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**EDUCATION**

- Ph.D. in Applied Chemistry, Department of Sciences, Faculty of Chemistry University of Tehran, Tehran, Iran, 2011-2015.
- M.Sc. in Applied Chemistry, Faculty of Chemistry, Department of Applied Chemistry, University of Tabriz, Tabriz, Iran, 2008-2011.
- B.Sc. in Applied Chemistry, Faculty of Chemistry, Department of Applied Chemistry, University of Tabriz, Tabriz, Iran, 2005-2008.

**WORK EXPERIENCES**

- Assistant professor of applied chemistry, University of Kashan, 2016-now

**RESEARCH EXPERIENCES**

- **The kinetic study of conversion of microalgae oil to biodiesel in supercritical media**, Ph.D. student thesis, Faculty of Chemistry, University of Kashan, Kashan, Iran, 2022-now
- **Direct bio-jet fuel production from dry microalgae in supercritical medium**, Ph.D. student thesis, Faculty of Chemistry, University of Kashan, Kashan, Iran, 2022-now.
- **Nano-photocatalytic production of biodiesel from microalgae in supercritical medium**, Ph.D. student thesis, Faculty of Chemistry, University of Kashan, Kashan, Iran, 2021.
- **Polymer nanocomposite as carrier in drug delivery systems**, Ph.D. student thesis, Faculty of Chemistry, University of Kashan, Kashan, Iran, 2020.
- **Simultaneous production of bio-diesel and hydrogen gas via super-critical conversion of microalgae**, Iranian National Science Foundation (INSF), 2019.

- **Feasibility study of biodiesel production from oily microalgae biomasses**, Renewable Energies Department, Niro Research Institute, Tehran, Iran, 2019.
- **Synthesis and performance investigation of magnetic polymer nanocomposites**, MSc student thesis, Faculty of Chemistry, University of Kashan, Kashan, Iran, 2019.
- **Polymer nanocomposite as a scaffold for cell culture**, MSc student thesis, Faculty of Veterinary, University of Shahrekord, Shahrekord, Iran, 2017.

### **AWARDS**

- Rank 1 in annual teaching ranking, University of Kashan, Faculty of Chemistry, 2022.
- Rank 1 in annual teaching ranking, University of Kashan, Faculty of Chemistry, 2018.
- The annual provincial first award of the university startups, 2017.
- The second rank award of Sabzkooh national technology festival, 2016.

### **RESEARCH INTERESTS**

- The supercritical processes for bio jet fuel and biodiesel production.
- Microalgae cultivation and conversion to bio-fuels.
- Bio-hydrogen production from microalgae during cultivation.
- Polymer nanocomposites for bio applications

### **PUBLICATIONS**

#### **Journal Papers**

- Davoodimehr, A., et al., [The process optimization of FAMEs production from bio-oil transesterification via nano-biocatalyst based on lipase/SBA-15 nanostructure](#). Journal of Nanostructures, 2025.
- Aghilinategh, M., M. Barati, and M. Hamadani, [Supercritical microalgae conversion to biofuel and value-added components \(oxygenates, hydrocarbons, and aromatics\): A catalyst characterization study](#). Environmental Progress & Sustainable Energy, 2024. 43(3).
- Hemmatzadeh-Dstgerdi, M., et al., [Maternal plasma Interleukin-6 and early conception failure in dairy cows](#). Iranian Veterinary Journal, 2023. 19(3): p. 45-50.

