



## Curriculum Vitae

### Personal Information

Name: Nafiseh Baheiraei  
Place of birth: Tehran, Iran  
Email: n.baheiraei@modares.ac.ir

### Education

2014, PhD in Tissue Engineering, School of Advanced Technologies, Tehran University of Medical Sciences, Tehran, Iran. Graduation grade: Excellent (first rank). GPA: 19.75/20. Thesis Title: Design and synthesis of biodegradable and electroactive polyurethanes combined with neonatal rat cardiomyocytes as a cardiac patch.

2010, Master of Sciences (MSc) in Biomedical Engineering (biomaterial), Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran. Graduation grade: Excellent (first rank). GPA: 19.48/20. Thesis Title: Preparation and antibacterial activity of Ag/SiO<sub>2</sub> thin film on glazed ceramic tiles by sol-gel method.

1999, Bachelor of Sciences (BSc) in Midwifery, Shahid Beheshti University of Medical Sciences. GPA:17.03/20.

### Work Experience

Nov.2015-Present Associate professor, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran.

Dec.2020-Present Head of Tissue Engineering Laboratory, Tarbiat Modares University, Tehran, Iran.

Dec.2020-April 2022 Deputy Director of Applied Research and Technology office, Tarbiat Modares University, Tehran, Iran.

Dec.2017-july 2019 Vice Dean of tissue engineering affairs, Faculty of medical sciences, Tarbiat Modares University, Tehran, Iran.

Oct.2017-july 2019 Collaboration in strategic transformation plan, vice dean of research, Tarbiat Modares University, Tehran, Iran.

2013-Present Teaching short courses and workshops on Tissue Engineering and scaffold fabrication, School of Advanced Technologies, Tehran University of Medical Sciences; Avicenna Research Institute; Tarbiat Modares University, Tehran, Iran.

2013-Present Member of scientific committee and chairperson of many national congresses on tissue engineering and regenerative medicine, Iran.

2002-Present Academic English Tutor, Tehran, Iran.

Jan.-Aug.2015 Associated researcher, Tissue engineering department, Avicenna Research Institute, Tehran, Iran.

May- Aug 2014 Researcher, Humanitas Clinical and Research Center, Milan, Italy.

2012-2014 Teacher Assistant of Biomaterials and Bioscaffolds, School of Advanced Technologies, Tehran University of Medical Sciences, Tehran, Iran.

2010-2011 Teacher Assistant of Biocompatibility, Biomedical Department, Amirkabir University, Tehran, Iran

## Published Books (in Persian)

- 1- **Baheiraei N.**, *Graphene-based nanomaterials and antibacterial properties: a novel approach in tissue engineering and medical equipments*. Royan pzhoh publishing.Tehran.Iran.Apr.2022.
- 2- **Baheiraei N.**, Vahdat S.,Madani H., *Heart and regenerative medicine; potential and perspective aspects of new therapeutic strategies in cardiovascular disease*. Royan pzhoh publishing.Tehran.Iran.Sep.2018.
- 3- E.Sadroddini, **Baheiraei N.**, et al.*3D Cell Culturing principles and methods*. Royan pzhoh publishing. Tehran.Iran. Feb.2018.
- 4- **Baheiraei N.**, Imani R.,Khayatan F., *An introduction on characterization methods in tissue engineering*, Jihad Tehran University Publishing .Tehran. Iran. Sep.2013.
- 5- **Baheiraei N.** and Hedayati M., *Antibacterial Silver Nanoparticles in Industry & Medicine*.Jihad Amirkabir University Publishing.Tehran.Iran .May 2011.
- 6- **Baheiraei N.** and Illukani M., *Coating in drugs and nanostructures*. Metaloon Publishing.Tehran.Iran. May 2011.

## Book Chapters

- 1- S.Bahrami, **N. Baheiraei\***, M. Najafi-Ashtiani, Sh. Nour, M.Razavi , (2020). *Microfluidic Devices in Tissue Engineering, Biomedical Applications of Microfluidic Devices*, **ISBN: 9780128187920**, Elsevier.
- 2- S.Tabatabaee, M. Najafi-Ashtiani, A. Mousavi, and **N. Baheiraei\*** (2020). *Nanobiomaterials for Musculoskeletal Regeneration, Nanoengineering in Musculoskeletal Regeneration*, **ISBN: 9780128202623**, Elsevier.
- 3- S. Sh. Mirsasaani, M.Hajipour Manjili, and **N. Baheiraei** (2011).Chapter in *Dental Nanomaterials, Advances in Diverse Industrial Applications of Nanocomposites*, Boreddy Reddy(Ed.),**ISBN:978-953-307-202-9**,InTech,Availablefrom: <http://www.intechopen.com/articles/show/title/dental-nanomaterials>.

## Published Papers

- 1- S. Tabatabaee, **N. Baheiraei\***, M. Salehnia, Fabrication and characterization of PHEMA–gelatin scaffold enriched with graphene oxide for bone tissue engineering. *J Orthop Surg Res* **17**, 216 (2022). <https://doi.org/10.1186/s13018-022-03122-4>.

