

Curriculum Vitae

Name	Maryam Tahmasebpour
Current Position	Associate Professor
Current Address	Department of Chemical & Petroleum Engineering; University of Tabriz, Tabriz, Iran.
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Language Skills

- **English:** Fluent **Persian:** Native **Turkish:** Native

Education

2008-2012 | Ph.D. in Chemical Engineering
School of Chemical Engineering, University of Tehran (UT), Tehran, Iran.
Ph.D. Thesis Subject: “Study of the scaling in gas-solid fluidized beds by chaos theory “

2005-2008 | M.Sc. in Chemical Engineering
School of Chemical Engineering, Sahand University of Technology (SUT), Tabriz, Iran.
M.Sc. Thesis Subject: “Study of the key parameters effects on metal oxide ceramic nanopowders properties produced by the polyacrylamide gel method “

Research Experience

Aug 2020 – present | Associate Professor at University of Tabriz, Iran
June 2014 – Aug 2020 | Assistant Professor at University of Tabriz, Iran
Feb 2012 – Aug 2012 | Guest Researcher, TUDelft, Chemical Engineering Department, Product and Process Engineering Group (PPE)

Teaching Experiences

- Fluidization Engineering (PhD)
- Nano-adsorbents (PhD)
- Fluidized Bed Reactors (MSc)
- Advanced Engineering Mathematics (MSc)
- Research methods (MSc)
- Fluid Mechanics (BSc)
- Mass and Energy Balance (BSc)
- Heat Transfer (BSc)
- Mass Transfer (BSc)
- Engineering Mathematics (BSc)
- Differential Equations (BSc)
- Application of Mathematics in Chemical Engineering (BSc)

Research Interests

- CO₂ Capture and CO₂ adsorbents
- Gas-Solid Fluidization Technology
- Nano Fluidization

- Synthesis of Nano-adsorbents
- Modeling and Simulation
- Water Treatment

Honors and Awards

- Acknowledged as the best Female Researcher of the Year in the university of Tabriz, 2022
- Acknowledged as the best Teacher of the Year in the university of Tabriz, 2020
- Head of the Department of Chemical & Petroleum Engineering at University of Tabriz, (Sep 2019-Sep 2021)
- Acknowledged as a Member of Exceptional Talent Students, Iran (2009)
- Ranked 2nd during PhD studies, UT, Tabriz, Iran (2012)
- Ranked 2nd during MSc studies, SUT, Tabriz, Iran (2008)

Research Projects, Grants, and Contracts with industry

I have been the PI in 2 national projects and 1 international project:

- Towards the design of efficient CO₂ adsorbents by coupling the adsorption and fluidization performance, I-COOP 2021 program supported by “Instituto de Ciencia y Tecnología del Carbono, INCAR-CSIC. Oviedo, Spain”, Ref. COOPA20492, Grant: 23.900 euros, Duration: January 2022 – December 2023.
- Investigation and comparison of the performance of natural and synthesized sorbents in the calcium looping process with emphasis on sorbent CO₂ capture capacity, stability and fluidization behavior, supported by Iran National Science Foundation (INSF), Ref. 99866910, Duration: May 2020 – Aug 2022.
- Evaluation the performance of calcium carbonate adsorbent prepared from eggshell waste in carbon dioxide removal in the calcium looping process, TabrizU-300 program supported by Vice Chancellorship for Research and Technology, University of Tabriz, Ref., Duration: Feb 2021 – Aug 2022.

Publications

Patent

M. Tahmasebpour, A.A. Babaluo, “Preparation of metal oxide nanopowders via polyacrylamide gel method and the effective parameters investigation”, Iran Patent No. 40197, 2007.

Book

M. Tahmasebpour, H. Nami, “Application of Mathematics in Chemical Engineering (in Persian Language)”, Modarresane Sharif Publisher, ISBN: 9789641871026, 2011.

Scientific Journal Papers (JCR)

- 1) M. Imani, **M. Tahmasebpour**, P. E. Sánchez-Jiménez, J.M. Valverde, V. Moreno, "A novel, green, cost-effective and fluidizable SiO₂-decorated calcium-based adsorbent recovered from eggshell waste for the CO₂ capture process", separation and purification technology, (2022) accepted.
- 2) M. Iranvandi, **M. Tahmasebpour**, B. Azimi, M. Heidari, C. Pevida, "The novel SiO₂-decorated highly robust waste-derived activated carbon with homogeneous fluidity for the CO₂ capture process", separation and purification technology, (2022) accepted.