- Davoodimehr, A., A. Shakeri, and M. Barati, [Biodiesel Production from Castor Oil in the Presence of Lipase/calcium alginate Biocatalyst; Optimizing and Evaluation of Temperature, Catalyst Amount, and Methanol to Oil Ratio Effects](#). *Journal of Applied Research in Chemistry*, 17(2) (2023) 19-27.
- A.A. Alavijeh, M. Dadpay, M. Barati, [The Effect of Silk-nanocefexime Suture on Healing and Antibacterial Properties](#), *Journal of Kerman University of Medical Sciences (JKMU)* 26(3) (2022) 246-253.
- S. Sharifi, M. Rajabi, M. Barati, I. Karimi, A. Bigham, [Comparative study of nanostructured effect of alumina-graphite with Autogenous rib cartilage in the repair of bone defects in dogs](#), *Iranian Veterinary Journal*, 18 (2) (2021) 29-37.
- Z. Mirzaie, A. Reisi-Vanani, M. Barati, S.M. Atyabi, [The Drug Release Kinetics and Anticancer Activity of the GO/PVA-Curcumin Nanostructures: The Effects of the Preparation Method and the GO Amount](#), *Journal of Pharmaceutical Sciences*, 110 (11) (2021) 3715-3725..
- T. Nematian, M. Fatehi, M. Hosseinpour, M. Barati, [One-pot conversion of sesame cake to low N-content biodiesel via nano-catalytic supercritical methanol](#), *Renewable Energy*, 170 (2021) 964-973.
- A.A. Alavije, F. Barati, M. Barati, H. Nazari, I. Karimi, [Polyethersulfone/MWCNT nanocomposite scaffold for endometrial cell culture: preparation, characterization, and in vitro investigation](#), *Biomedical Physics & Engineering Express*, 7 (2021) 025004.
- Z. Mirzaie, M. Barati, M. Asadi Tokmedash, [Anticancer Drug Delivery Systems Based on Curcumin Nanostructures: A Review](#), *Pharm. Chem. J.* 54(4) (2020) 353-360.
- M.T. Badri, M. Barati, S.H. Rasa, [Kinetic study of acetone acidic oxidation with KMnO4 in the absence and presence of CuO/ \$\gamma\$ -Al<sub>2</sub>O<sub>3</sub> as a heterogeneous nano-catalyst](#), *Sci. Iranica* 27(3) (2020) 1234-1242.
- alirezaie alavijeh, M. Rajabi, F. Barati, M. Javdani, I. Karimi, M. Barati, M. Moradian, [Catgut enriched with CuSO<sub>4</sub> nanoparticles as a surgical suture: Morphology, Antibacterial activity, Cytotoxicity and Tissue reaction](#), *Nanomedicine Research Journal* 5(3) (2020) 256-264.
- M. Aghilinategh, M. Barati, M. Hamadian, [The modified supercritical media for one-pot biodiesel production from \*Chlorella vulgaris\* using photochemically-synthesized SrTiO<sub>3</sub> nanocatalyst](#), *Renewable Energy* 160 (2020) 176-184.
- A.R.-V. Zahra Mirzai, Mohammad Barati, [Polyvinyl alcohol-sodium alginate blend, composited with 3D-graphene oxide as a controlled release system for curcumin](#), *J. Drug Deliv. Sci. Technol.* 50 (2019) 380-387.
- T. Nematian, M. Barati, [Nanobiocatalytic processes for producing biodiesel from algae](#), *Sustainable Bioenergy*, Elsevier2019, pp. 299-326.
- M. Barati, Maryam Aghilinategh, Masood Hamadian, [Supercritical methanol for one put biodiesel production from \*chlorella vulgaris\* microalgae in the presence of CaO/TiO<sub>2</sub> nano-photocatalyst and subcritical water](#), *Biomass Bioenergy* 123 (2019) 34-40.
- A.A. Alavijeh, M. Dadpey, F. Barati, M. Barati, [Diagnosis and treatment of the Cancer Tumor Cells \(CTCs\); Capturing and Diagnosing Kits](#), *Nanomedicine Research Journal* 4(2) (2019) 56-62.
- A.A. Alavijeh, M. Barati, M. Barati, H.A. Dehkordi, [The Potential of Magnetic Nanoparticles for Diagnosis and Treatmentof Cancer Based on Body Magnetic](#)

