

Fatemeh Rafieian

Personal details

Nationality	Iranian
Gender	F
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Professional experience

- Faculty member

Nutrition and Food Security Research Center, Isfahan University of Medical Sciences, Isfahan, Iran (2021-present).

- Postdoctoral Researcher

the Netherlands (2018).

- Lecturer

Department of Food Science and Technology, Azad University, Iran (2014-2016 and 2006-2010).

Education

- Ph.D. in Food Science and Technology

Isfahan University of Technology, Isfahan, Iran (2010-2014). 9-month sabbatical leave in the United States of America.

- M.Sc. in Food Science and Technology

Isfahan University of Technology, Isfahan, Iran (2004-2006).

- B.Sc. in Food Science and Technology

Isfahan University of Technology, Isfahan, Iran (2000-2004).

Selected Publications

- Sadeghzadeh, R., **Rafieian, F.**, Keshani, M., Salehi, Z., Jafari, S.M. Novel strategies to control the biofilm formation by *Pseudomonas aeruginosa* in the food industry. *Future Foods*. 2024; 100481.

- **Rafieian, F.**, Dufresne, A., Askari, G., Rezaei, A., Jafari, S.M. Aerogels as novel ingredients: production, properties and applications in medical, food and environmental sectors. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 2024; 133410.

- Azadi, A., **Rafieian, F.**, Sami, M., Rezaei, A. Investigating the effects of chitosan/tragacanth gum/polyvinyl alcohol composite coating incorporated with cinnamon essential oil nanoemulsion on safety and quality features of chicken breast fillets during storage in the refrigerator. *International Journal of Biological Macromolecules*. 2023; 253: 126481.

- Azadi, A., **Rafieian, F.**, Sami, M., Rezaei, A. Fabrication, characterization and antimicrobial activity of chitosan/tragacanth gum/polyvinyl alcohol composite films incorporated with cinnamon essential oil nanoemulsion. *International Journal of Biological Macromolecules*. 2023; 245: 125225.

- **Rafieian, F.**, Amani, R., Rezaei, A., Karaça, A.C., Jafari, S.M. Exploring fennel (*Foeniculum vulgare*): Composition, functional properties, potential health benefits, and safety. *Critical Reviews in Food Science and Nutrition*. 2024; 64(20):6924-6941.

- Rezaei, A., **Rafieian, F.**, Akbari-Alavijeh, S., Kharazmi, M.S., Jafari, S.M. Release of bioactive compounds from delivery systems by stimuli-responsive approaches; triggering factors, mechanisms, and applications. *Advances in Colloid and Interface Science*. 2022; 102728

- **Rafieian, F.**, Mousavi, M., Dufresne, A., Yu, Q. Polyethersulfone membrane embedded with amine functionalized microcrystalline cellulose for heavy metal removal from wastewater. *International Journal of Biological Macromolecules*. 2020; 164: 4444-4454.

- **Rafieian, F.**, Mousavi, M., Yu, Q., Jonoobi, M. Amine functionalization of microcrystalline cellulose assisted by (3-chloropropyl)triethoxysilane. *International Journal of Biological Macromolecules*. 2019; 130: 280-287.

- **Rafieian, F.**, Jonoobi, M., Yu, Q. A novel nanocomposite membrane containing modified cellulose nanocrystals for copper ions removal and dye adsorption from water. *Cellulose*. 2019; 26: 3359-3373.

- Ashori, A., **Rafieyan, F.**, Kian, F., Jonoobi, M., Rezaei Tavabe, K. Effect of cellulose nanocrystals on performance of polyethersulfone nanocomposite membranes using electrospinning technique. *Polymer Composites*. 2018; 40(S1): E835-E841.

- Salehpour, S., **Rafieian, F.**, Jonoobi, M., Oksman, K. Effects of molding temperature, pressure and time on polyvinyl alcohol nanocomposites properties produced by freeze drying technique. *Industrial Crops and Products*. 2018; 121(1): 1-9.

- **Rafieian, F.**, Hosseini, M., Jonoobi, M., Yu, Q. Development of hydrophobic nanocellulose-based aerogel via chemical vapor deposition for oil separation. *Cellulose*. 2018; 25(8): 4695-4710.