- 2- S. Feyzmanesh, **N. Baheiraei**, I. Halvaei, Evaluation of parameters affecting encapsulated human spermatozoa in alginate hydrogel during cryopreservation. *RJMS*. 2022; 29 (1).
- 3- N. Jalilnejad, M. Rabiee, **N Baheiraei** et al. Electrically Conductive Carbon-based (Bio)-nanomaterials for Cardiac Tissue Engineering. *Bioengineering & Translational Medicine*. 2022:e10347.
- 4- Z Amirkhani, M Movahedin, **N Baheiraei**, A Ghiaseddin. Mini bioreactor can support in vitro spermatogenesis of mouse testicular tissue. *Cell J*, 24(5), 277-284.
- 5- S. Tabatabaee, M. Hatami, H. Mostajeran, **N. Baheiraei\***. Modeling of the PHEMA-gelatin scaffold enriched with graphene oxide utilizing finite element method for bone tissue engineering. *Computer Methods in Biomechanics and Biomedical Engineering* (2022): 1-9.
- 6- S. Bahrami, **N. Baheiraei\***, M. Shahrezaee, Biomimetic reduced graphene oxide coated collagen scaffold for in situ bone regeneration. *Sci Rep* ,2021,11, 16783. <https://doi.org/10.1038/s41598-021-96271-1>
- 7- M. Rezvani Nia, F. Bagheri, **N. Baheiraei**, effects of Kartogenin/PLGA Nanoparticles on Silk Scaffold Properties and Stem Cell Fate. *Bioinspired, Biomimetic and Nanobiomaterials*, 2021, Ahead of Print; <https://doi.org/10.1680/jbibn.20.00047>.
- 8- **N. Baheiraei\***, H. Eyni, B. Bakhshi, R. Najafloo, N. Rabiee, Effects of strontium ions with potential antibacterial activity on in vivo bone regeneration. *Sci Rep* 2021,11(1), 8745.
- 9- N. Rabiee, M. Bagherzadeh, A. M. Ghadiri, Yousef Fatahi, **N. Baheiraei**, M. Safarkhani, A. Aldhaher & R. Dinarvand. Bio-multifunctional noncovalent porphyrin functionalized carbon-based nanocomposite. *Sci Rep* 2021,11(1), 6604 .
- 10- A. Mousavi, Sh. Mashayekhan\*, **N. Baheiraei\***, A. Pourjavadi. Biohybrid oxidized alginate/myocardial extracellular matrix injectable hydrogels with improved electromechanical properties for cardiac tissue engineering. *International Journal of Biological Macromolecules*,2021,180, 692-708.
- 11- I. Halvaei, E. Shahmoradi , **N. Baheiraei**, Trehalose Attenuates Detrimental Effects of Freeze-Drying on Human Sperm Parameters, ahead of print <http://doi.org/10.1089/bio.2020.0167>.
- 12- G.A Roth, G.A Mensah, C. O Johnson,..... **N. Baheiraei** , et al. Global burden of cardiovascular diseases and risk factors, 1990–2019: update from the GBD 2019 study. *J Am Coll Cardiol*. 2020, 76 (25) 2982–3021.
- 13- R. Najafloo1, **N. Baheiraei\***, Rana Imani\* .Synthesis and characterization of collagen/calcium phosphate scaffolds incorporating antibacterial agent for bone tissue engineering application. *Journal of Bioactive and Compatible Polymers*, 2021,36(1),29-43.
- 14- A. Mousavi, S. Vahdat, **N. Baheiraei\***, M. Razavi, M. H. Norahan, H. Baharvand\*.Multifunctional Conductive Biomaterials as Promising Platforms for Cardiac Tissue Engineering. *ACS Biomater. Sci. Eng.* 2020, 7(1), 55–82.
- 15- W. Khalil, T. Tiraihi, M. Soleimani, **N. Baheiraei**, K. Zibara. Conversion of Neural Stem Cells into Functional Neuron-Like Cells by MicroRNA-218: Differential Expression of Functionality Genes. *Neurotoxicity Research*,2020,38(3), 707-722.
- 16- S. Ahmadi, N. Rabiee..... **N. Baheiraei**,..... et al. Stimulus-responsive sequential release systems for drug and gene delivery. *Nano Today*,2020, 34:100914.
- 17- P. Zarrintaj, E. Zangene, ....., **N. Baheiraei....** et al. Conductive biomaterials as nerve conduits: Recent advances and future challenges. *Applied Materials Today*,2020,20: 100784.
- 18- N. Karimi, **N. Baheiraei\***, N. Naderi, M. Salehnia. Reduced graphene oxide facilitates biocompatibility of alginate for cardiac repair. *Journal of Bioactive and Compatible Polymers*, 2020, 35(4-5), 363-377.

