

Arash Ramedani

Contact Details

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Academic Background

Ph.D. Candidate in Materials Engineering and Nanotechnology
Sharif University of Technology, Tehran, Iran (GPA: 17.20 / 20) **2014-Present**

M.Sc. in Biomedical Engineering (biomaterial)
University of Tehran, Tehran, Iran (GPA: 17.98 / 20) **2012-2014**
Thesis Title: The development of Liposome Encapsulated Hemoglobin: A Novel Blood Substitute with the Potential Ischemia Therapy. (Grade: 20/20)
Supervisors: Dr. Ghasem Amoabedini, Prof. Khosrow Mottaghy

B.Sc. in Chemistry
Ferdowsi University of Mashhad, Mashhad, Iran (GPA: 17.28 / 20) **2006-2010**
Thesis Title: Synthesis and Characterization of Hydroxyapatite Powder by nanoliposome (Grade: 20/20)
Supervisors: Dr. Masoud Mozafari

Honors

- Award winner 21th Research Festival, Tehran University
 - Best Master's thesis among Iranian graduates of the year 2012 - Artificial Blood
 - Ranked 2nd among graduating class of 2012- Biomedical Engineering.
 - Ranked 2nd among graduating class of 2010- Bachelor of Science in Chemistry.
 - Accepted to the Master of Science program without taking universities graduate national entrance exam. This opportunity is given to students who are in the top 5% of their program.
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Research Interests

- Tissue Engineering
 - Biomaterials
 - Electronic Properties of Perovskite Nano Structures
 - Dielectric, Piezoelectric & Ferroelectric Materials
 - Artificial Organs
 - Drug Delivery
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Research Experiences

- Study on drug delivery system
- Synthesis of liposome encapsulated of Hemoglobin
- Study on surface modification techniques
- Synthesis of Hydroxyapatite for surface modification of implants
- Study on Piezoelectric Nanomaterials for Biomedical Applications

Publications

Papers

- **A. Ramedani**, A. Yazdanpanah, F. Moztarzadeh, and M. Mozafari, "On the use of nanoliposomes as soft templates for controlled nucleation and growth of hydroxyapatite nanocrystals under hydrothermal conditions," *Ceram. Int.*, vol. 40, no. 7, Part A, pp. 9377–9381, 2014.
- H. Tabesh, G. Amoabediny, A. Rasouli, **A. Ramedani**, A. Poorkhalil, A. Kashefi, and K. Mottaghy, "Simulation of blood oxygenation in capillary membrane oxygenators using modified sulfite solution," *Biophys. Chem.*, vol. 195, no. 0, pp. 8–15, 2014.
- M. Mozafari, **A. Ramedani**, and A. Yazdanpanah, "Artificial Blood- A Game Changer for Future Medicine: Where are we Today?" *J. Blood Disord. Transfus.*, vol. 06, no. 05, pp. 5–6, 2015.
- **A. Ramedani**, Y. Hatefi, and M. Mozafari, "Controlled delivery of cefixime trihydrate from organic-inorganic nanofiber composites," *Biointerface Res. Appl. Chem.*, 2016.
- H. Tabesh, Gh. Amoabediny, **A. Ramedani**, F. Ahmadi, and K. Mottaghy, "Modified Coating of Liposome Encapsulated Hemoglobin With Polyethylene Oxide," in *XLI ANNUAL ESAO CONGRESS - 17-20 SEPTEMBER 2014, ROME, ITALY, 2014*, p. 640.
- **A. Ramedani**, Z. Mahmoudi, A. Yazdanpanah, and M. Mozafari, "Emerging modification strategies of E2 protein nanoparticles as highly sensitive biosensors for point-of-care cancer diagnostics," in *Seminar on Sensor Science and Technology 2015 (SSST 2015)*, 2015, pp. 112–113.
- M. Sedighi, V. Khosravi, and **A. Ramedani**, "Estimating the Impact of Important Parameters on Biosorption of Cu and Mn Ions by *Bacillus Thuringiensis*," *New Cell. Mol. Biotechnol. J.*, vol. 2, no. 8, pp. 45–51, 2012.
- H. Najafi, B. Akbari, F. Najafi, B. Abrishamkar, **A. Ramedani** and A. Yazdanpanah, "Evaluation of relationship between filler amount, degree of conversion, and cytotoxicity: Approaching performance enhancement novel design for dental Bis-GMA /UDMA /TEGDMA composite," *The International Journal of Polymeric Materials and Polymeric Biomaterials*, 2016.

