Tehran, Iran.

21- Naghizadeh Z., Karkhaneh A., Shokrgozar M.A., Bonakdar S., Solouk A., **Haghighipour N.**, *Effects of hydrostatic pressure on chondrocyte biosynthesis in polycaprolactone-Polyvinyl Alcohol-Gelatin scaffolds*, 9th Royan International Congress on Stem Cell Biology & Technology, 4-6 September, 2013, Tehran, Iran.

22- Salehi-Nik N., Amoabediny Gh., Shokrgozar M.A., **Haghighipour N.**, Banikarimi P, Pouran B., Hajibabae T., Noormohammadi J., Solouk A., *Stable Adhesion of Endothelial Cells on Modified Silicone Hollow Fibers Under Shear Stress*, 17th—20th June, Istanbul, Turkey.

23-Shokrgozar M.A., Fattahi M., Bonakdar S., Ragerdi Kashani I., Majidi M., **Haghighipour N.**, Bayati V., Sanati H., Saeedi S.N., *Healing Potential of Mesenchymal Stem Cell Cultured on a Collagen Based Scaffold for Skin Regeneration*, The First Iranian Annual Congress Progress in Tissue Engineering and Regenerative Medicine, 18-20 May 2013, Tehran, Iran.

24-Tabatabaei F.S. , **Haghighipour N.**, Vahid Dastjerdi E. , Jazayeri M., *Influence of Equiaxial Tensile Strain on the Osteogenic Differentiation of Endometrial Stem Cell and Dental Pulp Stem Cells*, CNEOC, 9–11 May 2013, Paris, France.

25- Safshekan F., Hemmati A., Tafazzoli-Shadpour M., Shokrgozar M.A., **Haghighipour N.**, Mahdian R., *The Effect of Hydrostatic Pressure on Chondrogenic differentiation of Human Adipose Derived Mesenchymal Stem Cells*, 19th Iranian Conference on Biomedical Engineering, 20-21 December, 2012, Tehran, Iran.

26- Amin S., Tafazzoli Shadpour M., Shokrgozar M.A., Dehghan M.M., **Haghighipour N.**, Mahdian R., Bayati V., Banijamali E., Abbasnia P., *The Effect of Mechanical Loading on GA- TA4 Expression in Stem Cells*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

27- Safshekan F. Tafazzoli-Shadpour M., Shokrgozar M.A., **Haghighipour N.**, Mahdian R., Hemmati A., *The Effect of Hydrostatic Pressure on Growth Factor Induced Chondroinduction of Human Adipose-Derived Mesenchymal Stem Cells*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

28- Banijamali S.E., Shokrgozar M.A., Dehghan M.M., **Haghighipour N.**, Mahdian R., Amin S., Abbasnia P., *The Effect of Mechanical loading on Mesenchymal Stem Cell Targeted Differentiation into Cardiomyocyte*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

29- Hosseini M.S., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., Amjadi I., Goodarzi A.R., *The Combination of Shear Stress and Hydrostatic Pressure Modulate Chondrogenic Induction of Human Adipose Derived Mesenchymal Stem Cells*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

30- Jazayeri M., Shokrgozar M.A., **Haghighipour N.**, Mahdian R., *Effect of Combination of Mechanical and Chemical Factors on Osteogenic Differentiation of Mesenchymal Stem Cells*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

31- Nourizadeh Abbariki T., Shokrgozar M.A., **Haghighipour N.**, Mahdian R., *Cyclic Stretch Stimulates Myh2 Expression in Differentiation of Mesenchymal Stem Cells into Skeletal Muscle Cells*, 8th Royan International Congress on Stem Cell Biology & Technology, 5-7 September, 2012, Tehran, Iran.

32- Safaei N., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., Shojaei S., Mahdian R., *Effect of Tensile Strain and Shear Stress on the Differentiation of Human Mesenchymal Stem Cell into Endothelial Cells*, Gatar International Conference Stem Cell Science and Policy, 2012, 61.

