

# Hadis Rostamabadi

## OFFICE ADDRESS

Food Security Research Center (FSRC),  
School of Nutrition and Food Sciences,  
Isfahan University of Medical Sciences (IUMS)  
Isfahan, 81746-73461, Iran.

## CURRENT POSITION

Assistant Professor of Food Science and Technology

## CONTACT

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### Social networks:

- [Google scholar](#)

## 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  $\beta$ -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

- 2021** • **Winner** of the INEF-Mustafa Science and Technology Foundation 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 the 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

- 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  $\beta$ -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  $\kappa$ -carrageenan nanoparticles for encapsulation of highly sensitive bioactive agents; Characterization, in vitro release, and stability; granted by: Isfahan University of Medical Sciences, 2021.

## 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  $\beta$ -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

- Bioactive delivery systems
- Food bioactive agents
- Hydrogels
- Colloids
- Functional food
- Emulsions/Pickering emulsions
- Electrostatic/covalent protein-polysaccharide systems
- Electrospinning/electrospraying

## PROFESSIONAL ASSOCIATION MEMBERSHIPS, SERVICES AND ACTIVITIES

### Reviewer (Journals):

- Food Hydrocolloids
- Critical Reviews in Food Science and Nutrition
- LWT - Food Science and Technology
- Food Control
- Food and Bioproducts Processing
- Drying Technology

### Editor (Book):

“Unit Operations and Processing Equipment in the Food Industry” (it will be published by Elsevier in 2021-2023).

## PUBLICATIONS

| Title                                                                                                                                                                                                                                                          | Journal/Publisher                                         | Authors                                                                                               | Year |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------|
| Lycopene nanodelivery systems; recent advances<br>DOI: <a href="https://doi.org/10.1016/j.tifs.2021.12.016">doi.org/10.1016/j.tifs.2021.12.016</a>                                                                                                             | <b>Trends in Food Science &amp; Technology</b>            | Falsafi, <b>Rostamabadi*</b> , Babazadeh, Tarhan, ... & Jafari                                        | 2022 |
| The role of emulsification strategy on the electrospinning of $\beta$ -carotene-loaded emulsions stabilized by gum Arabic and whey protein isolate<br>DOI: <a href="https://doi.org/10.1016/j.foodchem.2021.131826">doi.org/10.1016/j.foodchem.2021.131826</a> | <b>Food Chemistry</b>                                     | Falsafi, <b>Rostamabadi*</b> , Nishinari, Amani & Jafari                                              | 2022 |
| Protein-polysaccharide interactions for the fabrication of bioactive-loaded nanocarriers: Chemical conjugates and physical complexes<br>DOI: <a href="https://doi.org/10.1016/j.phrs.2022.106164">doi.org/10.1016/j.phrs.2022.106164</a>                       | <b>Pharmacological Research</b>                           | Falsafi, <b>Rostamabadi*</b> , Samborska, Mirarab, Rashidinejhad & Jafari                             | 2022 |
| Anticancer nano-delivery systems based on bovine serum albumin nanoparticles: A critical review<br>DOI: <a href="https://doi.org/10.1016/j.ijbiomac.2021.10.040">doi.org/10.1016/j.ijbiomac.2021.10.040</a>                                                    | <b>International Journal of Biological Macromolecules</b> | Solanki, <b>Rostamabadi</b> , Patel, Jafari                                                           | 2021 |
| Electrospraying as a novel process for the synthesis of particles/nanoparticles loaded with poorly water-soluble bioactive molecules<br>DOI: <a href="https://doi.org/10.1016/j.cis.2021.102384">doi.org/10.1016/j.cis.2021.102384</a>                         | <b>Advances in Colloid and Interface Science</b>          | <b>Rostamabadi*</b> , Falsafi, Assadpour, & Jafari                                                    | 2021 |
| Green biopolymers from by-products as wall materials for spray drying microencapsulation of phytochemicals<br>DOI: <a href="https://doi.org/10.1016/j.tifs.2021.01.008">doi.org/10.1016/j.tifs.2021.01.008</a>                                                 | <b>Trends in Food Science &amp; Technology</b>            | Samborska, Boostani, Geranpour, Hosseini, Dima, Khoshnoudi-Nia, <b>Rostamabadi</b> , 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](https://doi.org/10.1016/B978-0-12-819724-0.00055-0)

Possible health risks associated with nanostructures in food

DOI: [doi.org/10.1016/B978-0-12-815725-1.00002-1](https://doi.org/10.1016/B978-0-12-815725-1.00002-1)

Application of nano/microencapsulated ingredients in chewing gum

DOI: [doi.org/10.1016/B978-0-12-815726-8.00008-8](https://doi.org/10.1016/B978-0-12-815726-8.00008-8)

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](https://doi.org/10.1016/B978-0-12-815726-8.00001-5)

Evaluating the structural properties of bioactive-loaded nanocarriers with modern analytical tools

