



RCPN



CURRICULUM VITAE

Name: Zahra Karimzadeh
Date of birth: Jan. 08, 1994

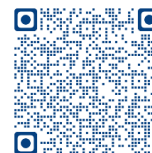


Contact information

Research Center for Pharmaceutical Nanotechnology, Biomedical Research Institute, Tabriz
University of Medical Sciences, Tabriz, Iran

Email: karimzadehz@tbzmed.ac.ir or karimzadeh94z@gmail.com

Home page: <https://scholar.google.com/citations?user=BDHyfuYAAAAJ&hl=en>
<https://www.scopus.com/authid/detail.uri?authorId=57212511854>
<https://orcid.org/0000-0001-8501-7124>



Google Scholar

Formal Education & Qualifications

2019-2023, Ph.D.: Pharmaceutical Chemistry

Department of pharmacy, Tabriz medical university, Tabriz, Iran.

Title of Ph.D. Thesis: Development of a new method based on nanocomposite hydrogels for the quantification of opioids in biological samples

2016-2018, M.Sc.: Organic chemistry and Biochemistry

Department of Chemistry and Biochemistry, University of Tabriz, Tabriz, Iran

Title of M.Sc. Thesis: Synthesis and characterization of nontoxic aerogel based on K-carrageenan, sodium alginate, and nanomaterials and evaluation of its application as a drug delivery system

2012-2016, B.Sc.: Chemistry

Department of Chemistry and Biochemistry, University of Tabriz, Tabriz, Iran

Recent Awards and Honors

- Awarded prize for the specialized student in Ph.D. course, The 22nd research, technology and entrepreneurship festival; Tabriz University of Medical Sciences, Tabriz, Iran. *2024*
- Awarded for the most influential women of Iran; Minister of Cooperatives, Labour and Social Welfare, Tabriz, Iran. *2024*
- Awarded as the best researcher in the country, (K). Tabriz University of Medical Sciences. *2023*
- Selected as the top talented Student in M.Sc. course in University of Tabriz. *2017*
- Selected as the top talented Student in Ph.D. course in Tabriz University of Medical Sciences. *2022*
- Awarded prize from National Elite Foundation, Shahid Vazavi and Ahmadi Roshan project. *2022*
- Awarded for the active and exemplary young people in the field of entrepreneurship, Tabriz. *2023*
- Accepted Ph.D. in organic chemistry through brilliant talent. *2019*
- Entering the M.Sc. course through the award of brilliant talented student. *2016*
- Selected as distinguished undergraduate student, University of Tabriz. *2016*

Work & Teaching Experiences

- Assistant Professor of Pharmaceutical Chemistry, Research Center for Pharmaceutical Nanotechnology, Biomedical Research Institute, Tabriz University of Medical Sciences. *2024-present*
- Lecturer in Faculty of Pharmacy, Tabriz University of Medical Science; Tabriz, Iran. *2019-present*
 - Analytical Chemistry course
 - Organic chemistry course
 - General Chemistry
 - Synthesis theory
- CEO, Kandoo-Shahd Shargh Azar Co. (food industrial company), Tabriz Iran. *2021-present*
- Director of research technical and development of the production department. Danial Aftab Azarbaijan Co. (food industrial company), Tabriz Iran. *2020-2021*

Member of:

- Managing Editor of ImmunoAnalysis Journal. *2024*
- Scientific Secretary Assistant of Economics and Entrepreneurship, National Congress of Influential Women, Tabriz. *2024*
- Editorial board of the academic magazine, Atom, Department of Chemistry, University of Tabriz. *2019*

Well experienced in:

- Teaching and advisor in scientific fields
- Pharmaceutical and Biomedical analysis of drugs
- Development of bio and nano sensors
- Development and validation of analytical methods using spectroscopic methods
- Nontoxic polymer-based nanostructures for biomedical applications
- Development of Polymers & Bio-polymers for Gene/drug delivery systems
- Design and synthesis of Metal Organic Framework and other nanostructures

Book chapters (in English language)

[1] Flexible and Wearable Sensors: Materials, Technologies, and Challenges. Chapter 21: Role of additive manufacturing in flexible and wearable sensors. *CRC Press*, ISBN9781032288178
Mahmoudpour M, **Karimzadeh Z**, Jouyban A, Soleymani J.