- 19- S. Ahmadi, N. Rabiee, ....., **N. Baheiraei**, *et al* .Controlled Gene Delivery Systems: Nanomaterials and Chemical Approaches. *Journal of Biomedical Nanotechnology* ,2020,16(5), 553-582.
- 20- A. Mehrabi, **N. Baheiraei** \*, M. Adabi, Z. Amirkhani. Development of a Novel Electroactive Cardiac Patch Based on Carbon Nanofibers and Gelatin Encouraging Vascularization. *Applied Biochemistry and Biotechnology*,2020, 190 (3), 931-948
- 21- Burstein, R., Henry, N.J., Collison, M.L..... **N. Baheiraei**,..... *et al*. Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. *Nature*,2019, 574(7778):353-358.
- 22- S. Safiri, ....., **N. Baheiraei**, et al. The global, regional, and national burden of colorectal cancer and its attributable risk factors in 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet Gastroenterol Hepatol*, 2019, 4(12), 913-933.
- 23- Nour, S., **N. Baheiraei** \*, Imani, R. et al. A review of accelerated wound healing approaches: biomaterial- assisted tissue remodeling. *J Mater Sci: Mater Med* (2019) 30: 120. <https://doi.org/10.1007/s10856-019-6319-6>.
- 24- Nour, S., **N. Baheiraei** \*, Imani, R. et al. Bioactive Materials: A Comprehensive Review on Interactions with Biological Microenvironment Based on the Immune Response. *J Bionic Eng* (2019) 16: 563. <https://doi.org/10.1007/s42235-019-0046-z>.
- 25- B. Babak, P Zarrintaj, S Subhash Surwase, **N. Baheiraei**, M. R. Saeb, M. Mozafari, Y. Chun Kim, and O. Ok Park .Self-gelling electroactive hydrogels based on chitosan–aniline oligomers/agarose for neural tissue engineering with on-demand drug release. *Colloids Surf B Biointerfaces*. 2019,4(184):110549.
- 26- A Adeli Mehr, **N. Baheiraei** \*, H Eyni. Influence of Strontium Substitution on Osteogenesis of Bioglass/Gelatin Scaffold in Critically Sized rabbit Calvarial Defects. *Pathobiology Research Journal (scientific quarterly)*, (Farsi language), 2019; 22 (3) :141-147.
- 27- M.Norahan, M. Pourmokhtari, B.Bakhshi,M. Soufi Zomorode, **N. Baheiraei** \*. Electroactive cardiac patch containing reduced graphene oxide with potential antibacterial properties. *Mater Sci Eng C Mater Biol Appl* ; 104: 109921, 2019 Nov.
- 28- M. Norahan, M.H., Amroon, M., Ghahremanzadeh, R., Rabiee, **N. Baheiraei** \*. Reduced Graphene Oxide: Osteogenic Potential for Bone Tissue Engineering. *IET Nanobiotechnology*, 2019 Sep;13(7):720-725. doi: 10.1049/iet-nbt.2019.0125.
- 29- H.Tebyanian, M. H. Norahan, H. Eyni, M. Movahedin, SM J. Mortazavi, A. Karami, M. R.Nourani, **N. Baheiraei** \*. Effects of collagen/ $\beta$ -tricalcium phosphate bone graft to regenerate bone in critically sized rabbit calvarial defects.*Journal of Applied Biomaterials & Functional Materials*, 2019;17(1):2280800018820490.
- 30- Bahrami S., **Baheiraei N\***, Mohseni M., Razavi, M. Ghaderi, A., Azizi B., ... & Karimi M. Three-dimensional graphene foam as a conductive scaffold for cardiac tissue engineering. *Journal of biomaterials applications*, 2019,34(1): 74–85.
- 31- H. Goodarzi, S. Hashemi-Najafabadi, **N. Baheiraei** \*, F. Bagheri . Preparation and Characterization of Nanocomposite Scaffolds (Collagen/ $\beta$ -TCP/SrO) for Bone Tissue Engineering. *Tissue Engineering and Regenerative Medicine*, 2019, 16(3):237–251.
- 32- Shojaie S, Rostamian M, Samadi A, Alvani MA, Khonakdar HA, Goodarzi V, Zarrintaj R, Servatan M, Asefnejad A, **Baheiraei N**, Saeb MR. Electrospun electroactive nanofibers of gelatin-oligoaniline/Poly (vinyl alcohol) templates for architecting of cardiac tissue with on-demand drug release. *Polym Adv Technol*.2019,30(6):1-11.
- 33- M.H. Norahan, M. Amroon, R. Ghahremanzadeh, M. Mahmoodi, **N.Baheiraei\*** .Electroactive graphene oxide-incorporated collagen assisting vascularization for cardiac tissue engineering. *J Biomed Mater Res Part A*. 2019: 107A: 204–219.