- Salehpour, S., Jonoobi, M., Ahmadzadeh, M., Siracusa, V., **Rafieian, F.** Biodegradation and ecotoxicological impact of cellulose nanocomposites in municipal solid waste composting. *International Journal of Biological Macromolecules*. 2018; 111: 264-270.
- Salehpour, S., Jonoobi, M., Ahmadzadeh, M., **Rafieian, F.** Biodegradation and ecotoxicological impact of cellulose nanocomposites under Controlled Composting Conditions. *Iranian Journal of Wood and Paper Science Research*. 2018; 33(1): 122-132
- Makzoom, S., Jonoobi, M., **Rafieyan, F.**, Pourzamani, H. Evaluation of di (2-ethylhexyl) phthalate removal efficiency from aqueous solution by cellulose nanofiber. *Desalination and Water Treatment*. 2017; 77: 229-236.
- **Rafieian, F.** The effect of carboxylatednanocrystalline cellulose on the thermomechanical and barrier properties of cysteine cross linked gliadin nanocomposite. *Cellulose*. 2015; 22(2): 1175-1188.
- **Rafieian, F.**, Keramat, J., Shahedi, M. Physicochemical properties of gelatin extracted from chicken deboner residue. *LWT-Journal of Food Science and Technology*. 2015; 64(2): 1370-1375.
- Jonoobi, M., Rahamin, H., **Rafieyan, F.** Cellulose nanocrystal properties and their applications. *Iranian journal of wood and paper industries*. 2015; 6(1): 167-192
- **Rafieian, F.** Fabrication and characterization of carboxylated cellulose nanocrystals reinforced glutenin nanocomposite. *Cellulose*. 2014; 21(6): 4167-4180.
- **Rafieian, F.**, Shahedi, M., Keramat, J., Simonsen, J. Mechanical, thermal and barrier properties of nano-biocomposite based on gluten and carboxylated cellulose nanocrystals. *Industrial Crops and Products*. 2014; 53: 282-288.
- **Rafieian, F.**, Shahedi, M., Keramat, J., Simonsen, J. Thermomechanical and morphological properties of nanocomposite films from wheat gluten matrix and cellulose nanofibrils. *Journal of Food Science*. 2014; 79(1): 100-107.
- **Rafieian, F.**, Keramat, J., Kadivar, M. Optimization and modeling of gelatin extraction from chicken deboner residue using response surface methodology (RSM). *Journal of Food Science and Technology*. 2013; 50(2): 374-380.

Conference

- In vivo toxicity of cellulose nanofibrills on mice. (2014). 7th International conference on nanomaterials - research and application, Prague, Czech Republic.

- Optimization and modeling of gluten based bionanocomposite preparation. (2013). Nanotech conference, Venice, Italy.

Projects

- Effect of ginger consumption on cardiovascular risk factors in adults: a systematic review and meta-analysis. (2024-2026). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Formation, control and inhibition of *Pseudomonas aeruginosa* biofilm in the food industry. (2024-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Increasing the bioavailability of curcumin through encapsulation in chitosan and acacia gum carriers. (2024-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Microencapsulation of lavender essential oil in Pickering emulsion of cellulose nanofibers extracted from rice husk waste and combination of the resulting microcapsules with *Salvia macrosiphon Boiss* gum to increase the storage life of strawberries. (2023-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Increasing the bioavailability of coenzyme Q₁₀ by encapsulation in *Asa foetida* gum and almond gum carriers. (2023-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Production and characterization of self-assembled microparticles of lactoferrin, catechin and *Salvia macrosiphon Boiss* gum to increase the stability of anthocyanins in red grape juice. (2023-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Production, characterization and toxicity assessment of self-aggregated composite particles of lactoferrin, almond gum and ferulic acid as natural preservatives in foods. (2023-2025). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Investigation of the microbial and chemical quality of chicken fillet coated with chitosan/tragacanth gum/polyvinyl alcohol composite containing cinnamon essential oil nanoemulsion during storage at refrigerated temperature. (2023-2024). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Comprehensive investigation of controlled release of bioactive compounds using different stimulants. (2022-2024). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Complex coacervate of gelatin and tragacanth as a colloidal carrier for cinnamon essential oil: characterization, toxicity evaluation and antidiabetic activity. (2022-2024). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.

- Design and evaluation of a high-energy food formulation (granula bar) for emergency situations. (2022-2023). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.
- Aerogels: properties and applications. (2022-2023). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.
- Fennel: chemical composition and therapeutic properties. (2022-2023). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.
- Production of functional pastille using microencapsulated curcumin in a complex of psyllium mucilage and gelatin. (2022-2023). Research project, Isfahan University of Medical Sciences, Isfahan, Iran.
- Synthesis of chemically modified microcrystalline cellulose/polyethersulfone membrane with the aim of heavy metal removal from water. (2018). Post-doctoral project, the Netherlands.
- In vivo and in vitro toxicity of cellulose nanofibrills. (2013-2015). Research project, Shahrekord University of Medical Sciences, Iran.
- Investigating the mechanical, thermal and barrier properties of gluten, glutenin and gliadin films reinforced with carboxylated cellulose nanocrystals. (2012-2014). Ph.D. thesis, Isfahan University of Technology, Iran.
- Optimization and modeling of gelatin extraction from chicken deboner residue and investigating the physicochemical properties of the extracted gelatin. (2005-2006). M.Sc. thesis, Isfahan University of Technology, Iran.
- Activity as a supervisor or an adviser in:
 - ❖ Evaluation of di (2-ethylhexyl) phthalate removal efficiency from aqueous solution by cellulose nanofiber. (2016-2017). M.Sc. thesis, Isfahan University of Medical Sciences, Iran.
 - ❖ A new formulation for a low fat mayonnaise sauce. (2016-2017). M.Sc. thesis, University of Tehran, Iran.
 - ❖ New approach for the starch-based nanocomposites preparation. (2015-2017). M.Sc. thesis, Azad University, Iran.

- ❖ Fast and effective synthesis of polymer nanocomposites based on chicken deboner residue gelatin/cellulose nanofibers. (2015-2017). M.Sc. thesis, Azad University, Iran.
- ❖ Preparation of hydrophobic cellulose aerogel via chemical vapor deposition. (2015-2016). M.Sc. thesis, Azad University, Iran.

Teaching activity

- Food Chemistry
- Analytical Chemistry
- Food Preservation
- Chemical Safety of Food

Honors and awards

- The first place among the accepted students of agricultural college at Isfahan University of Technology, 2000.