Curriculum Vitae

Name: Mehdi Azizi
Date of birth: 5 May 1989
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Link to academic homepage and publications:
https://scholar.google.com/citations?user=8mvR0ykAAAAJ&hl=en&oi=ao

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Education

2016-2020

- PhD Medical Nanotechnology, Tabriz University of Medical Sciences, Faculty of Advanced Medical Sciences, Tabriz, Iran

2012– 2016

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

2008 – 2012

- B.Sc. of chemistry, Razi University, School of Chemistry, Kermanshah, Iran.

Research interests

- Applications of Nanomaterial in Medicine and Medical Diagnosis.
- Nanotechnology in Cancer Treatment Including Photothermal Therapy, Photo Dynamic Therapy, Chemotherapy and Radiotherapy.
- Applications of Nanotechnology in Antibacterial Application.
- Nanovaccine and Immunotherapy
- Nano Toxicology and Drug Delivery.
- Tissue engineering.

Thesis title & research project

- Design and manufacturing of smart Gold-Polymer Nanostructures as a Theranostic Agent for Enhanced Diagnosis and Guided Photothermal- Drug Therapies.

Supervisors: Dr. Roya Salehi (Associate Prof of tbzmed)
Prof. Hadi Valizadeh (Prof of tbzmed)
Dr. Mohammad Mehrmohammadi (Assistant prof of Wayne State University)
Advisors: Prof. S. Davaran (Dean of Medical Nanotechnology Group of tbzmed),
Dr. Reza Rahbar Ghazi (Associate Prof of tbzmed)

- Design and preparation of bitter almond oil nano-emulsion and evaluation of analgesic and anti-inflammatory effects of it.

Supervisor: Dr Amir Amani (Prof of TUMS)
Advisor: shahram Ejtemaei Mehr (Prof of TUMS)

Scientific Publication

Articles:

1. Interactions Between Tumor Biology and Targeted Nanoplatforms for Imaging Applications. (**Advanced Functional Material, IF: 19.92**)
   Mehdi Azizi, Hassan Dianat-Moghadam, Roya Salehi, Masoud Farshbaf, Disha Iyengar, Samaresh Sau, Arun K Iyer, Hadi Valizadeh, Mohammad Mehrmohammadi, Michael R Hamblin.
   (https://onlinelibrary.wiley.com/doi/abs/10.1002/adfm.201910402). (Accepted)

2. Bioinspired nano/hydrogels build a bridge from bench to bedside.
   (**Nano Today, IF: 20.7**)
   Khaled Seidi, M.H Ayoubi, **Mehdi Azizi**, Mehdi Jaymand, Rana Jahanban-Esfahlan, Michael R. Hamblin, Zohreh Amoozgar.
   (https://www.sciencedirect.com/science/article/abs/pii/S1748013221000827).
   (Accepted).

3. Potential applications of advanced hydrogels in biomedicine: Static, dynamic, multi-stage, and bioinspired. (**Advanced Functional Material, IF: 19.92**)
   Mohammad Hosein Ayoubi-Joshaghani, Khaled Seidi, **Mehdi Azizi**, Mehdi Jaymand, Tahereh Javaheri, Rana Jahanban-Esfahlan Michael R. Hamblin.
   (https://doi.org/10.1002/adfm.202004098). (Accepted).

4. Advanced Bioresponsive Multitasking Hydrogels in the New Era of Biomedicine. (**Advanced Functional Material, IF: 19.92**).
   Mostafa Niazi, Effat Alizadeh, Amir Zarebkohan, Khaled Seidi, Mohammad Hosein Ayoubi-Joshaghani, **Mehdi Azizi**, Hamed Dadashi, Hossein Mahmudi, Tahereh

Javaheri, Mehdi Jaymand, Michael R. Hamblin, Rana Jahanban-Esfahlan, Zohreh Amoozgar.
(https://onlinelibrary.wiley.com/doi/abs/10.1002/adfm.202104123). (Accepted)

