CURRICULUM VITAE

Date of revision: 9 Nov. 2024

Name: Mahnaz Ahmadi

Educations:

-BSc in Applied Chemistry (2007-2012)

Sharif University of Technology (SUT), Tehran, Iran.

-MSc in Physical Chemistry (2013-2015)

Iran University of Science and Technology (IUST), Tehran, Iran.

-Ph.D. in Pharmaceutical Nanotechnology (2018-2023)

Department of Pharmaceutics and Pharmaceutical Nanotechnology, School of Pharmacy, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran.

Average: 18.88 out of 20 in courses (1st rank in class)

1st rank of the PhD comprehensive exam

Dissertation Title: *Synthesis and Characterization of Radiolabeled Nanoscale Metal Organic Framework (NMOF) and In Vivo Evaluation to Pave the Way for Drug Delivery and Imaging*

Dissertation score: 20 out of 20

Member of Shahid Beheshti University of Medical Sciences Exceptional Talents Development Center

Career/Academic Appointment:

-R&D expert and Technical Supervisor (2015-2017)

ChitoTech Company (Producer of advanced wound dressings, hemostatic products and antiseptics)

-Health Researcher (Sep 2023- Aug 2024)

Medical Nanotechnology and Tissue Engineering Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran

-**Assistant Professor** (Aug 2024 - Current)

Department of Tissue Engineering and Applied Cell Sciences, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences

Professional honors & recognition:
- 1st rank in PhD entrance national exam in Pharmaceutical Biomaterials field, 2018
- 1st rank of the PhD comprehensive exam, 2020
- 1st team rank of Legalomed entrepreneurship Festival, 2021
- 1st rank in PhD class based on score, 2023

Grant History:
- *Evaluation of Zeolitic imidazolate framework-8 (ZIF-8) loaded with levofloxacin on Pseudomonas aeruginosa isolates from children with cystic fibrosis and its effect on MRC-5 and A549 cell lines, 2024, (Co-PI),* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.MSP.REC.1403.143
- *Machine learning-assisted rheumatoid arthritis formulations: an approach for smart pharmaceutical design, 2024, (Co-PI),* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.PHARMACY.REC.1403.083
- *A Review of Different Strategies to Design Biobetters and their Pharmacodynamics and Pharmacokinetics,2024, (Co-PI),* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.PHARMACY.REC.1403.145
- *Development of an artificial intelligence model to predict the therapeutic response to DMARDs using demographic indicators, clinical parameters, and laboratory results, (Co-PI),2024,* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.RETECH.REC.1403.329
- *Predicting the efficiency of nanoliposomes in cancer treatment using machine learning approach, 2024, (PI),* Communication with Industry (Red Crescent Society of the Islamic Republic of Iran)
- *Predicting the efficacy of gold nanostructures in photothermal therapy using artificial intelligence tools, 2024,* (*Co-PI*), Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.RETECH.REC.1402.836

Completed Grants:

- *Application of Metal organic framework ZIF-8 in methotrexate delivery, 2021. (**Co-Inv**)* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.PHARMACY.REC.1400.078

- *Synthesis, characterization and in vitro evaluation of MIL-100(Fe) in methotrexate delivery to rheumatoid arthritis, 2021. (**Co-Inv**)* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.PHARMACY.REC.1400.245

- *Synthesis and physicochemical evaluation of metal-organic frameworks: radiolabeling and in vivo investigation by SPECT imaging, 2020. (**Co-PI**).* Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.PHARMACY.REC.1399.151

- *Synthesis and labeling of metal-organic framework (MOF) with technetium-99m for diagnostic purposes*, 2020, *(**Co-PI**),* National Institute for Medical Research Development Islamic Republic Iran (**NIMAD**), Contract number: 988055

- *Predicting pharmacokinetics of drugs using artificial intelligence tools: a systematic review,* 2023, (**PI**), Shahid Beheshti University of Medical Sciences, Ethical approval ID: IR.SBMU.RETECH.REC.1401.716

- *Prediction of ovarian cancer using artificial intelligence tools,* 2023, (**Co-inv**), Tehran University of Medical Sciences, Ethical approval ID: IR.TUMS.SPH.REC.1401.277

- *Toxicity prediction of nanoparticles using data mining approaches, 2023, (**Co-PI**),* Ethical approval ID: IR.SBMU.PHARMACY.REC.1401.291

Lectures, Courses, Web-based educations:

- "Advanced Nanomaterials", PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2024.

- "Pharmaceutics", PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2024.

- "Disease diagnosis using nanotechnology", PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2024.

- "How to write a systematic review article", Technical workshop, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, August 2024.

