Hadis Rostamabadi

OFFICE ADDRESS

Nutrition and Food Security Research Center (NFSRC),
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CURRENT POSITION

Assistant Professor of Food Science

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EDUCATION

2020-2021, Iran's National Elites Foundation Postdoc researcher
Gorgan University of agricultural sciences and natural resources
- Department of Food Science and Technology

2019-2020, Postdoc researcher
Isfahan University of Technology
- Department of Materials Engineering (Biomaterials research group)

2016– 2019, Ph.D
Gorgan University of agricultural sciences and natural resources
- Food science and technology, GPA: 18.93/20, completed in 3 years.
- **Thesis**: Preparation of electrosprayed nanoparticles from quince seed mucilage and their application for encapsulation of β-carotene.

UNIVERSITY SERVICES

- **Member of Ethics Committee** of Isfahan University of Medical Sciences, 2021-present.
- **Member of Research Council** of Food Security Research Center, School of Nutrition and Food Science, Isfahan University of Medical Sciences, 2021-present.

HONORS AND AWARDS

2023 **Winner** of the "Shahid Kazemi Ashtiani" Grant by Iran's National Elites Foundation.

2021 **Winner** of the INEF-MSTF fully-founded scholarship award for attending as a visiting scholar in Prof. Khademhosseini's lab at TERASAKI for Biomedical Innovation, Los Angeles, California, USA

2020 **Winner** of the "Shahid Chamran", "Shahid Shahriari", and "Shahid Tehrani Moghadam" Grants by Iran's National Elites Foundation

2019 **Ranked 1st** among Ph.D. students' of 2016 entrance with overall GPA of 18.93/20

2016 **Ranked 1st** among M.Sc. students' of 2013 entrance with overall GPA of 18.20/20

GRANTS

- Fabrication of β-carotene loaded glucuronoxylan-based nanostructures through electrohydrodynamic processing; granted by: Gorgan University of agricultural sciences and natural resources, 2019.
- Encapsulation of curcumin within chitosan-dialdehyde starch nanoparticles; characterization, pH responsivity, and anti-cancer activity; granted by: Isfahan University of Medical Sciences, 2021.
- Curcumin-loaded gelatin-dialdehyde starch hydrogels; design, characterization, and anti-cancer activity; granted by: Isfahan University of Medical Sciences, 2021.
- Electrospinning of layer-by-layered, heteroaggregated, and directly mixed β-carotene emulsions stabilized by whey proteins and gum Arabic; granted by: Isfahan University of Medical Sciences, 2021.
- Design and characterization of biocompatible complexes of pectin and soy protein isolate fibrils for co-encapsulation of resveratrol and *Lactobacillus plantarum*; granted by: Isfahan University of Medical Sciences, 2021.
- Facile fabrication of electrospun whey protein isolate nanofibers via aqueous/alcoholic pre-fibrillation approach; granted by: Isfahan University of Medical Sciences, 2021.
- Preparation, characterization, and applications of lycopene nanodelivery systems; granted by: Isfahan University of Medical Sciences, 2021.
- Physicochemical interactions of protein-polysaccharide systems for encapsulation of bioactive agents; granted by: Isfahan University of Medical Sciences, 2021.
- Seed gum-based delivery systems for micro/nano-encapsulation of bioactive molecules; granted by: Isfahan University of Medical Sciences, 2021.
- Use of electrosprayed κ-carrageenan nanoparticles for encapsulation of highly sensitive bioactive agents; Characterization, in vitro release, and stability; granted by: Isfahan University of Medical Sciences, 2021.
- Basil seed gum promotes the electrospinnability of WPI for co-encapsulation of ZnO nanoparticles and curcumin; granted by: Isfahan University of Technology, 2021.
- Seed gum-based delivery systems and their application in encapsulation of bioactive molecules; granted by: Isfahan University of Medical Sciences, 2021.
- How non-thermal processing treatments affect physicochemical and structural attributes of tuber and root starches?; granted by: Isfahan University of Medical Sciences, 2022.
- Insights into whey protein-based carriers for targeted delivery and controlled release of bioactive components; granted by: Isfahan University of Medical Sciences, 2022.
- Oat starch-How physical and chemical modifications affect the physicochemical attributes and digestibility?; granted by: Isfahan University of Medical Sciences, 2022.