- 3) M. Imani, **M. Tahmasebpour**, P. E. Sánchez-Jiménez, J.M. Valverde, V. Moreno, "Improvement in cyclic CO₂ capture performance and fluidization behavior of eggshell-derived CaCO₃ particles modified with acetic acid used in calcium looping process", *Journal of CO₂ Utilization*, 65 (2022) 102207.
- 4) M. Javidi Nobar zad **M. Tahmasebpour**, M. Heidari C. Pevida, "Theoretical and experimental study on the fluidity performance of hard-to-fluidize carbon nanotubes-based CO₂ capture sorbents", *Frontiers of Chemical Science and Engineering*, 16 (2022) 1460–1475.
- 5) M. Noori, **M Tahmasebpour**, R. Foroutan, "Enhanced adsorption capacity of low-cost magnetic clinoptilolite powders/beads for the effective removal of methylene blue: Adsorption and desorption studies", *Materials Chemistry and Physics*, 278 (2022) 125655.
- 6) **M. Tahmasebpour**, Sh. Hosseini Nami, M. Khatamian, L. Sanaei, "Arsenate Removal from Contaminated Water using Fe₂O₃-Clinoptilolite Powder and Granule", *Environmental Technology*, 43 (1) (2022).
- 7) M. Heidari, **M Tahmasebpour**, SB Mousavi, C Pevida, "CO₂ capture activity of a novel CaO adsorbent stabilized with (ZrO₂+Al₂O₃+CeO₂)-based additive under mild and realistic calcium looping conditions", *Journal of CO₂ Utilization*, 53 (2021) 101747.
- 8) F. Sattari, **M. Tahmasebpour**, J. M. Valverde, C. Ortiz, M. Mohammadpourfard, "Modelling of a fluidized bed carbonator reactor for post-combustion CO₂ capture considering bed hydrodynamics and sorbent characteristics", *Chemical Engineering Journal*, 406 (2021) 126762.
- 9) M.J. Nobar zad, **M. Tahmasebpour**, M. Imani, C. Pevida, S.Z. Heris, "Improved CO₂ adsorption capacity and fluidization behavior of silica-coated amine-functionalized multi-walled carbon nanotubes", *Journal of Environmental Chemical Engineering*, 9 (4) (2021) 105786.
- 10) L. Sanaei, **M. Tahmasebpour**, "Physical appearance and arsenate removal efficiency of Fe(III)-modified clinoptilolite beads affected by alginate-wet-granulation process parameters", *Materials Chemistry and Physics*, 259 (2021) 124009.
- 11) L. Sanaei, **M. Tahmasebpour**, M. Khatamian, B. Divband, "Arsenic Removal from Aqueous Solutions using Fe₃O₄-NaA Zeolite: Experimental and Modeling Investigations", *The AUT Journal of Mechanical Engineering*, 5 (1) (2021).
- 12) M. Heidari, **M. Tahmasebpour**, A. Antzaras, A. A. Lemonidou, "CO₂ capture and fluidity performance of CaO-based sorbents: Effect of Zr, Al and Ce additives in tri-, bi- and mono-metallic configurations", *Process Safety and Environmental Protection*, 144 (2020) 349–365.
- 13) **M. Tahmasebpour**, Y. Rahimvandi Noupour, P. Badamchizadeh, "Fluidity Enhancement of Hard-to-fluidize Nanoparticles by Mixing with Hydrophilic Nano-Silica and Fluid Catalytic Cracking Particles: Experimental and Theoretical Study", *Physics of Fluids* 31 (7) (2019) 073301-073309.
- 14) Y. Rahimvandi Noupour, **M. Tahmasebpour**, "A Novel Internal Assistance Method to Improve the Flowability of Hard-to-fluidize Nanoparticles" *Korean Journal of chemical engineering* 36 (2019) 1377.

