



Curriculum Vitae

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Biography and career summary

I earned Bachelor 's of Science degree in pure chemistry from the University of Tabriz in 2007. I continued my master of science and PhD in organic chemistry at the University of Tabriz under supervision of Prof. Entezami. My thesis focused on the developing of novel intelligent drug delivery systems based on synthetic and natural polymers. For this purpose, thermosensitive nanohydrogels based on the PVA, PEG, starch and also magnetic nanoparticles were developed as potentially effective anti-cancer DDSs. During my research opportunity as MSc and PhD student, I got enough skills in different polymerization methods (such as free radical polymerization, controlled radical polymerization (ATRP), ring opening polymerization, anionic & cationic polymerization methods) as well as various nanoparticle synthesis and characterization techniques. I completed my Ph.D in 2014. Upon graduation, I joined the Research Center for Pharmaceutical Nanotechnology (RCPN), Tabriz University of Medical Science in 2015 up to February of 2019 as postdoctoral fellow under mentorship of Prof. Omidi and Prof. Barar. The experiences at RCPN was beneficial to develop my skills in the nano-biomaterial synthesis toward target DDS and earning new experience in cell culture techniques.

In February of 2019, I was appointed as assistant professor at RCPN and currently, my research area is focused on cancer drug delivery systems with emphasis on novel target drug delivery systems as well as tissue engineering and regeneration medicine.

Education

February 2013	PhD, Organic chemistry, Faculty of chemistry, University of Tabriz, Tabriz, Iran
September 2009	MSc, Organic chemistry, Faculty of chemistry, University of Tabriz, Tabriz, Iran
September 2007	BSc, Pure chemistry, Faculty of chemistry, University of Tabriz, Tabriz, Iran

Thesis

PhD Thermosensitive nanohydrogels based on biodegradable polymers;
Supervisor: Prof. Ali Akbar Entezami

MSc Naltrexone sustained release from thermosensitive and self-crosslinked (N-isopropylacryl amide-Acrylamide-Vinylpyrrolidone) prepared by hydrogen peroxide; **Supervisor:** Prof. Ali Akbar Entezami

Advised theses

1. Chitosan based thermosensitive hydrogel for ocular delivery of Vancomycin and Prednisolone

Role: Advisor

Student: Minoos Ganavi, PharmD thesis

Status: Ongoing

2. Preparation of polymeric injectable hydrogel scaffold for cartilage-articular tissue engineering

Role: Advisor

Student: Nazanin Amir-Yaghoobi, Ph.D thesis

Status: Ongoing

3. Formulation and in-vitro characterization of pH and thermo-sensitive chitosan based nanohydrogels for doxorubicin delivery

Role: Advisor

Student: Mohaddeseh Nagavi, PharmD thesis

Status: Ongoing

4. Extraction of the main antioxidants of the microalgae from the North West of Iran and evaluation their nanoparticle formulation in vitro

Role: Advisor

Student: Hamieh Goshtasbi, Ph.D thesis

Status: Ongoing

5. Biocompatibility evaluation of MTA mixed with planet mediated Nano silver using MTT assay

Role: Advisor

Student: Sanaz Amiri, DT thesis

Status: Ongoing

6. Isolation and study the effect of the secretory glycosides of some native probiotics in apoptosis and ferroptosis pathways in colon cancer cell lines

Role: Advisor

Student: Yalda Rahbar-Sadat, Ph.D thesis

Status: Ongoing

Grants

- **Synthesis, characterization and evaluation of ocular intelligent hydrogels for tissue engineering/ drug delivery**

Role: Co-PI

Funder: National Institute for Medical Research Development, Tehran, Iran

Status: Ongoing

- **Shikonin/erlotinib loaded HER2/antibody or aptamer armed multi-functional nanocarriers for the targeted therapy of ovarian cancer: In-Vitro investigation to In-Vivo application**

Role: Executer, Postdoctoral Project (2015-2017)

Funder: Iran National Science Foundation

Status: Finished

- **Smart injectable hydrogels based on modified chitosan as novel drug delivery systems for breast cancer therapy**

Role: Executer, Postdoctoral Project (2017-2018)

Funder: Iran National Science Foundation

Status: Finished

Projects:

- **The effect of chitosan-based injectable hydrogel on the survival and resistance to oxidative stress of the human bone marrow mesenchymal stem cells**

Role: Co-PI

Student: Zahra Olfat-Nobari; MSc thesis

Status: Finished

- **Evaluation of proliferation and differentiation of dental pulp stem cells on hydrogel scaffolds based on biodegradable polymer**

Role: Co-PI

Student: Mohammad Samiei, Ph.D thesis

Status: Ongoing

Appointments

2019- Present	Assistant Professor, Research Center for Pharmaceutical Nanotechnology Tabriz University of Medical Sciences, Tabriz, Iran
2014- 2019	Postdoctoral Fellow, Research Center for Pharmaceutical Nanotechnology Tabriz University of Medical Sciences, Tabriz, Iran

Published articles (peer reviewed)