RESEARCH EXPERIENCE

- **PhD Researcher** | **Gorgan university of agricultural sciences and natural resources**

  - Investigated novel natural based hydrocolloids (Quince seed mucilage) as delivery vehicles for controlled release/delivery of hydrophobic bioactives.
  - Designed β-carotene loaded glucuronoxylan-based nanostructures through emulsion-electrohydrodynamic atomization.
  - Utilized diverse microscopy and structural analysis i.e. SEM, TEM, AFM, XRD, TGA, DSC, and FT-IR to investigate physicochemical/thermal attributes of bioactive nano-vehicles.
  - Initiated, designed, and executed an independent project, deeply evaluating the electrospinning/electrospraying behavior of electrostatically/ covalently bounded protein-polysaccharide systems.
  - Developed protocol for and mentored 2 M.Sc. students on electrohydrodynamic atomization of natural gums.
  - Studied the application of lipid nanostructures for encapsulation and targeted delivery of valuable carotenoids.

- Assessed the application of starch as a cutting-edge natural biopolymer for encapsulation of bioactive agents.
- Investigated the potential of different emulsification strategies (i.e. layer by layer, directly mixing and heteroaggregation approaches) for fabrication of bioactive loaded systems.

- **MSc Researcher** | **Agricultural Sciences and Natural Resources University of Khuzestan**

- Incorporated natural based hydrocolloids e.g. Almond gum into the formulation of dairy products as fat replacers.
- Investigated the rheological, microscopy and textural behavior of various dairy products enriched with natural based hydrocolloids.

RESEARCH INTERESTS

- **Food grade delivery systems**
- **Encapsulation**
- **Functional Food**
- **Hydrogels**
- **Colloids**
- **Emulsions/Pickering emulsions**
- **Electrostatic/covalent protein-polysaccharide systems**
- **Electrospinning/electrospraying**
- **Bioactive components**

PROFESSIONAL ASSOCIATION MEMBERSHIPS, SERVICES AND ACTIVITIES

Reviewer (Journals):

- Advances in Colloid and Interface Science
- Food hydrocolloids
- Carbohydrate polymers
- Critical reviews in food science and nutrition
- Food Chemistry
- Food Control
- Food and Bioproducts Processing
- Food Research International
- Food Structure
- LWT - Food Science and Technology
- Drying Technology

Editor (Book):

"Unit Operations and Processing Equipment in the Food Industry" (it will be published by Elsevier in 2023).
"Food bioactive ingredients" (published by Gorgan University of agricultural sciences and natural resources, 2022).

Thesis Supervising Records

Supervisor/advisor of MSc/PhD students' thesis, Isfahan University of Technology

Titles:

a) Development of whey protein isolate-basil seed gum nanofibers via electrospinning and their application for the encapsulation of ZnO nanoparticles and curcumin
b) Encapsulation of bioactives within electrosprayed κ-carrageenan nanoparticles
c) Dual cross-linked hydrogel beads for oral delivery of curcumin
d) Dialdehyde carbohydrate cross-linked electrospun protein ribbons with high efficiency for drug delivery
e) Encapsulation of postbiotics using carbohydrate-based delivery systems

National Standard compilation

Chairwoman of the commission, Sugar- Determination of the particle size distribution of white sugar and plantation white sugars by sieving, INSO 23070, 1st. Edition, 2022.