- 34- Zare S, **Baheiraei N.\***, F. Baghery. The effects of strontium incorporation on a novel gelatin/bioactive glass bone graft: in vitro and in vivo characterization. *Ceramics International*, 44 (2018) 14217–14227.
- 35- **N. Baheiraei \***, M. R. Nourani, SM J.Mortazavi, M. Movahedin, H. Eyni, F. Baghery, M.H. Norahan. Development of a bioactive porous collagen/ $\beta$ -tricalcium phosphate bone graft assisting rapid vascularization for bone tissue engineering applications. *J Biomed Mater Res Part A*. 2018;106A:73–85.
- 36- M.Meskinfam , S.Bertoldi, N.Albanese, A.Cerri, M.C.Tanzi, R.Imani, **N.Baheiraei**, M.Farokhi, S.Farè. Polyurethane foam/nano hydroxyapatite composite as a suitable scaffold for bone tissue regeneration. *Materials Science & Engineering C* 2018 (82): 130– 140.
- 37- **Baheiraei N. \***, Zare S., Sanei R. Recent advances in bioglass applications for bone tissue engineering. *Pathobiology Research Journal (scientific quarterly)*, (Farsi language), 2017 (20):1-22.
- 38- Kazemnejad S., Khanmohammadi M., **Baheiraei N.** Current state of cartilage tissue engineering using nanofibrous scaffolds and stem cells. *Avicenna J Med Biotech* 2017; 9(2): 50-65.
- 39- Zademodarras SH., Zamaniyan M., **Baheiraei N.\***, Saharkhiz N., Abed F., Malih N., M. R. Sohrabi. A Comparative Analysis Between Day 2 and Day 3 Embryo Transfer in IVF/ICSI: A Retrospective Cross-Sectional Study. *IJWHR* 2016(4):119-124.
- 40- **Baheiraei N.**, R. Gharibi , H. Yeganeh, Miragoli M., Salvarani N., Di Pasquale E., Condorelli G. Electroactive polyurethane/siloxane derived from castor oil as a versatile cardiac patch, Part II: HL-1 cytocompatibility and electrical characterizations. *J Biomed Mater Res A*. 2016 (104A): 1398–1407.
- 41- **Baheiraei N.**, R. Gharibi , H. Yeganeh, Miragoli M., Salvarani N., Di Pasquale E., Condorelli G. Electroactive polyurethane/siloxane derived from castor oil as a versatile cardiac patch, Part I: synthesis, characterization and myoblast proliferation and differentiation , *J Biomed Mater Res A*. 2016(104A): 775–787.
- 42- N. Saharkhiz, M. Zamaniyan, S. Salehpour, Sh. Zadeh modarres, S. Hoseini, L. Cheraghi , S. Seif., **Baheiraei N.** A Comparative Study of Dydrogesterone and Micronized Progesterone for Luteal Phase Support During in Vitro Fertilization (IVF) Cycles. *Gynecol Endocrinol*. 2015 (3):213-7.
- 43- **Baheiraei N.**, J. Ai, H. Yeganeh, R. Gharibi , S. Ebrahimi-Barough, M. Azami , S. Vahdat d, H.Baharvand, Preparation of a porous conductive scaffold from aniline pentamer-modified polyurethane/PCL blend for cardiac tissue engineering , *J Biomed Mater Res A*. 2015(10):3179-87.
- 44- **Baheiraei N.**, H. Yeganeh, J. Ai, R. Gharibi, M.Azami, F. Faghihi, Synthesis, characterization and antioxidant activity of a novel electroactive and biodegradable polyurethane for cardiac tissue engineering application, *Mater. Sci. Eng., C*, 2014(44)24-37.
- 45- **Baheiraei N.**, M. Azami, H. Hosseinkhani, Investigation of Magnesium Incorporation within Gelatin/Calcium Phosphate Nanocomposite Scaffold for Bone Tissue Engineering. *Int. J. Appl. Ceram. Technol.*, 2013(10) 1–9.
- 46- **Baheiraei N.**, M. Azami, Investigation of fluoride incorporation within gelatin/calcium phosphate nanocomposite scaffold prepared through a diffusion method. *Adv Compos Lett*, 2013(5)106-112.
- 47- **Baheiraei N.**, F. Moztaazadeh, M. Hedayati, Preparation and antibacterial activity of Ag/SiO<sub>2</sub> thin film on glazed ceramic tiles by sol-gel method. *Ceram. Int*. 2012(38) 2921–2925.

- 48- Zadehmodares SH., **Baheiraei N\***, A.Sharafi, M. Hedayati. The ratio of cervical fluid and serum human chorionic gonadotropin as a predictor of abortion. *IJRM*.2012(10)409-412.
- 49- Imani R, Sh. Hojjati Emamir, A. Sharifi, P. Rahnama, **Baheiraei N.**, H. Fakhrzadeh. Evaluation of novel “biopaper” for cell and organ printing application: an in vitro study. *Journal of Diabetes and Metabolic Disorders*, 2011(10)1- 13.
- 50- Azami M., Sh. Tavakol, A.Samadikuchaksaraei, M. Solati Hashjin, **Baheiraei N.**, Kamali M., M. Nourani. A Porous Hydroxyapatite/Gelatin Nanocomposite Scaffold for Bone Tissue Repair: In Vitro and In Vivo Evaluation. *J Biomater Sci Polym Ed.* 2012(23) 2353–68.
- 51- Imani R, SH. Hojjati Emamir, P. Rahnama, **Baheiraei N.** A. Sharifi. Preparation and Characterization of Agarose-gelatin Blend Hydrogels as a Cell Encapsulation Matrix: An in-Vitro Study. *J. Macromol. Sci., Phys.* 2012(51)1606–16.
- 52- M.Azami, M. Moosavifar, **Baheiraei N.**, F. Moztarzadeh, J. Ai. Preparation of a Biomimetic nanocomposite scaffold for bone tissue engineering via mineralization of gelatin hydrogel and study of mineral transformation in simulated body fluid. *J Biomed Mater Res Part A* 2012(5)1347–55.
- 53- Imani R., A.Sharifi, Sh. Hojjati Emami, H. Fakhrzadeh, **Baheiraei N.** Optimization and comparison of two different 3D culture methods to prepare cell aggregates as a bioink for organ printing. *Biocell*, 2012(36)37-45.