- [Fathi, M., Alami-Milani, M., Geranmayeh, M.H., Barar, J., Erfan-Niya, H., Omid, Y. Dual thermo-and pH-sensitive injectable hydrogels of chitosan/\(poly\(N-isopropylacrylamide-co-itaconic acid\)\) for doxorubicin delivery in breast cancer, *International Journal of Biological Macromolecules*; 128, 2019, 957-964.](#)
- [Fathi, M., Majidi, S., Zangabad, P.S., Barar, J., Erfan-Niya, H., Omid, Y. Chitosan-based multifunctional nanomedicines and theranostics for targeted therapy of cancer, *Medicinal Research Reviews*; , 2018, 382110-2136.](#)
- [Fathi, M., Sahandi Zangabad, P., Barar, J., Aghanejad, A., Erfan-Niya, H., Omid, Y. Thermo-](#)

- [sensitive chitosan copolymer-gold hybrid nanoparticles as a nanocarrier for delivery of erlotinib, *International Journal of Biological Macromolecules*; 106, 2018, 266-276.](#)
- [Fathi, M., Zangabad, P.S., Aghanejad, A., Barar, J., Erfan-Niya, H., Omid, Y. Folate-conjugated thermosensitive O-maleoyl modified chitosan micellar nanoparticles for targeted delivery of erlotinib, *Carbohydrate Polymers*; 172, 2017, 130-141.](#)
 - [Arami, S., Rashidi, M.R., Mahdavi, M., Fathi, M., Entezami, A.A. Synthesis and characterization of Fe₃O₄-PEG-LAC-chitosan-PEI nanoparticle as a survivin siRNA delivery system, *Human and Experimental Toxicology*; 36, 2017, 227-237.](#)
 - [Fathi, M., Barar, J. Perspective highlights on biodegradable polymeric nanosystems for targeted therapy of solid tumors, *BioImpacts*; 7, 2017, 49-57.](#)
 - [Fathi, M., Zangabad, P.S., Majidi, S., Barar, J., Erfan-Niya, H., Omid, Y. Stimuli-responsive chitosan-based nanocarriers for cancer therapy, *BioImpacts*; 7, 2017, 269-277.](#)
 - [Sattari, M., Fathi, M., Daei, M., Erfan-Niya, Barar, J., Entezami, A.A. Thermoresponsive graphene oxide - Starch micro/nanohydrogel composite as biocompatible drug delivery system, *BioImpacts*; 7, 2017, 167-175.](#)
 - [Arami, S., Mahdavi, M., Rashidi, M.R., Fathi, M., Hejazi, M.S., Samadi, N. Multifunctional superparamagnetic nanoparticles: From synthesis to siRNA delivery. *Current Pharmaceutical Design*, 23, 2017, 2400-2409.](#)
 - [Arami, S., Mahdavi, M., Rashidi, M.R., Fathi, M., Hejazi, M. S., Samadi, N. Novel polyacrylate-based cationic nanoparticles for survivin siRNA delivery combined with mitoxantrone for treatment of breast cancer, *Biological*; 44, 2016, 487-496.](#)
 - [Barar, J., Aghanejad, A., Fathi, M., Omid, Y. Advanced drug delivery and targeting technologies for the ocular diseases, *BioImpacts*; 6, 2016, 49-67.](#)
 - [Fathi, M., Barar, J., Aghanejad, A., Omid, Y. Hydrogels for ocular drug delivery and tissue engineering, *Bioimpacts*; 5, 2015, 159-164.](#)
 - [Fathi, M., Entezami, A.A., Arami, S., Rashidi, M.R. Preparation of N-isopropylacrylamide/itaconic acid magnetic nanohydrogels by modified starch as a crosslinker for anticancer drug carriers, *International Journal of Polymeric Materials and Polymeric Biomaterials*; 64, 2015, 541-549.](#)
 - [Saleh-Ghadimi, L., Fathi, M., Entezami, A.A. Heteroarm star-shaped Poly \(N-isopropylacrylamide-co-itaconic acid\) copolymer prepared by glucose core as ATRP initiator, *International Journal of Polymeric Materials and Polymeric Biomaterials*; 63, 2014, 246-255.](#)
 - [Fathi, M., Entezami, A.A. Stable aqueous dispersion of magnetic iron oxide core-shell nanoparticles prepared by biocompatible maleate polymers, *Surface and Interface Analysis*, 46, 2014, 145-151.](#)
 - [Fathi, M., Reza Farajollahi, A., Akbar Entezami, A. Synthesis of fast response crosslinked PVA-g-NIPAAm nanohydrogels by very low radiation dose in dilute aqueous solution, *Radiation Physics and Chemistry*; 86, 2013, 145-154.](#)
 - [Fathi, M., Entezami, A.A., Pashaei-Asl, R. Swelling/deswelling, thermal, and rheological behavior of PVA-g-NIPAAm nanohydrogels prepared by a facile free-radical polymerization method,](#)

Journal of Polymer Research; 20, **2013**, 125.

- [Massoumi, B., Abdollahi, M., Fathi, M., Entezami, A.A., Hamidi, S. Synthesis of novel thermoresponsive micelles by graft copolymerization of N-isopropylacrylamide on poly\(\$\epsilon\$ -caprolactone-co- \$\alpha\$ -bromo- \$\epsilon\$ - caprolactone\) as macroinitiator via ATRP, *Journal of Polymer Research*; 20, **2013**, 47.](#)
- [Fathi, M., Entezami, A.A., Ebrahimi, A., Safa, K.D. Synthesis of thermosensitive nanohydrogels by crosslinker free method based on N-isopropylacrylamide: Applicable in the naltrexone sustained release, *Macromolecular Research*; 21, **2013**, 17-26.](#)