

Seyed Mohammad Amini

Researcher in Iran university of medical science, Hedayat highway, Tehran, Iran

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Education

2012-2017

- **PhD of Medical Nanotechnology**, Tehran University of Medical Sciences, School of Advanced Technologies in Medicine, Tehran, Iran

Thesis Title: Gold nanoparticles loaded nanoliposomes for RF modulated delivery of anticancer agent, Supervisors: Dr. Sharmin kharrazi (Assistant prof. TUMS), Prof. Jafari (dean of Nanomedicine research center, mashhad university of medical sciences). Advisors: Prof. Dinarvand (Dean of pharmacological school TUMS), Prof. Seyed Mehdi Rezayat (Prof of Pharmacology and toxicology Tums)

2010– 2012

- **M.Sc. of Medical Nanotechnology**, Tehran University of Medical Sciences, School of Advanced Technologies in Medicine, Tehran, Iran

Thesis Title: The role of Gold Nanoparticle on photodynamic efficiency of 5-ala photosensitizer in epidermal carcinoma cell line: an in vitro study. Supervisor: Reza Saber, Advisor: Sharmin kharrazi

2008 – 2010

- **B.Sc. of Radiology**, University of Medical Sciences (TUMS), School of Allied Medical Sciences, Tehran, Iran.

Occupations

- Assistant Professor at "Radiation Biology Research Center, Iran University of Medical Sciences, Tehran, Iran (2017-2024).
- Assistant Professor at "Microbial Biotechnology Research Center, Iran University of Medical Sciences, Tehran, Iran (Since 2025).

Selected Scientific Publications

1. Mesoporous silica coated gold nanorods: A Multifunctional Theranostic Platform for radiotherapy and x ray imaging. Journal of Porous Materials, 2021, 28(6), pp. 1961–1968.

2. Gold cluster encapsulated liposomes: Theranostic agent with stimulus triggered release capability. Medical Oncology 40 (5), 126, 2023

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3. Folate functionalized gold-coated magnetic nanoparticles effect in combined electroporation and radiation treatment of HPV-positive oropharyngeal cancer Medical Oncology, 39 (12), 1-10.

4. Antimicrobial Effects of Selenium Nanoparticles in Combination with Photodynamic Therapy Against Enterococcus faecalis Biofilm. Photodiagnosis and Photodynamic Therapy Volume 35, September 2021, 10239

5. Radiofrequency electric field hyperthermia with gold nanostructures: role of Particle shape and surface chemistry, Artificial Cells, Nanomedicine, and Biotechnology (Artificial cells, nanomedicine, and biotechnology 46 (7), 2018, 1452-1462,).

6. Folic acid decorated mesoporous silica nanospheres loaded with gadolinium for breast cancer cell imaging Advances in Natural Sciences: Nanoscience and Nanotechnology, 2020, 11(4), 045010.

7. Anti-Proliferative Activity of Poloxamer Cobalt Ferrite Nanoparticles against Human Prostate Cancer (DU-145) Cells: In-Vitro Study. IET Nanobiotechnology, March 2024, 8929168.

8. Plasmonic hyperthermia or radiofrequency electric field hyperthermia of cancerous cells through green synthesized curcumin coated gold nanoparticles. Lasers in Medical Science, 2022, 37(2), pp. 1333–1341.

9. Potential therapeutic effects of curcumin coated silver nanoparticle in the treatment of cutaneous leishmaniasis due to Leishmania major in-vitro and in a murine model. (Journal of Drug Delivery Science and Technology, Volume 74, August 2022, 103576).

10. Examining the Impact of Sonodynamic Therapy with Ultrasound wave in the Presence of Curcumin-Coated Silver Nanoparticles on the Apoptosis of MCF7 Breast Cancer Cells, IET Nanobiotechnology, (accepted, 2025)

Patents:

- **One pot synthesis of apigenin coated silver nanoparticles**

Patented in Iran

Industrial Property General Office, Intellectual Property Office, State Organization for Registration of Deeds and Properties, Iran. (Declaration number: 139850140003007768, Registration number: 102420)

- **Folding personal desk**

Industrial Property General Office, Intellectual Property Office, State Organization for Registration of Deeds and Properties, Iran. (Declaration number: 140050140003004373, Registration number: 107570)

- **Liposomal theranostic system containing gold clusters for tunable delivery of anticancer agents**

Industrial Property General Office, Intellectual Property Office, State Organization for Registration of Deeds and Properties, Iran. (Declaration number: 140250140003007801, Registration number:).

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Technical experiences

- Spectroscopy (UV-visible, FTIR, Raman, XRD)
- Microscopy (STM, TEM, SEM)
- DLS & zeta potential
- Synthesis & characterization of Polymeric, Silica, Metal and Metal Oxide, ... nanoparticles
- Designing a Liposomal Delivery Carrier for Anticancer Agent
- Photothermal Therapy
- Photodynamic Therapy
- Radiofrequency Electric Field.
- Cell Culture and Cell Cytotoxicity Analysis (MTT, LDH).
- Quantitative Polymerase Chain Reaction (qPCR/real-time PCR)
- X-ray Diagnostic Medical Systems (CT Scan, Conventional X-ray)
- Nanotechnology Application in Photodynamic Therapy

Editorial Board of Scientific Journals

IET Nanobiotechnology, Thrita Journal of Neuron

Awards

- I was recognized as one of the top 2% of scientists worldwide in the fields of nanotechnology and nanoscience, pharmacology and pharmaceuticals, and clinical medicine based on the October 1, 2023 updated to end of citation year 2022 (10.17632/btchxktzyw.6).
- Ranked Second among all participants nationwide in the National Entrance Ph.D Exam of Medical Nanotechnology, Iran, *February 2012*
- Ranked Fifth among all participants nationwide in the National Entrance M.Sc Exam of Medical Nanotechnology, Iran, *June 2009*
- Ranked Third among all participants nationwide in the National Entrance Exam of Bachelor Degree Radiology, Iran, *June 2007*
- Ranked First in Comprehensive Exam 2014 among Medical Nanotechnology PhD Student.
- Ranked Seventh among all participants nationwide in the National nano National Competition, Iran, *June 2012*
- Achievement of Honor of Award for the Nano-Related Dissertations “Iranian Nanotechnology Initiative Council” for my M.S thesis.
- Gold medal in the breaststroke competition of Iran University of Medical Sciences 2023

Teaching experiences:

- Drug delivery using nano particles
 - Introduction of nanotechnology For Nurse Students
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- Introduction of nanotechnology For High school Students
 - Nanotechnology applications in Cancer Treatment

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- Medical Nanotechnology Application
- Introduction on Nanomaterials
- Physique and instruments of Diagnostic ultrasound
- Nanomedicine
- Medical Informatics

Languages:

Laki, Kurdish, Persian, and English