5. The Role of Circulating Tumor Cells in the Metastatic Cascade: Biology, Technical Challenges, and Clinical Relevance. (**Cancers, IF: 6.57**)
   Hassan Dianat-Moghadam, **Mehdi Azizi**, Zahra Eslami-S, Luis Enrique Cortés-Hernández , Maryam Heidarifard ,Mohammad Nouri, and Catherine Alix-Panabières.
   (https://www.mdpi.com/2072-6694/12/4/867). (Accepted)

6. Synthesis of Self-Targeted Carbon Dot with Ultrahigh Quantum Yield for Detection and Therapy of Cancer. (**ACS Omega, IF:4.13**)
   Mehdi Azizi, Hadi Valizadeh, Mehdi Shahgolzari, Mehdi Talebi, Elahe Baybordi, Mohammad Reza Dadpour, Roya Salehi, and Mohammad Mehrmohammadi.
   (https://dx.doi.org/10.1021/acsomega.0c03215**).** (Accepted).

7. Efficacy of nano- and microemulsion-based topical gels in delivery of ibuprofen: an in vivo study. (**Journal of microencapsulation, IF:4.1**)
   Mehdi Azizi, Fariba Esmaeili, Alireza Partoazar, Shahram Ejtemaei Mehr & Amir Amani.
   (https://www.tandfonline.com/doi/abs/10.1080/02652048.2017.1316324).
   (Accepted).

8. Comparative effect of thermo/pH responsive polymer coated Gold Nanocages and hollow nanostars on Chemo-photothermal therapy of breast cancer cells. (**Cancer Nanotechnology, IF: 7.92**)
   Asrin Pakravan, **Mehdi Azizi**, Fariborz Rahimi, Farhad Bani, Farideh Mahmoudzadeh, Roya Salehi & Mehrdad Mahkam.
   (https://cancer-nano.biomedcentral.com/articles/10.1186/s12645-021-00091-x).
   (Accepted).

9. Modulation of LXR signaling altered the dynamic activity of human colon adenocarcinoma cancer stem cells in vitro (**Cancer Cell International, IF: 6.44**).
   Hassan Dianat-Moghadam, Mostafa Khalili, Mohsen Keshavarz, **Mehdi Azizi**, Hamed Hamishehkar, Reza Rahbarghazi, Mohammad Nouri.
   (https://cancerci.biomedcentral.com/articles/10.1186/s12935-021-01803-4).
   (Accepted)

10. An Optimal Method for Measuring Biomarkers: Colorimetric Optical Image Processing for Determination of Creatinine Concentration Using Silver Nanoparticles. (**The Journal of 3Biotech, IF: 2.89**).

Ramin Narimani, **Mehdi Azizi**, Mahdad Esmaeili, Seyed Hossein Rasta & Hamid Tayebi Khosroshahi.
(https://link.springer.com/article/10.1007/s13205-020-02405-z). (Accepted).

11. Advanced platelet-rich fibrin plus gold nanoparticles enhanced the osteogenic capacity of human mesenchymal stem cells. (**BMC research notes, IF: 1.66**).
Dara Ghaznavi, Amirreza Babaloo, Adileh Shirmohammadi, Arezoo Rezaie Nezhad Zamani, **Mehdi Azizi**, Reza Rahbarghazi & Aisan Ghaznavi.
(https://bmcresnotes.biomedcentral.com/articles/10.1186/s13104-019-4750-x).
(Accepted).