[2] Hydrogels: Fundamentals to Advanced Energy. Hydrogels for wearable electronics. Chapter 15. *CRC Press*. ISBN 9781003351566

Karimzadeh Z, Mahmoudpour M, Jouyban A, Rahimpour E.

[3] MXenes as Emerging Modalities for Environmental and Sensing Applications: Theories, Design and Approach. Chapter 14. *Elsevier*. ISBN: 9780443218521

Karimzadeh Z, Mahmoudpour M, Jouyban A, Rahimpour E.

[4] Surface Functionalized Nanomaterials. Chapter 10: Surface functionalized nanomaterials for sensing of heavy metals (*under process*)

Karimzadeh Z, Mahmoudpour M, Rahimpour E.

Publications

[1] **Zahra Karimzadeh**, Elaheh Rahimpour, William E. Acree Jr, Abolghasem Jouyban. Employing Abraham and Hansen Parameters for Solubility Prediction of Ketoconazole in Binary Solvents at Various Temperatures. *Journal of Solution Chemistry*.
<https://doi.org/10.1007/s10953-021-01121-3>

[2] **Zahra Karimzadeh**, M Hasanzadeh, I Isildak, B Khalilzadeh .Multiplex bioassaying of cancer proteins and biomacromolecules: Nanotechnological, structural and technical perspectives. *International Journal of Biological Macromolecules*.
<https://doi.org/10.1016/j.ijbiomac.2020.10.191>

- [3] **Zahra Karimzadeh**, Javanbakht S, Namazi H. Carboxymethylcellulose/MOF-5/Graphene oxide bio-nanocomposite as antibacterial drug nanocarrier agent. *BioImpacts*, 2019, 9(1), 5-13.
- [4] **Zahra Karimzadeh**, A Jouyban, E Rahimpour. Development of a Nanocluster-Based Platform for Determination of Sofosbuvir. *Pharmaceutical Sciences*. <https://doi.org/10.34172/PS.2021.57>
- [5] Mansour Mahmoudpour, **Zahra Karimzadeh**, Ghasem Ebrahimi, Mohammad Hasanzadeh, Jafar Ezzati Nazhad Dolatabadi. Synergizing Functional Nanomaterials with Aptamers Based on Electrochemical Strategies for Pesticide Detection: Current Status and Perspectives. *Critical Reviews in Analytical Chemistry*, 1-28. <https://doi.org/10.1080/10408347.2021.1919987>
- [6] A Jouyban, E Rahimpour, **Zahra Karimzadeh**. A new correlative model to simulate the solubility of drugs in mono-solvent systems at various temperatures. *Journal of Molecular Liquids*, 117587. <https://doi.org/10.1016/j.molliq.2021.117587>
- [7] S Hafez Ghoran, E Babaei, H Rezaei Seresht, **Zahra Karimzadeh**. cytotoxic Constituents and Molecular Docking Study of the Active Triterpenoids from *Tripleurospermum disciforme* (C. A. Mey.) Schultz-Bip. *Jundishapur Journal of Natural Pharmaceutical Products* 15 (2). <https://doi.org/10.5812/jjnpp.65760>
- [8] Mansour Mahmoudpour, **Zahra Karimzadeh**, Reza Yekta, Jafar Ezzati Nazhad Dolatabadi. Exploring the Binding Mode between Potassium Bromate and Bovine Serum Albumin: Multi-Spectroscopic and Molecular Modeling Analysis. *Journal of Molecular Liquids*. <https://doi.org/10.1016/j.molliq.2021.118060>
- [9] **Zahra Karimzadeh**, Namazi H. Nontoxic double-network polymeric hybrid aerogel functionalized with reduced graphene oxide: Preparation, characterization, and evaluation as drug delivery agent. *Journal of Polymer Research*. *Journal of Polymer Research* (2022) 29:37. <https://doi.org/10.1007/s10965-022-02902-0>
- [10] A Jouyban, E Rahimpour, **Zahra Karimzadeh**, Hongkun Zhao. Simulation of dapsone solubility data in mono- and mixed-solvents at various temperatures. *Journal of Molecular Liquids* 345 (2022) 118223. <https://doi.org/10.1016/j.molliq.2021.118223>
- [11] **Zahra Karimzadeh**, Mansour Mahmoudpour, Miguel de la Guardia, Jafar Ezzati Nazhad Dolatabadi, Abolghasem Jouyban .Aptamer-functionalized metal organic frameworks as an emerging nanoprobe in the food safety field: Promising development opportunities and translational challenges .*Trend in analytical chemistry* 2022. <https://doi.org/10.1016/j.trac.2022.116622>
- [12] **Karimzadeh Z**, Mahmoudpour M, Rahimpour E, Jouyban A. Nanomaterial based PVA nanocomposite hydrogels for biomedical sensing: Advances toward designing the ideal flexible/wearable nanoprobe. *Advances in Colloid and Interface Science*. <https://doi.org/10.1016/j.cis.2022.102705>
- [13] **Z. Karimzadeh**, A. Jouyban, M. Khoubnasabjafari, A. Gharakhani, E. Rahimpour. Utilizing Sucrose-Functionalized Gold Nanoparticles for Daclatasvir: Chemometric Optimization and Determination. *Plasmonics*. <https://doi.org/10.1007/s11468-022-01684-x>