\*corresponding author

## Presentations

- 1- **N. Baheiraei \***, Reduced graphene oxide: potential for cardiac tissue engineering. 6<sup>th</sup> world Conference TERMIS, Nov.2021, the Netherlands (oral).
- 2- N. Jalilnejad, **N. Baheiraei \***, Electroactive Biomaterials: Encouraging Tools for Cardiac Tissue Engineering. 3rd International Conference on Material science and nanotechnology, Aug.2021, Portugal (Invited speaker).
- 3- Z.Amirkhani, M.Movahedin, **N. Baheiraei**, In Vitro Transplantation of Spermatogonial Stem Cells Isolated from Mouse Testis Tissue Can Induce Spermatogenesis in a Mini-Perfusion Bioreactor, 9th Yazd International Congress and Student Award on reproductive Medicine, May2021, Iran(Oral).
- 4- Raziye Najafloo, **N. baheiraei\***, R. Imani: A Niosomal Thymol loaded collagen/ $\beta$ -TCP scaffold for addressing bone infection control. Royan International 16th Congress on Stem Cells Biology & Technology. Sept.2020, Iran(poster)
- 5- N. karimi hajishoreh, **N. baheiraei\***, Graphene: an angiogenic platform for cardiac application. 4<sup>th</sup> Iranian congress on progress in tissue engineering and regenerative medicine, Nov.2018, Iran(oral).
- 6- **N. Baheiraei**, Strontium-based bioactive glass composite for bone regeneration. The First International Iranian Tissue Engineering and Regenerative Medicine, July 2018, Iran. (Invited speaker).
- 7- M. H. Norahan, **N. Baheiraei \***, Plant scaffolds: a green solution for tissue engineering. The First International Iranian Tissue Engineering and Regenerative Medicine, July 2018, Iran(Invited speaker).
- 8- S. Bahrami, **N. Baheiraei\***, M. Mohseni, M. Karimi, Fabrication and biocompatibility assay of three dimensional graphene foam nanostructure. 2nd Nanomedicine & Nanosafety Conference, Nov.2017, Iran (Poster).
- 9- S. Zareh, **N. Baheiraei\***. Fabrication of nanobioglass composite containing gelatin for

- bone tissue engineering. 2nd Nanomedicine & Nanosafety Conference, Nov.2017, Iran(Poster).
- 10- A. Mehrabi, M. Adabi, **N. Baheiraei** \*, Electroactive Carbon Nanofiber Composite for Myocardial Tissue Engineering Application. International conference on nanofibers, Oct.2017, Iran (Poster).
  - 11- H. Goodarzi1, S. Hashemi-Najafabadi, **N. Baheiraei**, the effect of strontium doped  $\beta$ -TCP on bioactivity of collagen scaffold for bone tissue engineering. 7th International Conference on Tissue Engineering & Regenerative Medicine.Oct.2017, Spain (Poster).
  - 12- **N. Baheiraei** \*, SM Javad Mortazavi, Development and characterization of a bioactive porous collagen/ $\beta$ -tricalcium phosphate graft for bone tissue engineering. 8th International Conference on Tissue Science and Regenerative Medicine.Sept,2017, Singapore (Oral).
  - 13- A. Mehrabi, **N. Baheiraei**\*. In Vitro Effects of Carbon Nanofiber On Cardiomyocyte Function. International Stem Cells and Regenerative Medicine Congress.April,2017, Mashhad, Iran (Poster).
  - 14- M. H. Norahan, **N. Baheiraei**\* , M. Mahmoodi. Effect of Graphene-Based Nanomaterials On Cell Function for Cardiac Tissue Regeneration: An In-Vitro Study. International Stem Cells and Regenerative Medicine Congress. April,2017, Mashhad, Iran(Poster).
  - 15- H. Goodarzi1, S. Hashemi-Najafabadi, **N. Baheiraei**. Synthesis of a novel nanocomposite scaffold based on collagen /  $\beta$ -TCP for bone tissue engineering. International Stem Cells and Regenerative Medicine Congress.April,2017, Mashhad, Iran (Poster).
  - 16- M.Amron, **N. Baheiraei**\*, M.Mahmoodi. Osteogenic differentiation of mesenchymal stem cells on graphene oxide-coated collagen scaffold for bone tissue engineering application, International Stem Cells and Regenerative Medicine Congress. April, 2017, Mashhad, Iran(Poster).
  - 17- M.Amron, **N. Baheiraei**\*, M.Mahmoodi. Fabrication of dense, tissue like construct using a new and improved technique of plastic compression. International Stem Cells and Regenerative Medicine Congress.April,2017, Mashhad, Iran(Poster).
  - 18- S. Zareh, **N. Baheiraei**\*. In Vitro Effects of Strontium on Cell Proliferation and Osteoinduction : a Review. Stem Cells, Tissue Engineering and Regenerative Medicine in Bone and Joint Repair.Dec. 2016, Tehran,Iran (Poster).
  - 19- **N. Baheiraei**. Update on the state of cardiac muscle engineering: a review.3rd Iranian congress on progress in tissue engineering and regenerative medicine. Oct. 2016, Tehran,Iran (Oral).
  - 20- M. H. Norahan, **N. Baheiraei**\*. Synthesis and Characterization of Electroactive Scaffold as a Cardiac Patch. 3rd Iranian congress on progress in tissue engineering and regenerative medicine. Oct. 2016, Tehran,Iran (Oral).
  - 21- M. H. Norahan, **N. Baheiraei**\*. Graphene- based nanomaterials for tissue engineering: a review. 3rd Iranian congress on progress in tissue engineering and regenerative medicine. Oct. 2016, Tehran,Iran (Poster).
  - 22- M. H. Norahan,M. amron, **N. Baheiraei**\*. Design and Synthesis of Electroactive Scaffold as a Cardiac Patch. Royan International 12th Congress on Stem Cells Biology & Technology. Sept. 2016, Tehran,Iran (Poster).
  - 23- **N. Baheiraei**\*, H. Yeganeh, Myoblast Proliferation and Differentiation on ElectroactivePolyurethane/siloxane Derived from Castor Oil for Cardiac Patch Application. Royan International 12th Congress on Stem Cells Biology & Technology. Sept. 2016, Tehran,Iran (Poster).
  - 24- **N. Baheiraei**. Cardiac Tissue Engineering,Stem cells and regenerative medicine in