12. Synthesis, surface modifications, and biomedical applications of carbon nanofibers: Electrospun vs vapor-grown carbon nanofibers.
Samaneh Keshavarz, Oseweuba Valentine Okoro, Masoud Hamidi, Hossein Derakhshankhah, **Mehdi Azizi**, Seyed Mohammad Nabavi, Shayan Gholizad, Seyed Mohammad Amini, Amin Shavandi, Rafael Luque, Hadi Samadian (**Coordination Chemistry Reviews, IF:24.83**)
(https://www.sciencedirect.com/science/article/pii/S0010854522003654?dgcid=coauthor) (Accepted).
13. Immune evader cancer stem cells direct the perspective approaches to cancer immunotherapy
Hassan Dianat-Moghadam, Amir Mahari, Reza Salahlou, Mostafa Khalili, **Mehdi Azizi**, Hadi Sadeghzadeh. (**Stem Cell Research & Therapy, IF: 8.1)**
(https://stemcellres.biomedcentral.com/articles/10.1186/s13287-022-02829-9),
(Accepted).
14. Multifunctional plant virus nanoparticles: An emerging strategy for therapy of cancer **Mehdi Azizi,** Mehdi Shahgolzari, Sonia Fathi-Karkan, Maryam Ghasemi, Hadi Samadian (**Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, IF: 9.8**) (Accepted).
(https://wires.onlinelibrary.wiley.com/doi/abs/10.1002/wnan.1872)
15. Antibacterial activity of green gold and silver nanoparticles using ginger root extract Morteza Yadi, Mehdi Azizi, Hassan Dianat-Moghadam, Abolfazl Akbarzadeh, Morteza Abyadeh, Morteza Milani. **(Bioprocess and Biosystems Engineering, IF: 3.43)** (https://www.springer.com/journal/449)
16. Bacterial Polyglucuronic Acid/Alginate/Carbon Nanofibers Hydrogel Nanocomposite as a Potential Scaffold for Bone Tissue Engineering
Zahra Ebrahimvand Dibazar, Mahnaz Mohammadpour, Hadi Samadian, Soheila Zare, **Mehdi Azizi,** Masoud Hamidi, Redouan Elboutachfaiti, Emmanuel Petit, Cédric Delattre. **(Materials, IF: 3.74)** (https://www.mdpi.com/1996-1944/15/7/2494)

17. Nanobiotechnology: Intelligent Designs to Overcome Biological Barriers. **(Chemical Society Reviews, IF: 60)**. (Accepted proposal for publication).
Mehdi Azizi, Khaled Seidi, Zohreh Amoozgar, Rana Jahanban-Esfahlan, Sophie Laurent. Hadi Samadian, Shahbazi, Mohammad-Ali, Helder Santos

18. Design and Manufacturing of Smart Gold-Polymer Nanostructures as a Theranostic Agent for Enhanced Diagnosis and Guided Photothermal- Drug Therapies. **(Nanoscale, IF: 7.79)**
Mehdi Azizi, Asrin Pakravan, Hassan Dianat-Moghadam, Roya Salehi, and Mohammad Mehrmohammadi **(Submitted)**

19. Biological Synthesis of Gold and Silver Nanoparticles using Ginger (Zingiber Officinale) Extract and their antibacterial properties against Staphylococcus aureus and Escherichia coli. **(Artificial cells nanomedicine and biotechnology, IF: 5.68)**
Mortaza Yadi, Abolfazl Akbarzadeh, Amir Zarebkohan, Soodabeh Davaran, Lala Elgiz Nesibova, Siamak Saghfi, **Mehdi Azizi**, Morteza Milani. **(Under reviews)**

Books:

1. Targeted Cancer Imaging: Design and Synthesis of Nanoplatforms based on Tumor Biology. (**Elsevier, Text book**).
Mehdi Azizi, Hadi Kokabi, Hassan Dianat-moghadam, Mohammad Mehrmohammadi. (DAC Key: C2020-0-01540-9).

2. Handbook of nanomedicine (Jahad daneshgahi Tabriz, translation)
Seyed Mehdi Shahgolzari, Elahe Baybordi, **Mehdi Azizi**, Sonia Fathi, Soraya Babaei, Afagh Yavari.

International Conference Papers:

- **Efficacy of nano- and microemulsion-based topical gels in delivery of ibuprofen: an in vivo study,** 6th International Conference on Nanostructures (7-10 March 2016, p. 110-112).