- 15) O.Amjadi, **M.Tahmasebpour**, H.Aghdasinia, "Fluidization Behaviour of Cohesive Ca(OH)₂ Powders Mixed with Hydrophobic Silica Nanoparticles: Coverage Quality Effect", *Chemical Engineering & Technology*, 42(2) (2019) 287–296.
- 16) B.Azimi, **M. Tahmasebpour**, P. E.Sanchez-Jimenez, A. Perejon, J. M. Valverde, Multicycle CO₂ capture activity and fluidizability of Al-based synthesized CaO sorbents, *Chemical Engineering Journal*, 358 (2019) 679-690.
- 17) O.Amjadi, **M.Tahmasebpour**, "Improving fluidization behavior of cohesive Ca(OH)₂ adsorbent using hydrophilic silica nanoparticles: Parametric investigation", *Particuology*, 40 (2018) 52-61.
- 18) **M. Tahmasebpour**, R. Zarghami, R. Sotudeh-Gharebagh, J. R. van Ommen, N. Mostoufi, "Dynamic analysis of the scale-up of fluidized beds", *Advanced Powder Technology*, 28 (2017), 2621-2629.
- 19) R. Tahmasebpour, A.A. Babaluo, J.R. Shahrouzi, **M. Tahmasebpour**, "Theoretical and experimental studies on the anodic oxidation process for synthesis of self-ordering TiO₂ nanotubes: Effect of TiO₂ nanotube lengths on photocatalytic activity", *Journal of Environmental Chemical Engineering* 5 (2017), 1227-1237.
- 20) **M. Tahmasebpour**, R. Ghasemi Seif Abadi, Y. Rahimvandi Noupour, P. Badamchizadeh, "A Model Based on Electrostatic Repulsion and Hydrogen Bond Forces to Estimate the Size of Nanoparticle Agglomerates in Fluidization", *Industrial & Engineering Chemistry Research (I&EC)*, 55 (2016), 12939-12948.
- 21) M. R. Tamadondar, R. Zarghami, K. Boutou, **M. Tahmasebpour**, N. Mostoufi, "Size of Nanoparticle Agglomerates in Fluidization ", *The Canadian Journal of Chemical Engineering*, 94 (2016), 476-484.
- 22) H.R. Norouzi, **M. Tahmasebpour**, R. Zarghami, N. Mostoufi, "Multi-scale analysis of flow structures in fluidized beds with immersed tubes", *Particuology*, 21 (2015) 99-106.
- 23) **M. Tahmasebpour**, R. Zarghami¹, R. Sotudeh-Gharebagh, N. Mostoufi, "Characterization of Fluidized Beds Hydrodynamic by Recurrence Quantification Analysis and Wavelet Transform " *International Journal of Multiphase Flow*, 69 (2015) 31-41.
- 24) M. R. Tamadondar, R. Zarghami¹, **M. Tahmasebpour**, N. Mostoufi, "Characterization of the bubbling fluidization of nanoparticles", *Particuology*, 16 (2014) 75-83.
- 25) **M. Tahmasebpour**, L. de Martin, M. Talebi, N. Mostoufi and J.R. van Ommen, "The role of hydrogen bond in dense nanoparticle-gas suspensions", *Physical Chemistry Chemical Physics (PCCP)*, 15 (2013) 5788-5793.
- 26) **M. Tahmasebpour**, R. Zarghami, R. Sotudeh-Gharebagh, N. Mostoufi, "Characterization of Various Structures in Gas-Solid Fluidized Beds by Recurrence Quantification Analysis", *Particuology*, 11(6) (2013) 647–656.
- 27) **M. Tahmasebpour**, R. Zarghami, R. Sotudeh-Gharebagh, N. Mostoufi' "Study of transition velocity from bubbling to turbulent fluidization by recurrence plots analysis

on pressure fluctuations”, Canadian Journal of Chemical Engineering, 91 (2013) 368-375.

28) **M. Tahmasebpour**, A. A. Babaluo, E. Pipelzadeh, “Studies on the synthesis of α - Al_2O_3 nanopowders by the polyacrylamide gel method”, Powder Technology, 191 (2009) 91-97.

29) **M. Tahmasebpour**, A.A. Babaluo, M.K. Razavi, “Synthesis of zirconia nanopowders from various zirconium salts via polyacrylamide gel method”, Journal of European Ceramic society, 28 (2008) 773-778.