PUBLICATIONS

Title	Journal/Publisher	Authors	
Starch modification through its combination with other molecules: Gums, mucilages, polyphenols and salts DOI: doi.org/10.1016/j.carbpol.2023.120905	***Carbohydrate Polymers (IF= 10.72)***	**Rostamabadi, …,** Falsafi	2023
Biopolymer nanovehicles for oral delivery of natural anticancer agents DOI: doi.org/10.1002/adfm.202209419	***Advanced Functional Materials (IF=19.92)***	Falsafi, Wang, Ashaolu, Sharma, Rawal, Patel, Askari, Haghjooy Javanmard, **Rostamabadi***	2023
How high hydrostatic pressure treatment modifies the physicochemical and nutritional attributes of polysaccharides? DOI: doi.org/10.1016/j.foodhyd.2022.108375	***Food Hydrocolloids (IF= 11.50)***	**Rostamabadi**، Can Karaca، Nowacka، Z.Mulla، Al-attar، Gultekin, Sehrawat، Kheto، Falsafi	2023
Bixin-loaded colloidal nanodelivery systems, techniques and applications DOI: doi.org/10.1016/j.foodchem.2023.135479	***Food Chemistry (IF= 9.23)***	Enayati, Rezaei, Falsafi, **Rosatmabadi,** …, Jafar	2023
Recent advances in electrospun protein fibers/nanofibers for the food and biomedical applications DOI: doi.org/10.1016/j.cis.2022.102827	***Advances in Colloid and Interface Science (IF=15.19)***	Rostami, **Rostamabadi,** …, Jafari	2023
Nano/micro-formulations of keratin in biocomposites, wound healing and drug delivery systems; recent advances in biomedical applications DOI: doi.org/10.1016/j.eurpolymj.2022.111614	***European Polymer Journal (IF=5.54)***	Sharma, **Rostamabadi,** Gupta, Nadda, Kharazmi, Jafari	2022
Electrospun nanofibers fabricated by natural biopolymers for intelligent food packaging DOI: doi.org/10.1080/10408398.2022.2147900	***Critical Reviews in Food Science and Nutrition (IF= 11.20)***	Ehsani **Rostamabadi,** Dadashi, Ghanbarzadeh, Kharazmi, Jafari	2022
How non-thermal processing treatments affect physicochemical and structural attributes of tuber and root starches? DOI: doi.org/10.1016/j.tifs.2022.08.009	***Trends in Food Science & Technology (IF=16)***	**Rostamabadi**, Rohit, Can Karaca, Nowacka, Colussi, Frasson, Aaliya, Sunooj, Falsaf	2022
Recent advances in oral delivery of bioactive molecules: Focus on prebiotic carbohydrates as vehicle matrices DOI: doi.org/10.1016/j.carbpol.2022.120074	***Carbohydrate Polymers (IF= 10.72)***	Falsafi, Bangar, Chaudhary, Hosseini, Mokhtari, Can Karaca, Samota, Goswami, Krishnan, Askari, **Rostamabadi***	2022
Recent progresses in the delivery of β-carotene: From nano/microencapsulation to bioaccessibility DOI: doi.org/10.1016/j.cis.2022.102750	***Advances in Colloid and Interface Science (IF=15.19)***	Jalali, **Rostamabadi,** Assadpour, Jafari	2022
Basil seed gum promotes the electrospinnability of WPI for co-encapsulation of ZnO nanoparticles	***Carbohydrate Polymers (IF= 10.72)***	Larki, Enayati, **Rostamabadi***	2022