- cardiovascular system symposium, Feb. 2016, Shahid Rajaei Heart Center, Tehran, Iran (Invited speaker).
- 25- **N. Baheiraei**. An update on the state of cardiac muscle engineering, 2nd conference of novel approaches of biomedical engineering in cardiovascular diseases, Jan. 2016, Tehran, Iran (Oral).
  - 26- **N. Baheiraei** . New approaches for cardiac tissue engineering. 6th international congress of newest research achievements in medical science. Nov. 2014, Tehran, Iran (Oral).
  - 27- **N. Baheiraei\***, H. Yeganeh, R. Gharibi, synthesis and characterization of Electroactive polyurethanes for cardiac patch application. 2nd Iranian congress on progress in Tissue Engineering and Regenerative Medicine. Nov. 2015, Tehran, Iran (Oral).
  - 28- **N. Baheiraei\***, H. Yeganeh. Conductive scaffolds for cardiac tissue engineering. 4th International Preventive Cardiology Congress. Sept. 2015, Shiraz, Iran (Invited speaker).
  - 29- **N. Baheiraei\***, H. Yeganeh. Cardiac patch: a biomaterial approach to prevent heart failure. 4th International Preventive Cardiology Congress. Sept. 2015, Shiraz, Iran (Poster).
  - 30- **N. Baheiraei\***, H. Yeganeh, R. Gharibi, S. Vahdat. A Novel Electroactive Polyurethane Scaffold for Cardiac Tissue Engineering. Royan International 11th Congress on Stem Cells Biology & Technology. Sept. 2015, Tehran, Iran (Poster).
  - 31- **N. Baheiraei\***, S. Kazemnejad, Stem Cell Therapy for Cardiac Repair: A Review. Stem Cells and Regenerative Medicine Int. Congress. May 2015, Mashhad, Iran (Poster).
  - 32- **N. Baheiraei\***, H. Yeganeh, R. Gharibi, Aniline pentamer-modified polyurethane for cardiac tissue engineering. 3rd National Congress on Cellular and Molecular News in Non-Contagious Disease. May 2015, Babol, Iran (Poster).
  - 33- **N. Baheiraei\***, SH. Zadehmodares, A. Sharafi, M. Hedayati. Predicting abortion: The ratio of cervical fluid and serum human chorionic gonadotropin. 5th international congress of newest research achievements in medical science. Oct. 2014, Tehran, Iran (Poster).
  - 34- **N. Baheiraei\***, H. Yeganeh, J. Ai, R. Gharibi. Design and synthesis of biodegradable and electroactive polyurethanes as a cardiac patch, second International congress on Cardiovascular Technologies. Oct. 2014, Rome, Italy (Oral).
  - 35- **N. Baheiraei\***, F. Moztarzadeh, M. Hedayati. Characterization of silver doped ceramic tiles and its antibacterial activity. International Conference MiMe-Materials in Medicine. Oct. 2013, Bologna, Italy (Poster).
  - 36- **N. Baheiraei\*** , M. Azami . Evaluation of fluorine and magnesium incorporation within gelatin/calcium phosphate nanocomposite scaffold for bone tissue engineering. Advances in Tissue Regeneration 2013 Conference. Nov. 2013. Lattrop, The Netherlands (Poster).
  - 37- **N. Baheiraei\***, F. Moztarzadeh, M. Hedayati. Antibacterial Ag/SiO<sub>2</sub> Thin Film on Glazed Ceramic Tiles Prepared by Sol-gel Method. 18th Iranian Conference on BioMedical Engineering. Dec. 2011, Tehran, Iran (Oral).

