Tannaz Sadeghi Rad

- Postdoctoral researcher at Tabriz University of Medical Sciences
- h-index = 19

General Info

- Gender: Female
- Marital status: Single
- Date of birth: 21/09/1990
- Nationality: Iranian

Professional summary

- 29 published papers in international SCI-indexed journals (13 papers as first author, 23 papers with the journal impact factor (IF) > 5).

- participation in the 7 international and national scientific conferences (10 papers)

- Visiting researcher at the Departamento de Quimica Organica, Universidad de Cordoba under the supervision of Prof. Rafael Luque (2020, funded by the Ministry of Science, Research, and Technology (MSRT), Iran)

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Educational background

- University of Tabriz - Tabriz, Iran — Ph.D. Applied Chemistry (2016-2020)

Synthesis of modified magnetite nanostructures by chromium, cerium and reduced graphene oxide: evaluating the photocatalytic, antibacterial, and antialgal properties

- University of Tabriz - Tabriz, Iran — M.Sc. Applied Chemistry (2013-2015)

Investigation of the heterogeneous catalytic ozonation process in the presence of natural clinoptilolite nanostructures modified by using the plasma technique for the treatment of water contaminated with pharmaceuticals

- University of Tabriz - Tabriz, Iran — B.Sc. Applied Chemistry (2009 – 2012)

Professional experiences

➢ **Postdoctoral research fellow**

Iran National Science Foundation (INSF) (4025935) project

Tabriz University of Medical Sciences (TUOMS), Tabriz, Iran (01/2024-01/2026)

Title: Preparation of a chitosan-alginate hydrogel modified graphene oxide nanocomposite for controlled NIR light-triggered release of mesenchymal stem cells secretome for wound healing

Supervisors: Prof. Soodabeh Davaran, and Prof. Abolfazl Barzegari

➢ **Postdoctoral research fellow**

Scientific and technological research council of turkey (TÜBITAK) (120Y350) project

Gebze Technical University (GTÜ), Turkey (04/2021- 04/2023)

Awards

- ❖ A member of Iran's National Elites Foundation (2019 and 2020)
- ❖ A member of Talented Students Affairs (2016-2020)
- ❖ Ph.D. proposal was supported by Iran National Science Foundation (INSF, 2019, Grant No: 97023561)
- ❖ Post. Doc proposal was supported by Scientific and technological research council of turkey (TÜBITAK) (2021, 120Y350)
- ❖ Post. Doc proposal was supported by Iran National Science Foundation (INSF,2024, Grant No: 4025935).

Languages

- ❖ Persian (fluent)
- ❖ Turkish (fluent)
- ❖ English (fluent)
- ❖ Spanish (basic)

Title: Synthesis of the Cr-based LDHs and their composites with carbon-based materials (graphene oxide, reduced graphene oxide, biochar and carbon nanotubes) for sonocatalytic and sonophotocatalytic degradation of emerging organic contaminants

Supervisors: Prof. Alireza Khataee, Prof. Mehmet kobya, and Dr. Erhan Gengec

Skills and expertise

- **Processes:**

  Water and wastewater treatment, Chemiluminescence, Advanced Oxidation Processes, Photocatalysis, Sonocatalysis, Ozonation, Activation by oxidants, Fenton, Nanotechnology, Adsorption, Antibacterial Activity, Algae decontamination, Plasma treatment, Photothermal therapy, Wound healing, Secretome release, Exosome extraction,

- **Material Characterizations:**

  XRD, XPS, SEM/EDX, TEM, VSM, FTIR, Raman, BET, DRS, Dotmapping, PL, GCMS, HPLC, ICP-MS, AAS, COD, TOC, DLS, Nanodrop, Western blot, Flow cytometry analysis, Q-PCR, Scratch assay, MTT analysis, Animal studies, Mechanical characteristics of hydrogels

- **Material synthesis:**

  Magnetic nanoparticles, Heterogeneous catalysis, Zeolite modification, Graphene oxide, Reduced graphene oxide, Biochar, Carbon nanotube, Layered double hydroxides, Nanocomposites, Hydrogels, Chitosan, Alginate

- **Software:**

  Microsoft Office, Origin, Endnote, Mendeley, Zotero, Vesta, CasaXPS, Digimizer, Image J, Corel painter

Conferences (*Presenter)

1. Alireza Khataee, **Tannaz Sadeghi Rad***, Mehrangiz Fathinia, Toxicity investigation of catalytic ozonation process in the presence of Lemna. minor, 7th International Congress of Biology, Tabriz, Iran, (Poster, abstract, presenter), 30 Aug.-1 Sept. 2016

