

Personal Information:

Name: Mojtaba Falahati, Ph. D. in Biophysics

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Birth Date: 22.12.1980

Marital status: Single

Working address: Assistant Professor in Department of Nanotechnology, Faculty of Advance Science and Technology, Islamic Azad University of Pharmaceutical Sciences (IAUPS), Tehran, Iran (2012 -till now)



Education:

- **2006-2011: Ph.D. in Biophysics (Tehran University, Tehran, Iran)**

Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran.

Project Title: The study of structural stability and activity of superoxide dismutase upon immobilization onto the nano-porous materials.

Supervisors: Proffesor Ali Akbar Saboury, Proffesor Abbas Shafiee

- **2004 – 2006: M.Sc in Biophysics (Tehran University, Tehran, Iran)**

Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran.

Project Title: Repairment of Damaged Neural Membrane by Biodegradable Polymers.

supervisor: Dr. Hamid Mobasheri

- **2000 – 2004: B.Sc. in Biology (Ferdowsi University of Mashhad, Mashhad, Iran)**

Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran.

Skills:

- Fluorescence spectroscopy
- Calorimetry (ITC, DSC)
- Dynamic light scattering
- Circular dichroism (CD) spectroscopy
- UV-visible spectroscopy
- Docking studies

Language Skills:

- English (Advanced)
- Persian (Native)

Publications:

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1. Sharifi M, Hosseinali SH, Saboury AA, Szegezdi E, **Falahati M***. Involvement of planned cell death of necroptosis in cancer treatment by nanomaterials: Recent advances and future perspectives. *Journal of Controlled Release*. 2019 Feb 11.
 2. **Falahati M***, Attar F, Sharifi M, Haertlé T, Berret JF, Khan RH, Saboury AA. A health concern regarding the protein corona, aggregation and disaggregation. *Biochimica et Biophysica Acta (BBA)-General Subjects*. 2019 Feb 22.
 3. Roshanfekrnahzomi Z, Badpa P, Esfandiari B, Taheri S, Nouri M, Akhtari K, Shahpasand K, **Falahati M***. Silica nanoparticles induce conformational changes of tau protein and oxidative stress and apoptosis in neuroblastoma cell line. *International journal of biological macromolecules*. 2019 Mar 1;124:1312-20.
 4. Hosseinali SH, Boushehri ZP, Rasti B, Mirpour M, Shahpasand K, **Falahati M***. Biophysical, molecular dynamics and cellular studies on the interaction of nickel oxide nanoparticles with tau proteins and neuron-like cells. *International journal of biological macromolecules*. 2019 Mar 15;125:778-84.
 5. Mehdizadeh P, Fesharaki SS, Nouri M, Ale-Ebrahim M, Akhtari K, Shahpasand K, Saboury AA, **Falahati M***. Tau folding and cytotoxicity of neuroblastoma cells in the presence of manganese oxide nanoparticles: Biophysical, molecular dynamics, cellular, and molecular studies. *International journal of biological macromolecules*. 2019 Mar 15;125:674-82.
 6. Aliakbari F, Haji Hosseinali S, Khalili Sarokhalil Z, Shahpasand K, Akbar Saboury A, Akhtari K, **Falahati M***. Reactive oxygen species generated by titanium oxide nanoparticles stimulate the hemoglobin denaturation and cytotoxicity against human lymphocyte cell. *Journal of Biomolecular Structure and Dynamics*. 2019 Jan 17(just-accepted):1-1.
 7. Naserkhaki R, Zamanzadeh S, Baharvand H, Nabavi SM, Pakdaman H, Shahbazi S, Vosough M, Ghaedi G, Barzegar A, Mirtorabi D, **Falahati M**, Hedayatshodeh J. Cis pT231-tau Drives Neurodegeneration in Bipolar Disorder. *ACS chemical neuroscience*. 2019 Jan 15.
 8. Hajimohammadjafartehrani M, Hosseinali SH, Dehkohne A, Ghoraeian P, Ale-Ebrahim M, Akhtari K, Shahpasand K, Saboury AA, Attar F, **Falahati M***. The effects of nickel oxide nanoparticles on tau protein and neuron-like cells. *International journal of biological macromolecules*. 2019 Jan 14.

