

CURRICULUM VITAE

Date of revision: 28 July 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](https://doi.org/10.24090/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](https://doi.org/10.24090/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](https://doi.org/10.24090/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](https://doi.org/10.24090/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](https://doi.org/10.24090/IR.SBMU.RETECH.REC.1402.836)*

- *Prediction of Loading Capacity of Polymeric Nanoparticles Using Machine Learning Methods, 2020, (PI), Shahid Beheshti University of Medical Sciences, Ethical approval ID: [IR.SBMU.PHARMACY.REC.1404.026](https://doi.org/10.24294/IR.SBMU.PHARMACY.REC.1404.026)*
- *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](https://doi.org/10.24294/IR.SBMU.PHARMACY.REC.1403.145)*
- *Predicting and simulating interactions of chemotherapy drugs using machine learning and molecular docking methods, 2025, (PI), Shahid Beheshti University of Medical Sciences, Ethical approval ID: [IR.SBMU.RETECH.REC.1404.135](https://doi.org/10.24294/IR.SBMU.RETECH.REC.1404.135)*
- *A Review on Protein Corona Formation on Nanoparticles and Prediction of its Composition Using Artificial Intelligence Tools, 2025, (PI), Shahid Beheshti University of Medical Sciences, Ethical approval ID: [IR.SBMU.RETECH.REC.1404.022](https://doi.org/10.24294/IR.SBMU.RETECH.REC.1404.022)*
- *Application of artificial intelligence in anticipating the attributes of ZIF-8 nanostructures alongside experimental evaluation, 2025, (Co-PI), Shahid Beheshti University of Medical Sciences, Ethical approval ID: [IR.SBMU.PHARMACY.REC.1403.288](https://doi.org/10.24294/IR.SBMU.PHARMACY.REC.1403.288)*
- *Synthesis and characterization of ZIF-8@Mxene nanosystem for metformin drug delivery in breast cancer, 2025, (Co-PI), Shahid Beheshti University of Medical Sciences, Ethical approval ID: [IR.SBMU.PHARMACY.REC.1402.238](https://doi.org/10.24294/IR.SBMU.PHARMACY.REC.1402.238)*

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](https://doi.org/10.24294/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](https://doi.org/10.24294/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](https://doi.org/10.24294/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:

- “Instrumentation and analysis techniques” PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2025.
- “Methods for synthesis of nanostructure” PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2025.
- “Advanced nanobiotechnology” PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2025.
- “Advanced Nanomedicine” PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2025.
- “Nanomaterials and Nanostructures” PhD course, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, 2025.
- “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-Bidkorbeh 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-Bidkorbeh 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-Bidkorpheh F. Pharmacokinetics and biodistribution studies of [^{99m}Tc]-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 ^{99m}Tc-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-Bidkorpheh 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-Bidkorpheh 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-Bidkorpheh 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-Bidkorpheh 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.
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- Ayyoubzadeh SM, Ahmadi M, Yazdipour AB, Ghorbani-Bidkorpheh F, Ahmadi M. Prediction of ovarian cancer using artificial intelligence tools. *Health Science Reports*. 2024 Jul;7(7):e2203.

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- Pouyanfar N, Anvari Z, Davarikia K, Aftabi P, Tajik N, Shoara Y, Ahmadi M, Ayyoubzadeh SM, Shahbazi MA, Ghorbani-Bidkorpheh F. Machine learning-assisted rheumatoid arthritis formulations: a review on smart pharmaceutical design. *Materials Today Communications*. 2024 Aug 27:110208.
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- Pouyanfar N, Farnam G, Ahmadi M, Masoudifar R, Banan K, Asadian E, Shahhosseini S, Shahbazi MA, Shirazi FH, Ghorbani-Bidkorpheh F. Synthesis, modification, characterization, and in vitro evaluation of chitosan-hyaluronic acid coated MIL-100 (Fe) nanoparticles for methotrexate delivery in rheumatoid arthritis. *International Journal of Biological Macromolecules*. 2024 Dec 1;283:137715.
- Ahmadi M. The future prospect of metal-organic frameworks for theranostic purposes in brain disorders. *Nanomedicine Journal*. 2025 Jan 1;12(1).
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- Movahedi S, Bahramian F, Ahmadi M, Pouyanfar N, Masoudifar R, Ghalkhani M, Hussain CM, Keçili R, Siavashi S, Ghorbani-Bidkorpheh F. Next-generation microfluidics based on artificial intelligence: Applications for food sample analysis. *Microchemical Journal*. 2025 Mar 19:113395.
- Pouyanfar N, Masoumi N, Ahmadi M, Ayyoubzadeh SM, Farnam G, Asadian E, Sefat F, Shirazi FH, Ghorbani-Bidkorpheh F. Comparison of laboratory-acquired ZIF-8 drug delivery-related parameters with literature-based data via machine learning tools. *Materials Today Chemistry*. 2025 Jul 1;47:102801.

Chapters, Books:

- Asadian E, Ahmadi M, Keçili R, Ghorbani-Bidkorpheh F. Emerging Metal-Organic Framework Nanomaterials for Cancer Theranostics. *Cancer Nanotheranostics: Volume 1*. 2021:231-74.
- Ahmadi M, Borhan A, Ghorbani-Bidkorpheh F, Sefat F, Shahbazi MA. Nano-targeted drug delivery approaches for bacterial infections. In *Emerging 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. In *Electromagnetic 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-Bidkorpheh F. Green magnetic nanoparticles for biomedical application. In *Green Magnetic Nanoparticles (GMNPs)* 2024 Jan 1 (pp. 321-356). Elsevier.
- Masoudifar R, Moezzi SM, Shahrabak SM, Ahmadi M, Hajihosseini S, Anvari Z, Saadati S, Pouyanfar N, Ghorbani-Bidkorpheh F. Nanotechnology-based theranostic approaches in brain diseases. In *Theranostics Nanomaterials in Drug Delivery* 2025 Jan 1 (pp. 363-393). Academic Press.