- "How to write scientific articles?" Technical workshop, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, Dec 2023.

- "Nanotechnology In Biomedicine" Workshop, Neuroscience Research Center, Shahid Beheshti University of Medical Sciences, July 2023.

Bibliography:

Peer-reviewed original research:

- Ayyoubzadeh SM, Ayyoubzadeh SM, Zahedi H, Ahmadi M, Kalhori SR. Predicting COVID-19 incidence through analysis of google trends data in Iran: data mining and deep learning pilot study. JMIR public health and surveillance. 2020 Apr 14;6(2):e18828.
- Eslamian L, Ahmadi M, Ahmadi M. Prescribing aspirin for preeclampsia prevention in pregnant women during COVID-19: Should or shouldn't?. Iranian Journal of Pharmaceutical Research: IJPR. 2021;20(1):1-2.
- Ahmadi M, Siavashy S, Ayyoubzadeh SM, Kecili R, Ghorbani-Bidkorbeh F. Controllable synthesis of polymeric micelles by microfluidic platforms for biomedical applications: a systematic review. Iranian Journal of Pharmaceutical Research: IJPR. 2021;20(2):229.
- Ahmadi M, Ayyoubzadeh SM, Ghorbani-Bidkorbeh F, Shahhosseini S, Dadashzadeh S, Asadian E, Mosayebnia M, Siavashy S. An investigation of affecting factors on MOF characteristics for biomedical applications: A systematic review. Heliyon. 2021 Apr 1;7(4).
- Siavashy S, Soltani M, Ahmadi M, Landi B, Mehmanparast H, Ghorbani-Bidkorbeh F. A comprehensive review of one decade of microfluidic platforms applications in synthesis of enhanced carriers utilized in controlled drug delivery. Advanced Materials Technologies. 2022 Oct;7(10):2101615.
- Ahmadi M, Ebrahimnia M, Shahbazi MA, Keçili R, Ghorbani-Bidkorbeh F. Microporous metal–organic frameworks: Synthesis and applications. Journal of Industrial and Engineering Chemistry. 2022 Nov 25;115:1-1.
- Yoosefi S, Esfandyari-Manesh M, Ghorbani-Bidkorpeh F, Ahmadi M, Moraffah F, Dinarvand R. Novel biodegradable molecularly imprinted polymer nanoparticles for drug delivery of methotrexate anti-cancer; synthesis, characterization and cellular studies. DARU Journal of Pharmaceutical Sciences. 2022 Dec;30(2):289-302.
- Masoudifar R, Pouyanfar N, Liu D, Ahmadi M, Landi B, Akbari M, Moayeri-Jolandan S, Ghorbani-Bidkorpeh F, Asadian E, Shahbazi MA. Surface engineered metal-organic frameworks as active targeting nanomedicines for mono-and multi-therapy. Applied Materials Today. 2022 Dec 1;29:101646.
- Khounraz F, Khodadoost M, Gholamzadeh S, Pourhamidi R, Baniasadi T, Jafarbigloo A, Mohammadi G, Ahmadi M, Ayyoubzadeh SM. Prognosis of COVID-19 patients using lab tests: A data mining approach. Health Science Reports. 2023 Jan;6(1):e1049.
- Banaye Yazdipour A, Masoorian H, Ahmadi M, Mohammadzadeh N, Ayyoubzadeh SM. Predicting the toxicity of nanoparticles using artificial intelligence tools: a systematic review. Nanotoxicology. 2023 Jan 2;17(1):62-77.