Scientific Journal Papers (ISC)

- ۱- میرجمال الدین اطهاری، مریم طهماسب پور، نشریه علوم و فناوری رنگ، ۱۴۰۱.
- ۲- فاطمه مختارزاده، مریم طهماسب پور، نشریه علوم و مهندسی جداسازی، ۱۴ (۱)، صفحه ۲۴، ۱۴۰۱.
- ۳- مریم نوری، مریم طهماسب پور، لیلا خازینی، مجله علوم و تکنولوژی پلیمر، ۳۴ (۳)، ۱۴۰۰، صفحه ۲۶۷.
- ۴- پروانه خلعتی، مریم طهماسب پور، سید جمال الدین پیغمبردوست، نشریه مهندسی مکانیک امیرکبیر، ۱۴۰۰، پذیرفته شده
- ۵- فردین ستاری، مریم طهماسب پور، موسی محمدپورفرد، نشریه مهندسی مکانیک امیرکبیر، ۵۳ (۵)، ۱۴۰۰، صفحه ۲۸۰۷.
- ۶- پرستو بادامچی زاده، مریم طهماسب پور، مجله مدل سازی در مهندسی، دوره ۱۶، شماره ۵۲، بهار ۱۳۹۷، صفحه ۳۱.
- ۷- امید امجدی، مریم طهماسب پور، حسن اقدسی نیا، نشریه علوم و مهندسی جداسازی، دوره نهم، شماره دوم، سال ۱۳۹۶، صفحه ۱-۱۰.

Conference Papers

1. M. Javidi Nobar zad, **M. Tahmasebpour**, M. heidari, “Improvement of fluidization behavior of multi-walled carbon nanotubes by physically mixing with hydrophobic silica nanoparticles”, 8th international Congress on Nano Science & Technology: Basic and Applications (ICNBA 2018), July 28-29, 2018, Moscow, Russia.
2. M. Heidari, **M. Tahmasebpour**, M. Javidi Nobar zad, “A novel (Al-Zr-Ce) incorporated CaO nanoparticles as a durable sorbent for CO₂ capture: Fluidizability study”, 8th international Congress on Nano Science & Technology: Basic and Applications (ICNBA 2018), July 28-29, 2018, Moscow, Russia.
3. B. Azimi, **M. Tahmasebpour**, H. Masaale dan, M. Piroozmand, A. Niaei, “Improvement of stability and fluidization behaviour of CaO-based sorbents used in CO₂ capture process”, The 10th International Chemical Engineering Congress & Exhibition (ICChEC 2018), 6-10 May 2018, Isfahan, Iran.
4. Sh. Hosseini Nami, **M. Tahmasebpour**, M. Khatamian, B. Divband, “Arsenic removal from water using iron oxide-clinoptilolite nanocomposite powder and granules”, The 10th International Chemical Engineering Congress & Exhibition (ICChEC 2018), 6-10 May 2018, Isfahan, Iran.