- [14] **Karimzadeh Z**, Jouyban A, Ostadi A, Gharakhani A, Rahimpour E. A sensitive determination of morphine in plasma using AuNPs@UiO-66/PVA hydrogels as an advanced optical scaffold. *Analytica Chimica Acta*. <https://doi.org/10.1016/j.aca.2022.340252>
- [15] Zayed Al-Hamamre, **Zahra Karimzadeh**, Seulgi Ji, Heechea Choi, Hajar Maleki. Aerogels-Inspired based Photo- and Electrocatalyst for Water Splitting to Produce Hydrogen. *Applied Materials Today*. <https://doi.org/10.1016/j.apmt.2022.101670>
- [16] Sheida Khajir, **Zahra Karimzadeh**, Maryam Khoubnasabjafari, Vahid Jouyban-Gharamaleki, Elaheh Rahimpour, Abolghasem Jouyban. A Rayleigh light scattering technique based on β - cyclodextrin modified gold nanoparticles for phenytoin determination in exhaled breath condensate. *Journal of Pharmaceutical and Biomedical Analysis*. <https://doi.org/10.1016/j.jpba.2022.115141>
- [17] Sedigheh Mohammadzadeh, **Zahra Karimzadeh**. Development of a new method based on copper sulfide nanoparticles for the determination of fentanyl in biological samples. *Immunoanalysis*. <https://doi.org/10.34172/ia.2022.05>
- [18] **Zahra Karimzadeh**, Afshin Gharakhani, Elaheh Rahimpour, Abolghasem Jouyban. Dual-emission ratiometric fluorescent probe based on N-doped CQDs@UiO-66/PVA nanocomposite hydrogel for quantification of pethidine in human plasma. *microChimica Acta*. <https://doi.org/10.1007/s00604-023-05703-4>
- [19] **Zahra Karimzadeh**, E. Rahimpour, A. Jouyban. A follow-up study on “A sensitive determination of morphine in plasma using AuNPs@UiO-66/PVA hydrogel as an advanced optical scaffold”. *Journal of HELIYON*. <https://doi.org/10.1016/j.heliyon.2023.e15267>
- [20] B. Azad, **Zahra Karimzadeh**, A. Jouyban, E. Rahimpour. Utilizing a nanocomposite aerogel grafted with graphene oxide GO - Fe₃O₄ for extraction and determination of metoprolol in exhaled breath condensate. *RSC Advances*. <https://doi.org/10.1039/D3RA03883A>
- [21] A. Ali Akbari, **Z. Karimzadeh**, M. Khoubnasabjafari, V. Jouyban, A Jouyban, E. Rahimpour. Development of a surfactant mediated method for direct monitoring of atracurium in exhaled breath condensate. *Revista Colombiana de Ciencias Quimico Farmaceuticas*
- [22] A. Zarghampour, **Z. Karimzadeh**, M. Khoubnasabjafari, V. Jouyban-Gharamaleki, E. Rahimpour, A. Jouyban. A silver nanoprism-based “off-on” sensor for phenytoin determination in exhaled breath condensate. *Plasmonic*. <https://doi.org/10.1007/s11468-023-02157-5>
- [23] **Karimzadeh Z**, Mahmoudpour M, Rahimpour E, Jouyban A. Recent advancement in specific determination of carcinoembryonic antigen using MOF-based immunosensors. (*International Journal of Biological Macromolecule*). <https://doi.org/10.1039/D3RA07059J>
- [24] **Zahra Karimzadeh**, Mansour Mahmoudpour, Reza Yekta, Jafar Ezzati Nazhad Dolatabadi. Multi-spectroscopic and molecular docking analysis on the binding interactions of sodium propionate with bovine serum albumin. *Journal of Molecular structure*.