Chapter Books

- M. Mozafari, **A. Ramedani**, Y. N. Zhang, and D. K. Mills, "Thin films for tissue engineering applications," in *Thin Film Coatings for Biomaterials and Biomedical Applications*, H. J. Griesser, Ed. Woodhead Publishing (Elsevier), 2016, pp. 167–195.
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- M. Ghaffari, S. Moztarzadeh, F. Rahmadian, A. Yazdanpanah, **A. Ramedani**, D. K. Mills, and M. Mozafari, "Nanobiomaterials for bionic eye," in *Engineering of Nanobiomaterials*, A. M. Grumezescu, Ed. William Andrew (Elsevier), 2016, pp. 257–285.

- A. Yazdanpanah, Z. Rezvani, **A. Ramedani**, M. Gholipourmalekabadi, N. P. S. Chauhan, S. Moztaarzadeh, A. Urbanska, and M. Mozafari, “Chapter 14 - Nanobiomaterials set to revolutionize drug-delivery systems for the treatment of diabetes: State-of-the-art A2 - Grumezescu, Alexandru Mihai BT - Nanobiomaterials in Drug Delivery,” in Nanobiomaterials in Drug Delivery, A. M. Grumezescu, Ed. William Andrew Publishing (Elsevier), 2016, pp. 487–514.

Patents

- **A. Ramedani**, Gh. Amoabedini, H. Tabesh, “Artificial Blood (Liposome Encapsulated Hemoglobin Based on Polyethylene Oxide at The Nanoscale), ” Patent Number in Iran 77930
- **A. Ramedani**, Gh. Amoabedini, H. Tabesh, “Sulfite solution usable instead of blood with the rheology corrections, ” Patent Number in Iran 71603

Instrumental Experiences

Materials Characterization Techniques

- Electrospinning (professional)
- Dynamic Light Scattering (professional)
- Scanning Electron Microscopy (professional)
- Atomic Force Microscopy (professional)
- Scanning Tunneling Spectroscopy (professional)
- UV-Visible Spectroscopy (professional)
- X-Ray Diffraction
- IR Spectroscopy
- Thin-layer chromatography
- Auger Electron Spectroscopy, AES
- ICP

Drug Delivery Techniques

- Lipid based systems (professional)
- Polymer based systems (professional)
- Surfactant based systems

Work Experience

- Teacher Assistant in “General mathematics”, Lectured by Dr. Mohammad Reza Pournaki, Sharif University of Technology: 2016.
- Teacher Assistant in “Differential Equations”, Lectured by Dr. Mohammad Hadi Mostafid, Sharif University of Technology: 2016.
- Teacher in “Workshop on Nanotechnology”, Sharif University of Technology: Spring 2015.
- Teacher in “Workshop on Artificial Organs”, University of Tehran: 2013.
- Teacher Assistant in “Biomaterial”, Lectured by Dr. Ahmadi Tafti, University of Tehran: 2012.

Responsibilities: assisted grading exams and supervising students

Presentations*

- Piezoelectric Nanomaterials for Biomedical Applications, 2015
- Preparation and characterization of Hollow Fiber, 2012
- Contact Lenses, 2011
- Biomedical applications of Raman and infrared spectroscopy ,2011
- Preparation and characterization of Hydroxyapatite, 2010
- Dental Implants, 2010

** All of These were presented at University of Tehran*

Selected Passed Courses

- Biocompatibility (Grade: 19.6/20, Top Mark)
- Biochemical engineering and bioreactor design
- Detection and selection methods of medical materials (Grade: 19.5/20, Top Mark)
- Tissue engineering (Grade: 19.25/20, Top Mark)
- Quantum Chemistry (Grade: 18/20, Top Mark)
- Organic Chemistry II (Grade: 20/20, Top Mark)
- Non-Aqueous Analytical Chemistry (Grade: 19/20, Top Mark)
- Organic Synthesis (Grade: 19/20, Top Mark)
- Physical and mechanical properties of biomaterials
- Metals and their applications in medicine
- Ceramics and their applications in biomedical engineering
- Polymers and their applications in biomedical engineering
- Nanotechnology (Ph.D. course)

Computer Skills

- **Programming languages:** Fortran, C++
- **Industrial engineering and mathematics software:** MATLAB, LAMMPS, Visual Molecular Dynamics, MiniTab, SPSS, Comsol
- **Microsoft Office:** Excel, Word, PowerPoint

Language Skills

- English
 - Deutsch (Basic)
 - Persian (Native)
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Academic References

Prof. Abdolreza Simchi

Professor of Materials Science and Engineering, Sharif University of Technology

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Dr. Omid Sabzevari

Professor of Molecular Toxicology and Drug Metabolism, Tehran University of Medical Sciences

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