- [Field and Organ-on-the-Chip](#), Advanced Pharmaceutical Bulletin 9(3) (2019) 360-373.
- M. Barati, G. Kahid Baseri, [Hydrogen, alcohols, and ethers production from biomass in supercritical methanol–subcritical water medium with Cu–K nanocatalysts](#), Environ. Prog. Sustain. Energy 37(2) (2018) 861-869.
  - A.A. Alavijeh, M. Dadpey, M. Barati, A. Molamirzaie, [Silk suture reinforced with Cefixime nanoparticles using polymer hydrogel \(CFX@PVA\); Preparation, Bacterial resistance and Mechanical properties](#), Nanomedicine Research Journal 3(3) (2018) 133.
  - M. Barati, [From biomass to fuels: nano-catalytic processes](#), Nanotechnology for Bioenergy and Biofuel Production, Springer, Cham2017, pp. 195-206.
  - Tavasoli, M. Barati, A. Karimi, [Sugarcane bagasse supercritical water gasification in presence of potassium promoted copper nano-catalysts supported on  \$\gamma\$ -Al<sub>2</sub>O<sub>3</sub>](#), Int. J. Hydrogen Energy 41(1) (2016) 174-180.
  - Tavasoli, M. Barati, A. Karimi, [Conversion of sugarcane bagasse to gaseous and liquid fuels in near-critical water media using K<sub>2</sub>O promoted Cu/ \$\gamma\$ -Al<sub>2</sub>O<sub>3</sub>–MgO nanocatalysts](#), Biomass Bioenergy 80 (2015) 63-72.
  - R. Mehrani, M. Barati, A. Tavasoli, A. Karimi, [Hydrogen production via supercritical water gasification of bagasse using Ni–Cu/ \$\gamma\$ -Al<sub>2</sub>O<sub>3</sub> nano-catalysts](#), Environ. Technol. 36(10) (2015) 1265-1272.
  - R. Mehrani, A. Tavasoli, M. Barati, A. Karimi, M. Ghalbi Ahangari, [Production of Hydrogen and Synthesis gas via Cu-Ni/Al<sub>2</sub>O<sub>3</sub> catalyzed gasification of bagasse in supercritical water media](#), Journal of Nanoanalysis 1(3) (2014) 99-109.

### Conference Papers

- Z. Mirzaei, **M. Barati**, A.R. Vanani, Synthesis of Poly (vinyl alcohol)-Sodium Alginate /Graphene Oxide films for controlled release of the anticancer drug curcumin, 11th International chemical engineering congress & exhibition, 2020.
- M. Aghili Nategh, **M. Barati**, M. Hamadani, Synthesis of SrO / TiO<sub>2</sub> nano-catalysts and its effect on one put biodiesel production from Chlorella vulgaris microalgae in supercritical methanol, 2nd Iranian catalyst conference (ICC 2020), 2020.
- M. Aghilinategh, **M. Barati**, M. Hamadani, Direct Conversion of Chlorella Vulgaris Microalgae to Biodiesel Under Supercritical Methanol Condition in The Presence of Heterogeneous Nano- photocatalyst, 22th Iranian Physical Chemistry Confrance, 2019.
- M. Fatehi, **M. Barati**, Catalytic Supercritical Process for Biodiesel Production from Sesame Oil, International Congress of Sciences and Innovative Technologies, 2018, p. 95.

### Books

- [From Biomass to Fuels; Nano-catalytic Processes](#)  
Authors: Mohammad Barati  
Publication date: 2017

Book: Nanotechnology for Bioenergy and Biofuel Production  
Pages: 195-206  
Publisher: Springer International Publishing

- [Nanobiocatalytic processes for producing biodiesel from algae](#)  
Authors: Tahereh Nematian, Mohammad Barati  
Publication date: 2019  
Book: Sustainable Bioenergy  
Pages: 299-326  
Publisher: Elsevier