2. Alireza Khataee, **Tannaz Sadeghi Rad***, Sirous Khorram, Synthesis of natural clinoptilolite nanorods by using glow discharge plasma technology and investigation of its efficiency in the heterogeneous catalytic ozonation process, The 3rd conference of engineering and physics of plasma, (Poster, abstract, presenter), 21-22 May 2015

3. Alireza Khataee, **Tannaz Sadeghi Rad***, Sirous Khorram, Production of clinoptilolite nanorods by corona plasma and investigation of its efficiency in sono-Fenton–like process, First Iranian Applied Chemistry Seminar, Tabriz, Iran, (Poster, abstract, presenter), 22-23 August 2016

4. Tannaz Sadeghi Rad*, Alireza Khataee, Mehrangiz Fathinia, Kinetic modeling of catalytic ozonation process in presence of clinoptilolite nanorods for nalidixic acid degradation, First Iranian Applied Chemistry Seminar, Tabriz, Iran, (Poster, abstract, presenter), 22-23 August 2016

5. Alireza Khataee*, Sahand Nikzat, **Tannaz Sadeghi Rad**, Mehmet Kobya, Synthesis of NiFe LDH deposited on reduced graphene oxide for degradation of moxifloxacin by sono–photocatalytic process, 4th International Conference on Recycling and Reuse, Istanbul, Turkey, (Oral, abstract), 24-26 October, 2018

6. Tannaz Sadeghi Rad*, Emine Sevval Yazici, Alireza Khataee, Erhan Gengec, Mehmet Kobya, Sonocatalytic decomposition of organic pollutant under visible light over graphene-based NiCr layered double hydroxide, Third international Environmental Chemistry conference, Antalya, Turkey, 3rd international Environmental Chemistry conference, (Oral, full paper, presenter), 01-04 November, 2021

7. Tannaz Sadeghi Rad*, Alireza Khataee, Samin Sadeghi Rad, Samira Arefi-Oskoui, Erhan Gengec, ZnCr Layered Double Hydroxide@Biochar as Novel Sonophotocatalyst for Antibiotic Decontamination, Third international Environmental Chemistry conference, Antalya, Turkey, 3rd international Environmental Chemistry conference, (Oral, full paper, presenter), 01-04 November, 2021

8. Samin Sadeghi Rad*, Samira Arefi-Oskoui, **Tannaz Sadeghi Rad**, Alireza khataee, Erhan Gengec, Mehmet Kobya, Sonocatalytic degradation of dimethyl phthalate using CoCr layered double hydroxide, Tabriz, Iran, 21st ICS international chemistry congress, (poster, abstract), 26-28 July, 2022

9. **Tannaz Sadeghi Rad***, Soodabeh Davaran, Salva Golgoun, Fabrication of NIR-responsive graphene oxide/chitosan/alginate hydrogel for tissue engineering, Tehran, Iran, 6th International and 14th National Biotechnology Congress, (Oral, full paper), 22-24 October, 2025

10. Salva Golgoun*, Soodabeh Davaran, **Tannaz Sadeghi Rad**, Fabrication and characterization of hyaluronic acid/chitosan/alginate hydrogel for the application in wound healing, Tehran, Iran, 6th International and 14th National Biotechnology Congress, (Poster, full paper), 22-24 October, 2025

Publications in Internationally-referred journals (*Corresponding author)

1) Khataee, A. *, **Rad, T. S.**, Fathinia, M., & Joo, S. W*. (2016). Production of clinoptilolite nanorods by glow discharge plasma technique for heterogeneous catalytic ozonation of nalidixic acid. **RSC advances (IF = 4.6)**, 6(25), 20858-20866. *https://doi.org/10.1039/C5RA25711E*

2) Iranifam, M., Fathinia, M., **Rad, T. S.**, Hanifehpour, Y., Khataee, A. R.*, & Joo, S. W*. (2013). A novel selenium nanoparticles-enhanced chemiluminescence system for determination of dinitrobutylphenol. **Talanta (IF = 6.1)**, 107, 263-269. *https://doi.org/10.1016/j.talanta.2012.12.043*

3) Khataee, A.*, Fathinia, M., & **Rad, T. S.** (2016). Kinetic modeling of nalidixic acid degradation by clinoptilolite nanorod-catalyzed ozonation process. **RSC advances (IF = 4.6)**, 6(50), 44371-44382. *https://doi.org/10.1039/C6RA04500F*