- **Cytotoxic Effect of Gold Nanorod on Epidermal Carcinoma Cell Line in Photothermal Therapy.** Journal of Pharmaceutical & Health Sciences (3th, Iran Nano Safety Congress, Volume 6, Issue 3. Summer 2019, p193)

Technical experiences

- Spectroscopy (UV-visible)

- Microscopy (STM)
- DLS & zeta potential
- Polymeric, Metal and Metal Oxide Nanoparticles synthesis & characterization
- Designing a Liposomal Delivery Carrier for Anticancer Agent
- PCR
- Photothermal Therapy
- Photodynamic Therapy
- Radiofrequency Electric Field Hyperthermia
- Cell Culture and Cell Cytotoxicity Analysis (MTT, LDH)
- In Vivo animal Imaging

Research experiences & Participation

- Synthesis and preparation of core-shell iron oxide-carbon dot (based methotrexate and citrate) as theranostic agent and optimization of hyperthermia therapy properties of them.

- Effect of advanced platelet-rich fibrin + (A-PRF+) modified by gold nanoparticles on osteoblastic differentiation of human mesenchymal stem cells- in vitro.

- Design and manufacturing of smart Gold-Polymer Nanostructures as a Theranostic Agent for Enhanced Diagnosis and Guided Photothermal- Drug Therapies.

- Design and preparation of bitter almond oil nano-emulsion and evaluation of analgesic and anti-inflammatory effects of it.

- Synthesis of Methotrexate derivative carbon dot as a new self-targeted theranostic agent for targeting, diagnosis, and therapy of cancer cell.

- Green Synthesis of Gold and Silver Nanoparticles with use of Ginger (Zingiber Officinale) Extract and evaluation of their antibacterial properties against Staphylococcus aureus and Escherichia coli.

- Colorimetric optical image processing for determination of creatinine concentration with using PVP coated silver nanoparticles.

- Comparative effect of thermo/pH responsive polymer coated Gold Nanocages and hollow nanostars on Chemo-photothermal therapy of breast cancer cells.

- Designing and synthesis of nanocomposite hydrogel based on selenium-doped deferoxamine-derived carbon quantum dots (CQDs) and studying its

effect on the expression of genes involved in wound healing in the animal model.

- Fabrication, characterization, and biological properties evaluation of bioactive scaffold based on mineralized carbon nanofibers

- Design and manufacturing of biodegradable periochip with sustained-release of chlorhexidine for treating periodontal disease

- Fabrication, characterization, and application of 3D nanocomposite scaffold based on polyglucuronic acid-containing bioglass nanofibers for bone tissue regeneration

- Synthesis and evaluation of targeted CQD@HSA nanostructures as a dual-modality imaging agent for Magnetic resonance and Fluorescent Imaging

- In vitro and in vivo evaluation of nanofibrous wound dressing based on PCL nanofiber loaded with flax extract.

- Microneedle Patch to Deliver Nanovaccine Against Leishmaniosis Based on Ovalbumin- Dendritic Mesoporous Silica Nanoparticles coated with whole membrane-antigens of L. major promastigote

Honors and Awards

- Ranked Sixth among all participants nationwide in the National Entrance Ph.D Exam of Medical Nanotechnology, Iran, *2016*

- Ranked Third among all participants nationwide in the National Entrance M.Sc Exam of Medical Nanotechnology, Iran, *2012*

- Ranked First in Comprehensive Exam 2018 among Medical Nanotechnology PhD Student.

- Reviewer of prestige journals including Drug Discovery Today, Journal of Biomaterials Science, International Journal of Nanomedicine

Participation in International Congress

Iran Nano safety Congress, (10-20 Feb) 2014, Tehran University of Medical Sciences, Poster Presentation.

5th International Conference on Nanostructures, (6-9 March) 2016, Sharif University of Technology, Poster Presentation.

7th Asia Nanotech Camp (ANC2014), (9-11 Oct) 2014, Asia Nano Forum, Lecture & Poster Presentation.

Teaching experiences:

- Drug delivery using nano particles
- Introduction of nanotechnology
- Introduction of nanotechnology For High school Students
- Nanotechnology applications in Cancer Treatment
- Medical Nanotechnology Application
- Introduction on Nanomaterials

Computer Skills

- Origin pro
- Graph Pad Prism
- End Note (intermediate)
- Microsoft Office (Word, Power point, Excel)
- Adobe Acrobat Professional

Jobs and Teaching Experiences

- Assistant Professor of Medical Nanotechnology
- Member of R&D in the Ronak drug Company