and curcumin DOI: doi.org/10.1016/j.carbpol.2022.119966			
Lycopene nanodelivery systems; recent advances DOI: doi.org/10.1016/j.tifs.2021.12.016	***Trends in Food Science & Technology* (IF=16)**	Falsafi, **Rostamabadi***, Babazadeh, Tarhan, Boostani, Jafari	2022
Encapsulation of bioactives within electrosprayed κ-carrageenan nanoparticles. DOI: doi.org/10.1016/j.carbpol.2022.119761	***Carbohydrate Polymers* (IF= 10.72)**	Fani, Enayati, **Rostamabadi***, & Falsafi	2022
Insights into whey protein-based carriers for targeted delivery and controlled release of bioactive components DOI: doi.org/10.1016/j.foodhyd.2022.108002	***Food Hydrocolloids (IF= 11.50)***	Falsafi, Karaca, Deng, Wang, Li, Askari, & **Rostamabadi***	2022
Oat starch - How physical and chemical modifications affect the physicochemical attributes and digestibility? DOI: doi.org/10.1016/j.carbpol.2022.119931	***Carbohydrate Polymers* (IF= 10.72)**	**Rostamabadi**, Karaca, Deng, Colussi, Falsafi	2022
Seed gum-based delivery systems and their application in encapsulation of bioactive molecules DOI: doi.org/10.1080/10408398.2022.2076065	***Critical Reviews in Food Science and Nutrition (IF= 11.20)***	Rostamabadi, Falsafi, Nishinari, **Rostamabadi***	2022
The role of emulsification strategy on the electrospinning of β-carotene-loaded emulsions stabilized by gum Arabic and whey protein isolate DOI: doi.org/10.1016/j.foodchem.2021.131826	***Food Chemistry (IF= 9.23)***	Falsafi, **Rostamabadi*,** Nishinari, Jafari	2022
Application of multi-criteria decision-making for optimizing the formulation of functional cookies containing different types of resistant starches: A physicochemical, organoleptic, in-vitro and in-vivo study DOI: doi.org/10.1016/j.foodchem.2022.133376	***Food Chemistry (IF= 9.23)***	Falsafi, Maghsoudlou, Aalami, Jafari, Raeisi, Nishinari, **Rostamabadi***	2022
Recent advances in food applications of phenolic-loaded micro/nanodelivery systems DOI: doi.org/10.1080/10408398.2022.2056870	***Critical Reviews in Food Science and Nutrition (IF= 11.20)***	Siddiqu, Bahmid, Khalifa, Khan, **Rostamabadi**, Jafari	2022
Nanoencapsulation of essential oils from industrial hemp (Cannabis sativa L.) by-products into alfalfa protein nanoparticles DOI: doi.org/10.1016/j.foodchem.2022.132765	***Food Chemistry (IF= 9.23)***	Hadid, **Rostamabadi**, Moreno, Jafari	2022
Protein-polysaccharide interactions for the fabrication of bioactive-loaded nanocarriers: Chemical conjugates and physical complexes DOI: doi.org/10.1016/j.phrs.2022.106164	***Pharmacological Research (IF= 10.33)***	Falsafi, **Rostamabadi***, Samborska, Jafari	2022
Anticancer nano-delivery systems based on bovine serum albumin nanoparticles: A critical review DOI: doi.org/10.1016/j.ijbiomac.2021.10.040	***International Journal of Biological Macromolecules (IF= 8.02)***	Solanki, **Rostamabadi,** Patel, Jafari	2021
Electrospraying as a novel process for the synthesis of particles/nanoparticles loaded with poorly water-soluble bioactive molecules DOI: doi.org/10.1016/j.cis.2021.102384	***Advances in Colloid and Interface Science* (IF=15.19)**	**Rostamabadi***, Falsafi, Assadpour, & Jafari	2021