4) Khataee, A.*, **Rad, T. S.**, & Fathinia, M. (2017). The role of clinoptilolite nanosheets in catalytic ozonation process: insights into the degradation mechanism, kinetics and the toxicity. **Journal of the Taiwan Institute of Chemical Engineers (IF = 6.3)**, 77, 205-215.

https://doi.org/10.1016/j.jtice.2017.05.004

5) Khataee, A.*, **Rad, T. S.**, Vahid, B., & Khorram, S. (2016). Preparation of zeolite nanorods by corona discharge plasma for degradation of phenazopyridine by heterogeneous sono-Fenton-like process. **Ultrasonics sonochemistry (IF = 9.7)**, 33, 37-46. *https://doi.org/10.1016/j.ultsonch.2016.04.015*

6) Khataee, A.*, Mohamadi, F. T., **Rad, T. S.**, & Vahid, B. (2018). Heterogeneous sonocatalytic degradation of anazolene sodium by synthesized dysprosium doped CdSe nanostructures. **Ultrasonics sonochemistry (IF = 9.7)**, 40, 361-372. *https://doi.org/10.1016/j.ultsonch.2017.07.021*

7) Rad, T. S., Khataee, A.*, & Pouran, S. R. (2018). Synergistic enhancement in photocatalytic performance of Ce (IV) and Cr (III) co-substituted magnetite nanoparticles loaded on reduced graphene oxide sheets. **Journal of colloid and interface science (IF = 9.7)**, 528, 248-262. *https://doi.org/10.1016/j.jcis.2018.05.087*

8) Rad, T. S., Khataee, A.*, Kayan, B., Kalderis, D., & Akay, S. (2018). Synthesis of pumice-TiO_2 nanoflakes for sonocatalytic degradation of famotidine. **Journal of Cleaner Production (IF = 10)**, 202, 853-862. *https://doi.org/10.1016/j.jclepro.2018.08.165*

9) Motlagh, P. Y., Khataee, A.*, **Rad, T. S.**, Hassani, A., & Joo, S. W.* (2019). Fabrication of ZnFe-layered double hydroxides with graphene oxide for efficient visible light photocatalytic performance. **Journal of the Taiwan Institute of Chemical Engineers (IF = 6.3)**, 101, 186-203. *https://doi.org/10.1016/j.jtice.2019.04.051*

10) Khataee, A.*, **Rad, T. S.**, Nikzat, S., Hassani, A., Aslan, M. H., Kobya, M., & Demirbaş, E. (2019). Fabrication of NiFe layered double hydroxide/reduced graphene oxide (NiFe-LDH/rGO) nanocomposite with enhanced sonophotocatalytic activity for the degradation of moxifloxacin. **Chemical Engineering Journal (IF = 13.2)**, 375, 122102 (Hot paper, received 237 citations, which is placed in the top 0.1% of papers in the academic field of engineering**)**. *https://doi.org/10.1016/j.cej.2019.122102*

11) Motlagh, P. Y., Khataee, A.*, Hassani, A., & **Rad, T. S.** (2020). ZnFe-LDH/GO nanocomposite coated on the glass support as a highly efficient catalyst for visible light photodegradation of an emerging pollutant. **Journal of Molecular Liquids (IF = 5.2)**, 302, 112532.

https://doi.org/10.1016/j.molliq.2020.112532

12) **Rad, T. S.**, Khataee, A.*, Pouran, S. R., & Joo, S. W.* (2020). The key role of free radicals generated from activation of H_2O_2, $S_2O_8^{2-}$ and ozone over chromium/cerium co-doped magnetite nanoparticles. **Separation and Purification Technology (IF = 9)**, 239, 116538. *https://doi.org/10.1016/j.seppur.2020.116538*

13) **Rad, T. S.**, Ansarian, Z., Soltani, R. D. C., Khataee, A.*, Orooji, Y.*, & Vafaei, F. (2020). Sonophotocatalytic activities of FeCuMg and CrCuMg LDHs: Influencing factors, antibacterial effects, and intermediate determination. **Journal of Hazardous Materials (IF = 11.3)**, 399, 123062. (Hot paper, received 100 citations, which is placed in the top 0.1% of papers in the academic field of engineering). *https://doi.org/10.1016/j.jhazmat.2020.123062*