9. Fardanesh A, Zibaie S, Shariati B, Attar F, Rouhollah F, Akhtari K, Shahpasand K, Saboury AA, **Falahati M***. Amorphous aggregation of tau in the presence of titanium dioxide nanoparticles: biophysical, computational, and cellular studies. *International journal of nanomedicine*. 2019;14:901.
10. Anbouhi TS, Esfidvajani EM, Nemati F, Haghghat S, Sari S, Attar F, Pakaghideh A, Sohrabi MJ, Mousavi SE, **Falahati M***. albumin binding, anticancer and antibacterial properties of synthesized zero valent iron nanoparticles. *International journal of nanomedicine*. 2019;14:243.
11. Behzadi E, Sarsharzadeh R, Nouri M, Attar F, Akhtari K, Shahpasand K, **Falahati M***. Albumin binding and anticancer effect of magnesium oxide nanoparticles. *International journal of nanomedicine*. 2019;14:257.
12. ROS-mediated heme degradation and cytotoxicity induced by iron nanoparticles: Hemoglobin and lymphocyte cells as targets. S Mirzaei, Z Hadadi, F Attar, SE Mousavi, SS Zargar, A Tajik, AA Saboury, **Falahati M***. *Journal of Biomolecular Structure and Dynamics* 36 (16), 4235-4245
13. Attar F, Shahpar MG, Rasti B, Sharifi M, Saboury AA, Rezayat SM, **Falahati M***. Nanozymes with intrinsic peroxidase-like activities. *Journal of Molecular Liquids*. 2018 Dec 7.
14. Kermani ZR, Haghghi SS, Hajhosseinali S, Fashami AZ, Akbaritouch T, Akhtari K, Shahpasand K, **Falahati M***. Aluminium oxide nanoparticles induce structural changes in tau and cytotoxicity of the neuroblastoma cell line. *International journal of biological macromolecules*. 2018 Dec 1;120:1140-8.
15. Abdolmajid E, Kharazi H, Chalaki M, Khojasteh M, Haghghat S, Attar F, Nemati F, **Falahati M***. Titanium oxide nanoparticles fabrication, hemoglobin interaction, white blood cells cytotoxicity, and antibacterial studies. *Journal of Biomolecular Structure and Dynamics*. 2018 Nov 24:1-1.
16. Sharifi M, Avadi MR, Attar F, Dashtestani F, Ghorchian H, Rezayat SM, Saboury AA, **Falahati M***. Cancer diagnosis using nanomaterials based electrochemical nanobiosensors. *Biosensors and Bioelectronics*. 2018 Nov 19.
17. Rahmani S, Mogharizadeh L, Attar F, Rezayat SM, Mousavi SE, **Falahati M***. Probing the interaction of silver nanoparticles with tau protein and neuroblastoma cell line as nervous system models. *Journal of Biomolecular Structure and Dynamics*. 2018 Nov 18;36(15):4057-71.
18. Shariati B, Yektadoost E, Behzadi E, Azmoodeh E, Attar F, Sari S, Akhtari K, **Falahati M***. Interaction of silica nanoparticles with tau proteins and PC12 cells: Colloidal stability, thermodynamic, docking, and cellular studies. *International journal of biological macromolecules*. 2018 Oct 15;118:1963-73.
19. Nouri M, Esfahanizadeh N, Shahpar MG, Attar F, Sartipnia N, Akhtari K, Saboury AA, **Falahati M***. Cobalt oxide nanoparticles mediate tau denaturation and cytotoxicity against PC-12 cell line. *International journal of biological macromolecules*. 2018 Oct 15;118:1763-72.
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21. Ajdary M, Moosavi M, Rahmati M, **Falahati M**, Mahboubi M, Mandegary A, Jangjoo S, Mohammadinejad R, Varma R. Health concerns of various nanoparticles: A review of their in vitro and in vivo toxicity. *Nanomaterials*. 2018 Aug 21;8(9):634.

19. Jajroud SY, Falahati M*, Attar F, Khavari-Nejad RA. Human hemoglobin adsorption onto colloidal cerium oxide nanoparticles: A new model based on zeta potential and spectroscopy measurements. *Journal of Biomolecular Structure and Dynamics*. 2018 Aug 18;36(11):2908-16.22.
20. Rasti B, Mazraedoost S, Panahi H, **Falahati M***, Attar F. New insights into the selective inhibition of the β -carbonic anhydrases of pathogenic bacteria *Burkholderia pseudomallei* and *Francisella tularensis*: a proteochemometrics study. *Molecular diversity*. 2018 Aug 17:1-1.
21. Kavosi A, Noei SH, Madani S, Khalighfard S, Khodayari S, Khodayari H, Mirzaei M, Kalhori MR, Yavarian M, Alizadeh AM, **Falahati M***. The toxicity and therapeutic effects of single-and multi-wall carbon nanotubes on mice breast cancer. *Scientific reports*. 2018 May 30;8(1):8375.
22. Teimouri M, Khosravi-Nejad F, Attar F, Saboury AA, Kostova I, Benelli G, **Falahati M***. Gold nanoparticles fabrication by plant extracts: synthesis, characterization, degradation of 4-nitrophenol from industrial wastewater, and insecticidal activity—a review. *Journal of cleaner production*. 2018 May 20;184:740-53.
23. Zeinabad HA, Ghourchian H, **Falahati M**, Fathipour M, Azizi M, Boutorabi SM. Ultrasensitive interdigitated capacitance immunosensor using gold nanoparticles. *Nanotechnology*. 2018 May 2;29(26):265102.
24. Asl BA, Mogharizadeh L, Khomjani N, Rasti B, Pishva SP, Akhtari K, Attar F, **Falahati M***. Probing the interaction of zero valent iron nanoparticles with blood system by biophysical, docking, cellular, and molecular studies. *International journal of biological macromolecules*. 2018 Apr 1;109:639-50.
25. Sabziparvar N, Saeedi Y, Nouri M, Najafi Bozorgi AS, Alizadeh E, Attar F, Akhtari K, Mousavi SE, **Falahati M***. Investigating the interaction of silicon dioxide nanoparticles with human hemoglobin and lymphocyte cells by biophysical, computational, and cellular studies. *The Journal of Physical Chemistry B*. 2018 Mar 14;122(15):4278-88.
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28. Babadaei MM, Moghaddam MF, Solhvand S, Alizadehmollayaghoob E, Attar F, Rajabbeigi E, Akhtari K, Sari S, **Falahati M***. Biophysical, bioinformatical, cellular, and molecular investigations on the effects of graphene oxide nanosheets on the hemoglobin structure and lymphocyte cell cytotoxicity. *International journal of nanomedicine*. 2018;13:6871.
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31. Jafari Azad V, Kasravi S, Alizadeh Zeinabad H, Memar Bashi Aval M, Saboury AA, Rahimi A, **Falahati M***. Probing the conformational changes and peroxidase-like activity of cytochrome c upon interaction with iron nanoparticles. *Journal of Biomolecular Structure and Dynamics*. 2017 Sep10;35(12):2565-77.