- Ahmadi M, Khoramjouy M, Dadashzadeh S, Asadian E, Mosayebnia M, Geramifar P, Shahhosseini S, Ghorbani-Bidkorpeh F. Pharmacokinetics and biodistribution studies of [99mTc]-Labeled ZIF-8 nanoparticles to pave the way for image-guided drug delivery and theranostics. Journal of Drug Delivery Science and Technology. 2023 Mar 1;81:104249.
- Ahmadi M, Emzhik M, Mosayebnia M. Nanoparticles labeled with gamma-emitting radioisotopes: an attractive approach for in vivo tracking using SPECT imaging. Drug Delivery and Translational Research. 2023 Jun;13(6):1546-83.
- Hatamabadi D, Joukar S, Shakeri P, Balalaie S, Yazdani A, Khoramjouy M, Mazidi SM, Kobarfard F, Mosayebnia M, Bozorgchami N, Ahmadi M. Synthesis and Radiolabeling of Glu-Urea-Lys with 99mTc-Tricarbonyl-Imidazole-Bathophenanthroline Disulfonate Chelation System and Biological Evaluation as Prostate-Specific Membrane Antigen Inhibitor. Cancer Biotherapy & Radiopharmaceuticals. 2023 Sep 1;38(7):486-96.
- Pouyanfar N, Ahmadi M, Ayyoubzadeh SM, Ghorbani-Bidkorpeh F. Drug Delivery System Tailoring via Metal-organic Framework Property Prediction using Machine Learning: A Disregarded Approach. Materials Today Communications. 2023 Dec 23:107938.
- Ahmadi M, Ayyoubzadeh SM, Ghorbani-Bidkorpeh F. Toxicity prediction of nanoparticles using machine learning approaches. Toxicology. 2024 Jan 1;501:153697.
- Ahmadi M, Asadian E, Mosayebnia M, Dadashzadeh S, Shahhosseini S, Ghorbani-Bidkorpeh F. Optimization of the Synthesis and Radiolabeling of ZIF-8 Nanoparticles. Iranian Journal of Pharmaceutical Research: IJPR. 2024 Jan;23(1).
- Akhtari N, Ahmadi M, Kiani Doust Vaghe Y, Asadian E, Behzad S, Vatanpour H, Ghorbani-Bidkorpeh F. Natural agents as wound-healing promoters. Inflammopharmacology. 2024 Feb;32(1):101-25.
- Ahmadi M, Alizadeh B, Ayyoubzadeh SM, Abiyarghamsari M. Predicting Pharmacokinetics of Drugs Using Artificial Intelligence Tools: A Systematic Review. European Journal of Drug Metabolism and Pharmacokinetics. 2024 May;49(3):249-62.
- Banan K, Niknam S, Ahmadi M, Tabasi S, Ghalkhani M, Adabi M, Ghorbani-Bidkoreph F. Molecularly imprinted electrochemical sensor based on carbon nanofibers for Amiodarone determination. Microchemical Journal. 2024 May 1;200:110365.
- Ayyoubzadeh SM, Ahmadi M, Yazdipour AB, Ghorbani-Bidkorpeh F, Ahmadi M. Prediction of ovarian cancer using artificial intelligence tools. Health Science Reports. 2024 Jul;7(7):e2203.
- Heydari S, Masoumi N, Esmaeeli E, Ayyoubzadeh SM, Ghorbani-Bidkorpeh F, Ahmadi M. Artificial Intelligence in nanotechnology for treatment of diseases. Journal of Drug Targeting. 2024 Aug 16:1-20.
- Pouyanfar N, Anvari Z, Davarikia K, Aftabi P, Tajik N, Shoara Y, Ahmadi M, Ayyoubzadeh SM, Shahbazi MA, Ghorbani-Bidkorpeh F. Machine learning-assisted rheumatoid arthritis formulations: a review on smart pharmaceutical design. Materials Today Communications. 2024 Aug 27:110208.
- Jahanian M, Hosseini SS, Dehkordi ZA, Sadeghi K, Kalhori SR, Ayyoubzadeh SM, Ahmadi M. Machine Learning Approaches for Recognition and Classification of Nanomaterial Morphology. Materials Today Communications. 2024 Oct 28:110818.

Chapters, Books:

- Asadian E, Ahmadi M, Keçili R, Ghorbani-Bidkorbeh F. Emerging Metal-Organic Framework Nanomaterials for Cancer Theranostics. Cancer Nanotheranostics: Volume 1. 2021:231-74.

- Ahmadi M, Borhan A, Ghorbani-Bidkorbeh F, Sefat F, Shahbazi MA. Nano-targeted drug delivery approaches for bacterial infections. InEmerging Nanomaterials and Nano-Based Drug Delivery Approaches to Combat Antimicrobial Resistance 2022 Jan 1 (pp. 139-178). Elsevier.

- Mosayebnia M, Ahmadi M, Emzhik M, Hajiramezanali M. Gamma-ray involved in cancer therapy and imaging. InElectromagnetic Waves-Based Cancer Diagnosis and Therapy 2023 Jan 1 (pp. 295-345). Academic Press.

- Ahmadi M, Pouyanfar N, Banan K, Ghalkhani M, Mostafiz B, Peltola E, Ghorbani-Bidkorpeh F. Green magnetic nanoparticles for biomedical application. InGreen Magnetic Nanoparticles (GMNPs) 2024 Jan 1 (pp. 321-356). Elsevier.

- Masoudifar R, Moezzi SM, Shahrbabak SM, Ahmadi M, Hajihosseini S, Anvari Z, Saadati S, Pouyanfar N, Ghorbani-Bidkorpeh F. Nanotechnology-based theranostic approaches in brain diseases. InTheranostics Nanomaterials in Drug Delivery 2025 Jan 1 (pp. 363-393). Academic Press.