14) **Rad, T. S.**, Ansarian, Z., Khataee, A.*, Vahid, B., & Doustkhah, E. (2021). N-doped graphitic carbon as a nanoporous MOF-derived nanoarchitecture for the efficient sonocatalytic degradation process. **Separation and Purification Technology (IF = 9)**, 256, 117811. *https://doi.org/10.1016/j.seppur.2020.117811*

15) **Rad, T. S.**, Khataee, A.*, Vafaei, F., & Pouran, S. R.* (2021). Chromium and cerium co-doped magnetite/reduced graphene oxide nanocomposite as a potent antibacterial agent against S. aureus. **Chemosphere (IF = 8.1)**, 274, 129988. *https://doi.org/10.1016/j.chemosphere.2021.129988*

16) **Rad, T. S.**, Khataee, A.*, Arefi-Oskoui, S., Rad, S. S., Orooji, Y., Gengec, E., & Kobya, M. (2022). Graphene-based ZnCr layered double hydroxide nanocomposites as bactericidal agents with high sonophotocatalytic performances for degradation of rifampicin. **Chemosphere (IF = 8.1)**, 286, 131740. *https://doi.org/10.1016/j.chemosphere.2021.131740*

17) Abolhasan, R., Khalilzadeh, B.*, Yousefi, H., Samemaleki, S., Chakari-Khiavi, F., Ghorbani, F., ... **Tannaz Sadeghi Rad** (2021). Ultrasensitive and label free electrochemical immunosensor for detection of ROR1 as an oncofetal biomarker using gold nanoparticles assisted LDH/rGO nanocomposite. **Scientific reports (IF = 3.9)**, 11(1), 1-11. *https://doi.org/10.1038/s41598-021-94380-5*

18) **Rad, T. S.**, Khataee, A.*, Rad, S. S., Arefi-Oskoui, S., Gengec, E., Kobya, M., & Yoon, Y.* (2021), Zinc-chromium layered double

hydroxides anchored on carbon nanotube and biochar as affordable catalysts in ultrasound-assisted photocatalytic process, **Ultrasonics sonochemistry (IF = 9.7)**, 82, 105875. *https://doi.org/10.1016/j.ultsonch.2021.105875*

19) Tannaz Sadeghi Rad, Emine Sevval Yazici, Alireza khataee, Erhan Gengec, Mehmet Kobya (2022), Nanoarchitecture of graphene nanosheets decorated with NiCr layered double hydroxide for sonophotocatalytic degradation of refractory antibiotics, **Environmental Research (IF = 7.7)**, 214, 113788. *https://doi.org/10.1016/j.envres.2022.113788*

20) Sultan Akdağ, **Tannaz Sadeghi Rad**, Ramazan Keyikoğlu, Yasin Orooji, Yeojoon Yoon, Alireza Khataee (2022), Peroxydisulfate-assisted sonocatalytic degradation of metribuzin by La-doped ZnFe layered double hydroxide, **Ultrasonics Sonochemistry (IF = 9.7)**, 91, 106236. *https://doi.org/10.1016/j.ultsonch.2022.106236*

21) Tannaz Sadeghi Rad, Emine Sevval Yazici, Alireza Khataee, Erhan Gengec, Mehmet Kobya (2023), Ultrasound-assisted photocatalytic decomposition of rifadin with biochar and CNT-based NiCr layered double hydroxides, **Surfaces and Interfaces (IF = 6.3)**, 36, 102628. *https://doi.org/10.1016/j.surfin.2022.102628*

22) Buse Sert, Zeynep Bilici, Kasim Ocakoglu, Nadir Dizge, **Tannaz Sadeghi Rad**, Alireza Khataee (2023), Preparation of S-Scheme g-C_3N_4/ZnO Heterojunction Composite for Highly Efficient Photocatalytic Destruction of Refractory Organic Pollutant, **Catalysts (IF = 4)**, 13, 485. *https://doi.org/10.3390/catal13030485*

23) Tannaz Sadeghi Rad, Emine Sevval Yazici, Alireza Khataee, Erhan Gengec, Mehmet Kobya (2023), Tuned CuCr layered double hydroxide/carbon-based nanocomposites inducing sonophotocatalytic degradation of dimethyl phthalate, **Ultrasonics Sonochemistry (IF = 9.7)**, 95, 106358. *https://doi.org/10.1016/j.ultsonch.2023.106358*