[25] **Zahra Karimzadeh**, Y. Sefid-Sefidehkhan, E. Rahimpour, A. Jouyban. Development and validation of a fast and reliable enzyme mimic nanocomposite hydrogel for determination of chlordiazepoxide. *RSC Advance*

[26] **Zahra Karimzadeh**, M. Khoubnasabjafari, V. Jouyban-Gharamaleki, E. Rahimpour, A. Jouyban. Double network polymeric hybrid hydrogel functionalized with AuNPs for quantification of morphine in exhaled breath condensate samples.

[27] Reza Moharami; **Zahra Karimzadeh**; Yosra Vaez-Gharamaleki; Jafar Soleymani; Abolghasem Jouyban. Development of a fluorescent probe based on UiO-66 metal-organic framework for determination of paclitaxel in urine samples. *Inorganic Chemistry Communications*. (under review)

[28] Reza Moharami, **Zahra Karimzadeh**, Jafar Soleymani, Vahid Jouyban-Gharamaleki, Maryam Khoubnasabjafari, Abolghasem Jouyban. Design and development of metal-organic framework-based nanocomposite hydrogels for quantification of deferiprone in exhaled breath condensate. *BMC Chemistry*. (under review)

[29] Kosar Shirazi, **Zahra Karimzadeh**, Mohammad Bagher Hosseini, Vahid Jouyban-Gharamaleki, Maryam Khoubnasabjafari, Jafar Soleymani, Abolghasem Jouyban. Utilizing nitrogen, sulfur, phosphorus, and chlorine co-doped carbon dots as a fluorescent probe for determination of vancomycin in exhaled breath condensate. *Heliyon*. (under review)

Conference Presentations

[1] **Karimzadeh Z**, Hashemi H, Javanbakht S, Namazi H. Surface functionalization of the Graphene Oxide by modified EDTA as a methylene blue absorbent. *7th international conference on nanostructures (ICNS7)*. Feb 27-Mar 01, 2018, Tehran, Iran.

[2] **Karimzadeh Z**, Namazi H, Sheikh Hassan abad R, Hashemi H. Chemical modification of graphene oxide surface by D-Galactose to remove Methylene Blue pigment. *1st Iranian applied chemistry seminar (IACSI)*. 22-23 august 2016, University of Tabriz, Tabriz, Iran.

[3] **Karimzadeh Z**, Hemmati A, Namazi H. Evaluation of potential dye removal using adsorption by amino acid modified graphene oxide nanoflakes. *25th Iranian seminar of analytical chemistry (ISAC25)*. 03-05 Sep, 2018, Tabriz, Iran.