## National Patents

- 1- Synthesis of a biocompatible and bioactive bone graft based on gelatin/ strontium-doped bioactive glass by freeze drying technique. Sept. 2018. certified by Iranian Research Organization for Science and Technology (IROST) (patent No. 96902).
- 2- Electroactive cardiac patch based on carbon nanofiber and gelatin, Jan. 2018. certified by Iranian Research Organization for Science and Technology (IROST) (patent No. 94280).



- 3- Synthesis and characterization of an electroactive collagen/graphen oxide cardiac patch, Oct.2016, certified by Iranian Research Organization for Science and Technology (IROST) (patent No.89915).
- 4- Synthesis and characterization of collagen/ $\beta$  tricalcium phosphate scaffold for bone tissue engineering and bone repair, Sept. 2016, certified by Iranian Research Organization for Science and Technology (IROST) (patent No.89766).
- 5- Antibacterial tiles by sol-gel method, Nov.2010, certified by Iranian National Elite Organization and Iranian Research Organization for Science and Technology (IROST) (patent No.67689).

### **Awards and Honors**

- Award winner on selected research section in the field of medical sciences, 2<sup>nd</sup> Modares women event, Feb.2021, Iran.
- Award winner on best poster prize, Royan International 16th Congress on Stem Cells Biology & Technology. Sept. 2020, Tehran, Iran.
- Award winner on invention, Faculty of Medical Sciences, Tarbiat Modares University Dec.2019, Tehran, Iran.
- Award winner on invention, Faculty of Medical Sciences, Tarbiat Modares University Dec.2017, Tehran, Iran.
- Award winner on best innovation on medical sciences, International Congress of Prof. Yalda , Oct.2016, Tehran, Iran.
- Dr Kazemi Ashtiani Award winner given by Iranian National Elite Organization, Sept. 2016, Tehran, Iran.
- Award winner on best poster prize, Royan International 12th Congress on Stem Cells Biology & Technology. Sept. 2016, Tehran, Iran.
- Award winner on second Avicenna Festival, Tehran University of Medical Sciences, Dec 2015, Tehran, Iran.
- Honored Ph.D. graduated student, school of advanced technology, Tehran University of Medical Sciences, June 2015.
- Award winner on best poster prize, International Congress of Prof. Yalda Oct.2014, Tehran, Iran.
- First rank postgraduate student (PhD degree), Cumulative GPA: 19.75, 2014.
- First rank postgraduate student (MSc degree), Cumulative GPA: 19.48, 2010.
- First rank in Comprehensive PhD Examination, 2013.
- Award winner of Annual Student Writers Contest for writing the book entitled “an Introduction on characterization methods in tissue engineering”, 2013, Tehran, Iran.
- Member of Exceptional Talent Development Center (ETDC), Tehran University of Medical Sciences, Tehran, Iran.

### **Thesis Supervisor**

- 1- H. ghaebi, M.Sc in Mechanical Engineering , 2022, Thesis title" Preparation and characterization of Gelatin/Bioglass scaffolds using 3D printing for bone tissue engineerin “, Tarbiat Modares University, Tehran, Iran.
- 2- F.Edrisi, M.Sc in Biomedical Engineering , 2022, Thesis title" Alginate/ GO composition as a novel bio-ink for 3D-printing of cardiac patch “, Tarbiat Modares University, Tehran, Iran.

- 3- H. Mostajeran, M.Sc in Biomedical Engineering , 2021, Thesis title" Effects of cerium incorporation on a novel bioactive glass/alginate/gelatin bone scaffold : in vitro characterization “, Tarbiat Modares University, Tehran, Iran.
- 4- M.Fathi, M.Sc in hematology,2020, Thesis title" Alginate scaffold coated with graphene oxide: potential for angiogenesis of HUVECs", Tarbiat Modares University, Tehran, Iran.
- 5- S. Tabatabaee, M.Sc in Biomedical Engineering , 2020, Thesis title" Fabrication and Characterization of Graphene Oxide-Enriched PHEMA Scaffold for Bone Tissue Engineering “, Tarbiat Modares University, Tehran, Iran.
- 6- M. Feyzmanesh, M.Sc in Anatomical science , 2018, Thesis title" Effects of alginate on parameters of human spermatozoa during freezing and thawing " , Tarbiat Modares University, Tehran, Iran.
- 7- A. mousavi, M.Sc in chemical engineering , 2018, Thesis title "Synthesis ,characterization an optimization insitu forming hydrogel derived extracellular matrix for cardiac tissue engineering application", Sharif university of technology, Tehran, Iran.
- 8- N. karimi, PhD in tissue engineering, 2017, Thesis title" Efficacy of intramyocardial injection of electroactive alginate containing reduced graphene oxide with human bone marrow derived mesenchymal stem cells in rat model of ischemic cardiomyopathy", Tarbiat Modares University, Tehran, Iran.
- 9- S. Mokhtari, M.Sc in biomedical engineering , 2017, Thesis title "Synthesis and evaluation of antibacterial activity of cardiac patch based on reduced graphene oxide", Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.
- 10- R. Najafloo, M.Sc in biomedical engineering , 2017, Thesis title "Synthesis and evaluation of collagen / calcium phosphate composite scaffold containing antibacterial agent for bone tissue engineering application " , Tarbiat Modares University, Tehran, Iran.
- 11- S. Zareh , M.Sc in Anatomical science , 2016, Thesis title" Effects of strontium incorporation on diferentiation of rat mesenchymal stem cells cultured on gelatin / bioglass scaffold “, Tarbiat Modares University, Tehran, Iran.
- 12- A. Mehrabi, M.Sc in Anatomical science, 2016, Thesis title" Evaluation of rat Cardiomyocyte function on electroactive carbon nanofiber cardiac patch”, Tarbiat Modares University, Tehran, Iran.
- 13- H. goodarzi , M.Sc in chemical engineering , 2016, Thesis title" Synthesis and characterization of a novel scaffold based on collagen/ $\beta$ TCP for bone tissue engineering " , Tarbiat Modares University, Tehran, Iran.
- 14- S. Bahrami, M.Sc in nanomedicine ,2016, Thesis title "Design and Synthesis of Electroactive and Biocompatible Three Dimensional Gelatin Coated Graphene Foam Nanostructure for Cardiac Tissue Engineering" , Iran Medical university, Tehran, Iran.
- 15- M. Amroon , M.Sc in biomedical engineering,2015, Thesis title" Design and synthesis of electroactive scaffold as a cardiac patch " , Azad university, Yazd, Iran.
- 16- M. H. Norahan, MSc in biomedical engineering ,2015, Thesis title" Collagen/graphen oxide biocomposites: mechanical properties and biocompatibility", Azad university, Yazd, Iran.