24) Seyed Ali Naziri Mehrabani, **Tannaz Sadeghi Rad**, Vahid Vatanpour, Alireza Khataee, Mustafa Kaya, Bihter Zeytuncu, Ismail Koyuncu (2023), CuCr NLDH-Graphene oxide blended polyvinyl chloride ultrafiltration membrane with improved permeability and antifouling behavior, **Separation and Purification Technology (IF = 9)**, 317, 123931. *https://doi.org/10.1016/j.seppur.2023.123931*

25) Samin Sadeghi Rad, Alireza Khataee, Samira Arefi-Oskoui, **Tannaz Sadeghi Rad**, Mahmoud Zarei, Yasin Orooji, Erhan Gengec, Mehmet Kobya (2023), Carbonaceous CoCr LDH nanocomposite as a light-responsive sonocatalyst for treatment of a plasticizer-containing water, **Ultrasonics Sonochemistry (IF = 9.7)**, 98, 106485. *https://doi.org/10.1016/j.ultsonch.2023.106485*

26) Sultan Akdağ Türkay, Alireza Khataee, Nevin Atalay Gengec, **Tannaz Sadeghi Rad**, (2024) Preparation of La-doped ZnFe LDH immobilized on polydimethylsiloxane sponge for the peroxymonosulfate-assisted photocatalytic degradation of rifampicin, **Process Safety and Environmental Protection (IF = 7.8)**, 185, 458-466. *https://doi.org/10.1016/j.psep.2024.03.015*

27) **Tannaz Sadeghi Rad**, Alireza Khataee, Emine Sevval Yazici, Erhan Gengec, Mehmet Kobya, Yeojoon Yoon (2025), Enhanced sonophotocatalytic degradation of phthalate acid ester using copper-chromium layered double hydroxides on carbon nanotubes and biochar, **Ultrasonics Sonochemistry (IF = 9.7)**, 117, 107351. *https://doi.org/10.1016/j.ultsonch.2025.107351*

28) Zehra Betul Ocal[1], **Tannaz Sadeghi Rad[1]**, Ahmet Karagunduz, Alireza Khataee (2025), Recent progress in Ni and Al-containing layered double hydroxides for dry reforming of methane, **Chemical Engineering Research and Design (IF = 3.9)**, 218, 619-633, *https://doi.org/10.1016/j.cherd.2025.05.016*

1. These authors have equally cooperated as the joint first authors.

29) Samira Arefi-Oskoui, Deniz Jalali, **Tannaz Sadeghi Rad**, Leonid G. Voskressensky, Alireza Khataee (2025), Synthesis and Characterization of Cobalt–Gallium Layered Double Hydroxide for Sonocatalytic Degradation of 2-Mercaptobenzoxazole from Water, **ACS EST Water (IF = 4.3)**, 5, 9, 5563–5574. *https://doi.org/10.1021/acsestwater.5c00585*

30) Sevil Vaghefi Moghaddam, Salva Golgoun, **Tannaz Sadeghi Rad**, Preparation and Structural Characterization of Liposomes: Bridging Material Design with Drug Delivery Performance, (Under preparation)

Job experiences

● Reviewer of the over 50 manuscripts in the ISI-indexed journals of Chemosphere, Ultrasonics Sonochemistry, Environmental Research,

Journal of Environmental Chemical Engineering, Journal of Nanoparticle Research, Turkish Journal of Chemistry, Food and Chemical Toxicology, Journal of Alloys and Compounds, Separation and Purification Technology, Materials Research Bulletin, Ceramics International, Microbial Pathogenesis, Scientific Reports, Journal of Molecular Structure, Journal of Inorganic and Organometallic Polymers and Material, International Journal of Biological Macromolecule, Research on Chemical Intermediates

- Teaching chemistry (Mortimer) as one of the B. Sc lessons at the University of Tabriz, Iran (2020 semester, 36 hours, 30 students)

- Teaching assistant of nanotechnology at the Gebze Technical University, Turkey (2021 and 2022 semesters, 16 hours, 30 students)

- Teaching assistant of nanocatalysts at the Gebze Technical University, Turkey (2021 and 2022 semesters, 16 hours, 25 students)

- Teaching assistant of water treatment and industrial chemistry laboratories at the University of Tabriz, Iran (2017 and 2018 semesters, 36 hours, 15 students)

- Co-supervising of two M. Sc. students at the Gebze Technical University, Turkey (2021-2023)

- Co-supervising of three B. Sc. students and two M. Sc. students at the University of Tabriz, Iran (2016-2023)

- Internship at a water and wastewater company in East Azerbaijan province, Iran (June-September 2011)

- Translator, English to Persian (2015-2018)

Academic references

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