5. Y. Rahimvandi Noupour, **M. Tahmasebpour**, M. Asadpoor Sangin, "Fluidization Behavior of Binary Titania-Silica Nanoparticle Mixtures in the Presence of Alcohols", 3rd International Conference on Recent Innovations in Chemistry and Chemical Engineering, 08 September 2016, Tarbiat Modares University, Tehran, Iran. *Oral presentation*
6. **M. Tahmasebpour**, O. Amjadi, R. Ebadi, H. Aghdasinia, "Fluidization Behavior of $\text{Ca}(\text{OH})_2$ by Adding SiO_2 Nanoparticles in the Presence of Alcohols", Second International Conference in New Research on chemistry & chemical engineering, 05 May 2016, AmirKabir University of Technology, Tehran, Iran. *Oral presentation*
7. R. Ghasemi Seif Abadi, **M. Tahmasebpour**, A. Farzi, "Modeling the size of nanoparticle agglomerates in fluidization", The 9th International Chemical Engineering Congress & Exhibition (IChEC), 26-28 December 2015, Shiraz, Iran. *Poster presentation*
8. **M. Tahmasebpour**, Lilian de Martin, M. Talebi, N. Mostoufi and J. R. van Ommen, "Fluidization of Nanoparticles: the effect of surface characteristics", ECI conference, Fluidization XIV from fundamentals to products, 2013, Netherlands. *Oral presentation*
9. **M. Tahmasebpour**, R. Zarghami, R. Sotudeh-Gharebagh and N. Mostoufi, "Recurrence Quantification Analysis: A Simple Method to Characterization of Various structures in Gas-Solid Fluidized Beds", ECI conference, Fluidization XIV from fundamentals to products, 2013, Netherlands. *Oral presentation*
10. **M. Tahmasebpour**, R. Sotudeh-Gharebagh, R. Zarghami and N. Mostoufi, "Recurrence plots analysis of pressure fluctuations in fluidized beds", IV International conference on computational methods for coupled problems in science and engineering – coupled problems 2011, 20-22 June 2011, Kos Island, Greece. *Oral presentation*
11. **M. Tahmasebpour**, R. Sotudeh-Gharebagh, R. Zarghami and N. Mostoufi, "Characterization of gas-solid fluidized bed hydrodynamics by recurrence plot analysis", 4th International symposium on recurrence plots, 5-7 December 2011, The Hong Kong Polytechnic University, China. *Oral presentation*
12. **M. Tahmasebpour**, A.A Babaluo, P. Ahmadian Namini, B. Bayati, "Synthesis of metal oxide nanopowders via polyacrylamide gel method: influence of precursors", The 5th International Chemical Engineering Congress, ICHEC 2008, Kish Island, Iran. *Oral presentation*
13. B. Bayati, A. A. Babaluo, R. Karimi, **M. Tahmasebpour**, "Synthesis and performance of tubular NaA zeolite-composite membrane", The 5th International Chemical Engineering Congress, ICHEC 2008, Kish Island, Iran. *Poster presentation*
14. **M. Tahmasebpour**, A. A. Babaluo, N. Asgary, "parametric studies on structural properties of polyacrylamide gel-prepared ceramic nanopowders", ICHEC 12, 2008, Sahand University of Technology, Tabriz, Iran. *Oral presentation*

15. **M. Tahmasebpour**, A.A. Babaluo, "Synthesis of alumina and zirconia nanopowders by polyacrylamide gel method used in nanocomposite membrane top layers", The First International Congress of Nanotechnology and its Application in Petroleum, Gas and Petrochemical Industries, PUT& RIPI, March 2007. *Oral presentation*

16. P. AhmadianNamini, A. A. Babaluo, **M. Tahmasebpour**, "Synthesis of PEG Supported palladium nanoparticles: simple and recyclable palladium catalytic system for Heck reaction", The First International Congress of Nanotechnology and its Application in Petroleum, Gas and Petrochemical Industries, PUT& RIPI, March 2007. *Oral presentation*

17. **M. Tahmasebpour**, A.A. Babaluo, "Atmosphere and monomer to salt ratio effects on the degradation of polyacrylamide gel used for nanopowders preparation", 8th International Seminar on Polymer Science and Technology (ISPST), 25-27 October, 2007, Sharif University, Tehran, Iran. *Oral presentation*

18. **M. Tahmasebpour**, A.A. Babaluo, "Influence of precursor type on the structural properties of polyacrylamide gel-prepared ceramic nanopowders", 7th Pacific RIM Conference on Ceramic and Glass Technology, 11-14 November, 2007, Shanghai, China. *Oral presentation*

19. **M. Tahmasebpour**, A.A. Babaluo, "Ceramic nanopowders preparation via polyacrylamide gel method", 6th National chemical Engineering student congress, 30 August-1 September 2006, Isfahan University, Iran. *Oral presentation*

20. S. Ebrahimi, **M. Tahmasebpour**, "Gas assisted injection moulding (GAIM)", 6th National chemical Engineering student congress, 30 August-1 September 2006, Isfahan University, Iran. *Oral presentation*

21. **M. Tahmasebpour**, A.A. Babaluo, M. rezaee, M.K. Razavi, "Thermal analysis of acrylamide polymeric network used for nanopowders preparation", 11th Iranian Chemical Engineering Congress, 28-30 November, 2006, TMU University, Iran. *Oral presentation*