[4] **Karimzadeh Z**, Rahimpour E, Jouyban A. Highly sensitive determination of daclatasvir using sucrose-capped gold nanoparticles in biological samples. *5th International Congress of Pharmacy-Updates and the 4th Annual Conference of IPharms*. 15-18 Feb, 2022, Shahid Beheshti University of medical sciences Tehran, Iran. (*Selected as best poster presenter*)

[5] **Karimzadeh Z**, Mahmoudpour M. Exploration of the interactions mechanism of sodium propionate with bovine serum albumin using multi-spectroscopic analysis. *5th International Congress of Pharmacy-Updates and the 4th Annual Conference of IPharms*. 15-18 Feb, 2022, Shahid Beheshti University of medical sciences, Tehran, Iran.

Research projects

- [1] Development of nano-materials based optical method for determination of daclatasvir dihydrochloride in biological fluids.
- [2] Spectroscopic, thermodynamic and molecular docking studies of bovine serum albumin and DNA interaction with sodium erythorbate and calcium propionate food additives.
- [3] Development of a new analytic method based on gold nanoparticles for the determination of phenytoin in exhaled breath condensate.
- [4] Development of a nanozyme based optical sensor for determination of vancomycin in the biological samples.
- [5] Synthesis of nanomaterials with enzymatic properties and their application in the monitoring of anti-epileptic drugs (such as lamotrigine, phenobarbital, phenytoin).
- [6] Aptamer-functionalized metal organic frameworks as an emerging nanoprobe in the food safety field: Recent advances
- [7] Development of optical method based on hydrogel enzyme mimics for determination of some benzodiazepine (such as diazepam, clonazepam, etc.)
- [8] A new method based on hydrogel nanohybrids for the quantification of morphine in human plasma samples
- [9] Development of a new method based on copper sulfide quantum dots for determination of fentanyl in biological samples
- [10] An “On-Off” sensor based on luminol-silver nanoprism system for the determination of phenytoin in exhaled breath condensate
- [11] Development of a new method based on silver nanocrystal for quantification of H₂O₂ in milk sample
- [12] Development of a sensor based on metal-organic framework for detection and determination of paclitaxel in biological samples
- [13] Development and design of natural nanocomposite hydrogels for dermal drug delivery
- [14] Development of a fluorescent sensor based on metal-organic framework for determination of cyclosporine in biological samples
- [15] Development of a new spectrofluorometric method based on carbon quantum dots doped with nitrogen, sulfur, phosphorus, and chlorine to determination of vancomycin in the exhaled breath condensate
- [16] Development of a colorimetric method based on layer double hydroxide as artificial enzyme for determination of antibiotics (e.g. vancomycin, gentamicin, amikacin, etc)
- [17] Design and development of metal-organic framework-based nanocomposite hydrogel for quantification of deferiprone in exhaled breath condensate

Reviewer of

- IEEE Sensors Journal
- Pharmaceutical sciences
- International Journal of Biological Macromolecules

Advised theses

1. Development of a new spectrofluorometric method based on carbon quantum dots doped with nitrogen, sulfur, phosphorus, and chlorine to determination of vancomycin in the exhaled breath condensate. Role: Advisor of M.Sc. thesis
2. Design and development of metal-organic framework-based nanocomposite hydrogel for quantification of deferiprone in exhaled breath condensate. Role: Advisor of M.Sc. thesis

Workshops

- Chemical biology 2020. European molecular biology organization. Germany
- ChemBioGels 2021: Advances in hydrogels for biomedical applications. Portugal
- Molecular Docking 2021. Virtual university of medical science. Iran
- Python 2021. University of Tabriz. Iran
- EMBO workshop:Chemical biology 2022. Heidelberg, Germany

Languages

- Germany (*B2*)
- English (*Professional*)
- Persian (*Native*)
- Azeri (*Mother Tongue*)
- Turkish (*Fluent*)