- 33-Amin S., Tafazzoli-Shadpour M., DeShokrgozar M.A., Dehghan M.M., **Haghighipour N.**, Bayati V., Banijamali E., *The Effect of Mechanical Loading on Stemcell Differentiation into Cardiomyocytes*, 1st International Conference/Workshop on Stem Cell Research and Applications, October 7-9, 2011, Kayseri, Turkey.
- 34- Fattahi M., Shokrgozar M.A., Ragerdi Kashani I., Bonakdar S., **Haghighipour N.**, Bayati V., Saeidi Eslami S.N., Pajoum Shariati S.R., *The Generation of Living Skin Containing Biocompatible Scaffold and Stem Cells and Its Evaluation in Regeneration of Experimental Burned Animal*, 7th Royan International Congress on Stem Cell Biology & Technology, September 7-9, 2011, Tehran, Iran.
- 35- Nourizadeh Abbariki N., Shokrgozar M.A., **Haghighipour N.**, Aghdami N., Amanzadeh A., *Effect of Cyclic Stretch and Chemical Factors on Differentiation of Embryonic Stem Cells into Skeletal Muscle Cells*, 7th Royan International Congress on Stem Cell Biology & Technology, September 7-9, 2011, Tehran, Iran.
- 36- Jazayeri M., Shokrgozar M.A., **Haghighipour N.**, Mahdian R., Baniahmad F., *Differentiation of Bone Marrow Derived Mesenchymal Stem Cells into Osteoblast by Chemical Factors and Mechanical Loading*, 7th Royan International Congress on Stem Cell Biology & Technology, September 7-9, 2011, Tehran, Iran.
- 37- Heidarian S., Shokrgozar M.A., **Haghighipour N.**, *Uniaxial Cyclic Loading Effects on the Differentiation Process of Human Mesenchymal Stem Cells into Skeletal Muscle Cells*, 7th Royan International Congress on Stem Cell Biology & Technology, September 7-9, 2011, Tehran, Iran.
- 38-Riazifar H., Soleimani M., Shokrgozar M.A., **Haghighipour N.**, Shabani I., Shafiei A., Atashi A., Ahmadbeigi N., Mir sepehr P., *Simultaneous biochemical mechanical stimulation enhances expression of tendon related genes in rabbit mesenchymal stem cells seeded on aligned nanofibrous scaffold*, International Society for Stem Cell Research (ISSCR) 8th Annual Meeting, June 16-19, 2010, San Francisco.
- 39-Hatami J., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., Janmaleki M., *Effects of Cyclic Axial Stretch on Mechanical Properties of Cultured Endothelial Cells*, 16th Iranian Conference on Biomedical Engineering, December 30-31, 2009, Tehran, Iran.
- 40- Ghazanfari S., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., *Proliferation and differentiation of mesenchymal stem cells to smooth muscle cells by cyclic tensile strain*, Royan International Twin Congress, September 23-25, 2009, Tehran, Iran.
- 41- Hatami J., Tafazzoli-Shadpour M., **Haghighipour N.**, Shokrgozar M.A., Janmaleki M., *Characterization of Alterations in Elastic Modulus of Cultured Human Umbilical Vein Endothelial Cells Subjected to Cyclic Tension*, International Society of Biomechanics □□□□ Cogress, 5-9 July, 2009, Cape Town, South Africa.
- 42- Hatami J., **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., *Effects of Cyclic Axial Stretch on Morphology of Arterial Endothelial Cells*, First National Congress of Endothelium, 20-21 May, 2009, Esfahan, Iran.

43- Hatami J., Tafazzoli Shadpour M., **Haghighipour N.**, Shokrgozar M.A., *Effects of Cyclic Axial Stretch on properties of structural components of Endothelial Cells*, First National Congress of Endothelium, 20-21 May, 2009, Esfahan, Iran.

44- Amini S., Tafazzoli-Shadpour M., **Haghighipour N.**, Hashemi Golpayegani M.R., Shokrgozar M.A., *Study of Tensile Cyclic Loading on Morphology of Endothelial Cell Line in Culture Medium: A Fractal and Topological Comparison*, The 31st Conference of the Canadian Medical and Biological Engineering Society, 10-13 June, 2008, Montral, Canada.

45- Ghazanfari S., Tafazzoli-Shadpour M., Shokrgozar M.A., **Haghighipour N.**, *Quantification of Morphological Changes of Mesenchymal Stem Cells by Cyclic Stretch*, Royan International Twin Congress, 27-29 August, 2008, Tehran, Iran.

46- **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., Amini S., *Quantification of Endothelial Cell Morphological Change by Axial Cyclic Stress*, International Society of Biomechanics □ □ □ Cogress, 1-5 July, 2007-Taipei-Taiwan.

47- **Haghighipour N.**, Tafazzoli Shadpour M., Shokrgozar M.A., *A New Device For Application of Cyclic Strain on Cultured Cells for Evaluation of Endothelial Cell Morphology Under Loading*, 13th Iranian Conference of Biomedical Engineering, 21-22 February, 2007, Sharif University of Technology, Tehran, Iran.

48- Amini S., Tafazzoli Shadpour M., **Haghighipour N.**, *A Study of Tensile Cyclic Loading on the Morphology of Cultured Endothelial Cells with Applications of Fractal analysis*, 15th Annual (International) Conference on Mechanical Engineering-ISME2007, 15-17 May, 2007, Amirkabir University of Technology, Tehran, Iran.

49- **Haghighipour N.**, Tafazzoli Shadpour M., Avolio A., *Residual Stress and Circumferential Stress Distribution in a Finite Element Model of the Arterial Wall*, 7TH Biennial Conference on Engineering Systems Design and Analysis, 19-22 July, 2004, Manchester, United Kingdom.

50- **Haghighipour N.**, Tafazzoli Shadpour M., Avolio A., *Effects of Circumferential Residual Stress on the Circumferential Stress Distribution of the Arterial Wall by Finite Element Modelling*, 4th World Congress of Biomechanics, 4-9 August, 2002, Calgary, Canada.