Green biopolymers from by-products as wall materials for spray drying microencapsulation of phytochemicals DOI: doi.org/10.10.1016/j.tifs.2021.01.008	***Trends in Food Science & Technology* (IF=16)**	Samborska, Boostani, Geranpour, Hosseini, Dima, Khoshnoudi-Nia, **Rostamabadi**, Falsafi, Jafaric	2021
Covalent and Electrostatic Protein-Polysaccharide Systems for Encapsulation of Nutraceuticals DOI: doi.org/10.1016/B978-0-12-819724-0.00055-0	**In book:** *Reference Module in Materials Science and Materials Engineering* Academic Press.	**Rostamabadi**, Falsafi, & Jafari	2021
Possible health risks associated with nanostructures in food DOI: doi.org/10.1016/B978-0-12-815725-1.00002-1	**In book:** Safety and Regulatory Issues of Nanoencapsulated Food Ingredients	Rezaei, Daeihamed, Capanoglu, **Rostamabadi,** Falsaf i& Jafari	2021
Application of nano/microencapsulated ingredients in chewing gum DOI: doi.org/10.1016/B978-0-12-815726-8.00008-8	**In book:** *Application of Nano/Microencapsulated Ingredients in Food Products.* Academic Press.	Cacciotti, Garavand, **Rostamabadi**, Khorshidian, Sarlak, Jafari	2021
Design and formulation of nano/micro-encapsulated natural bioactive compounds for food applications DOI: doi.org/10.1016/B978-0-12-815726-8.00001-5	**In book:** *Application of Nano/Microencapsulated Ingredients in Food Products.* Academic Press.	**Rostamabadi,** Falsafi, Boostani, Katouzian, Rezaei, Assadpour, Jafari	2021
Evaluating the structural properties of bioactive-loaded nanocarriers with modern analytical tools DOI: doi.org/10.1111/1541-4337.12653	***Comprehensive Reviews in Food Science and Food Safety* (IF=15.78)**	**Rostamabadi**, Falsafi, Assadpour, & Jafari	2020
Effect of sonication on physical, chemical and functional properties of oat starch DOI: doi.org/10.22069/EJFPP.2020.14426.1462	***Journal of Food Processing and Preservation***	Maghsoudlou, Falsafi, **Rostamabadi**	2020
Electrospinning approach for nanoencapsulation of bioactive compounds; recent advances and innovations. DOI: doi.org/10.1016/j.tifs.2020.04.012	***Trends in Food Science & Technology* (IF=16)**	**Rostamabadi**, Assadpour, Tabarestani, Falsafi, & Jafari	2020
Morphology and microstructural analysis of bioactive-loaded micro/nanocarriers via microscopy techniques; CLSM/SEM/TEM/AFM. DOI: doi.org/10.1016/j.cis.2020.102166	***Advances in Colloid and Interface Science* (IF=15.19)**	Falsafi, **Rostamabadi**, Assadpour, & Jafari	2020
Introduction to characterization of nanoencapsulated food ingredients DOI: doi.org/10.1016/B978-0-12-815667-4.00001-8	**In book:** *Characterization of Nanoencapsulated Food Ingredients*. Academic Press.	Assadpour, **Rostamabadi**, & Jafari	2020
Transmission electron microscopy (TEM) of nanoencapsulated food ingredients. DOI: doi.org/10.1016/B978-0-12-815667-4.00002-X	**In book:** *Characterization of Nanoencapsulated Food Ingredients*. Academic Press.	**Rostamabadi**, Falsafi, & Jafari	2020
X-ray diffraction (XRD) of nanoencapsulated food ingredients. DOI: doi.org/10.1016/B978-0-12-815667-4.00009-2	**In book:** In *Characterization of Nanoencapsulated Food*	Falsafi, **Rostamabadi**, & Jafari	2020

	Ingredients. Academic Press.		
Fabrication of β-carotene loaded glucuronoxylan-based nanostructures through electrohydrodynamic processing. DOI: doi.org/10.1016/j.ijbiomac.2019.07.182	***International journal of biological macromolecules* (IF=8.02)**	**Rostamabadi**, Mahoonak, Allafchian, & Ghorbani	2019
Nanoencapsulation of carotenoids within lipid-based nanocarriers. DOI: doi.org/10.1016/j.jconrel.2019.02.005	***Journal of controlled release* (IF=11.47)**	**Rostamabadi**, Falsafi, & Jafari	2019
Starch-based nanocarriers as cutting-edge natural cargos for nutraceutical delivery. DOI: doi.org/10.1016/j.tifs.2019.04.004	***Trends in Food Science & Technology* (IF=16)**	**Rostamabadi**, Falsafi, & Jafari	2019
Nano-helices of amylose for encapsulation of food ingredients. DOI: doi.org/10.1016/B978-0-12-815663-6.00016-1	**In book:** *Biopolymer nanostructures for food encapsulation purposes, Academic press*	**Rostamabadi**, Falsafi, & Jafari	2019
Nanostructures of starch for encapsulation of food ingredients. DOI: doi.org/10.1016/B978-0-12-815663-6.00015-X	**In book:** *Biopolymer nanostructures for food encapsulation purposes.* Academic Press.	**Rostamabadi**, Falsafi, & Jafari	2019
Preparation of physically modified oat starch with different sonication treatments. DOI: doi.org/10.1016/j.foodhyd.2018.10.046	***Food Hydrocolloids* (IF=11.53)**	Falsafi, Maghsoudlou, **Rostamabadi**, Hamedi, Hosseini	2019
Effect of Persian and almond gums as fat replacers on the physicochemical, rheological, and microstructural attributes of low-fat Iranian White cheese DOI: https://doi.org/10.1002/fsn3.446	***Food Science and Nutrition* (IF=3.55)**	Jooyandeh, Goudarzi, **Rostamabadi**, & Hojjati	2017