## **Thesis Consultant**

- 1- Z.Nasiri. PhD in virology,2020, Thesis title" Immunomodulatory effects of human mesenchymal stem cells secretome and exosome for treatment of patients with COVID-19: in vitro evaluation", Tarbiat Modares University, Tehran, Iran.
- 2- F. Panahi, M.Sc in Biomedical Engineering , 2020, Thesis title" Evaluation of decellular

liver tissue In terms of preservation of extracellular matrix compounds ". Tarbiat Modares University, Tehran, Iran.

- 3- S.Rafiyani. M.Sc in chemical engineering, 2019, Thesis title" Preparation of hydrogel scaffold based on chitosan and decellularized tissue for cardiac tissue engineering ", Tarbiat Modares University, Tehran, Iran.
- 4- E. Shahmoradi, M.Sc in Anatomical science , 2018, Thesis title" effect of trehalose on human spermatozoa freeze-drying" , Tarbiat Modares University, Tehran, Iran.
- 5- A. Babaee, PhD in tissue engineering, 2017, Thesis title" Regeneration of spinal cord injury in rat model using injectable alginate hydrogel loaded with Lithium Chloride", Tarbiat Modares University, Tehran, Iran.
- 6- F. Khosravi, M.Sc in medical physics , 2017, Thesis title" Treatment of diabetic ulcers in the mice using adipose derived mesenchymal stem cells and low frequency ultrasound ", Tarbiat Modares University, Tehran, Iran.
- 7- N. Shokraei, M.Sc in medical nanotechnology, 2016, Thesis title "Electroactive and biodegradable nanofibrous scaffolds for cardiac patch application", School of Advanced Technologies, Tehran University of Medical Sciences, Tehran, Iran.
- 8- W. Khalil, PhD in Anatomical sciences, 2016, Thesis title" Cytotherapy with neurons induced by microRNA218 in rats with spinal cord injury treated by valproic acid “, Tarbiat Modares University, Tehran, Iran.
- 9- A. Ghasemi, M.Sc in Tissue Engineering, 2016, Thesis title “Synthesis and characterization of a conductive nano-composite based on graphene for cardiac patch application", Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.
- 10- Z.Amirkhani, PhD in Anatomical sciences, 2017, Thesis title" Spermatogenesis in perfusion Bioreactor after invitro transplantation of mouse spermatogonial stem cells to the testis of azoospermia mouse model “, Tarbiat Modares University, Tehran, Iran.
- 11- M.Rezvanian. M.Sc in chemical engineering, 2016, Thesis title" Synthesis of Silk Scaffold Containing PLGA Nanoparticles for Cartilage Tissue Engineering ", Tarbiat Modares University, Tehran, Iran.

### **Professional Memberships**

- Iranian Tissue Engineering and Regenerative Medicine Society (ITERMS) since 2016
- Tissue Engineering and Regenerative Medicine International Society (TERMIS) since 2015
- The Institute for Systems and Technologies of Information, Control and communication (INSTICC), No.6297.
- Medical Council of the Islamic Republic of Iran, membership No. 7032M.
- Iranian Society for Biomedical Engineering (ISBME), membership No.10948.

### **Editorial Board**

Journal of Pathobiology Research

### **Research Interests**

Bone tissue engineering  
Cardiac tissue engineering(electroactive cardiac patches)  
Antibacterial materials (self-cleaning surfaces)  
Graphene and Graphene- oxide Based Nanomaterials

**Languages**

Persian (native)

English (advanced)

French (elementary)