DOI: [doi.org/10.1111/1541-4337.12653](https://doi.org/10.1111/1541-4337.12653)

Effect of sonication on physical, chemical and functional properties of oat starch

DOI: [doi.org/10.22069/EJFPP.2020.14426.1462](https://doi.org/10.22069/EJFPP.2020.14426.1462)

Electrospinning approach for nanoencapsulation of bioactive compounds; recent advances and innovations

DOI: [doi.org/10.1016/j.tifs.2020.04.012](https://doi.org/10.1016/j.tifs.2020.04.012)

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](https://doi.org/10.1016/j.cis.2020.102166)

Introduction to characterization of nanoencapsulated food ingredients

DOI: [doi.org/10.1016/B978-0-12-815667-4.00001-8](https://doi.org/10.1016/B978-0-12-815667-4.00001-8)

Transmission electron microscopy (TEM) of nanoencapsulated food ingredients

DOI: [doi.org/10.1016/B978-0-12-815667-4.00002-X](https://doi.org/10.1016/B978-0-12-815667-4.00002-X)

X-ray diffraction (XRD) of nanoencapsulated food ingredients

DOI: [doi.org/10.1016/B978-0-12-815667-4.00009-2](https://doi.org/10.1016/B978-0-12-815667-4.00009-2)

Fabrication of  $\beta$ -carotene loaded glucuronoxylan-based nanostructures through electrohydrodynamic processing

DOI: [doi.org/10.1016/j.ijbiomac.2019.07.182](https://doi.org/10.1016/j.ijbiomac.2019.07.182)

**In book:** *Reference Module in Materials Science and Materials Engineering* Academic Press.

**In book:** *Safety and Regulatory Issues of Nanoencapsulated Food Ingredients*

**In book:** *Application of Nano/Microencapsulated Ingredients in Food Products.* Academic Press.

**In book:** *Application of Nano/Microencapsulated Ingredients in Food Products.*

Academic Press.

**Comprehensive Reviews in Food Science and Food Safety**

**Journal of Food Processing and Preservation**

**Trends in Food Science & Technology**

**Advances in Colloid and Interface Science**

**In book:** *Characterization of Nanoencapsulated Food Ingredients.* Academic Press.

**In book:** *Characterization of Nanoencapsulated Food Ingredients.* Academic Press.

**In book:** *In Characterization of Nanoencapsulated Food Ingredients.* Academic Press.

**International journal of biological macromolecules**

**Rostamabadi, Falsafi, & Jafari** 2021

Rezaei, Daeihamed, Capanoglu, **Rostamabadi, Falsafi & Jafari** 2021

Cacciotti, Garavand, **Rostamabadi, Khorshidian, Sarlak, Jafari** 2021

**Rostamabadi, Falsafi, Boostani, Katouzian, Rezaei, Assadpour, Jafari** 2021

**Rostamabadi, Falsafi, Assadpour, & Jafari** 2020

Maghsoudlou, Falsafi, **Rostamabadi** 2020

**Rostamabadi, Assadpour, Tabarestani, Falsafi, & Jafari** 2020

Falsafi, **Rostamabadi, Assadpour, & Jafari** 2020

Assadpour, **Rostamabadi, & Jafari** 2020

**Rostamabadi, Falsafi, & Jafari** 2020

Falsafi, **Rostamabadi, & Jafari** 2020

**Rostamabadi, Mahoonak, Allafchian, & Ghorbani** 2019

|                                                                                                                                                                                                                                                |                                                                                            |                                                            |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------|------|
| Nanoencapsulation of carotenoids within lipid-based nanocarriers<br>DOI: <a href="https://doi.org/10.1016/j.jconrel.2019.02.005">doi.org/10.1016/j.jconrel.2019.02.005</a>                                                                     | <b>Journal of controlled release</b>                                                       | <b>Rostamabadi, Falsafi, &amp; Jafari</b>                  | 2019 |
| Starch-based nanocarriers as cutting-edge natural cargos for nutraceutical delivery<br>DOI: <a href="https://doi.org/10.1016/j.tifs.2019.04.004">doi.org/10.1016/j.tifs.2019.04.004</a>                                                        | <b>Trends in Food Science &amp; Technology</b>                                             | <b>Rostamabadi, Falsafi, &amp; Jafari</b>                  | 2019 |
| Nano-helices of amylose for encapsulation of food ingredients.<br>DOI: <a href="https://doi.org/10.1016/B978-0-12-815663-6.00016-1">doi.org/10.1016/B978-0-12-815663-6.00016-1</a>                                                             | <b>In book: Biopolymer nanostructures for food encapsulation purposes, Academic press</b>  | <b>Rostamabadi, Falsafi, &amp; Jafari</b>                  | 2019 |
| Nanostructures of starch for encapsulation of food ingredients.<br>DOI: <a href="https://doi.org/10.1016/B978-0-12-815663-6.00015-X">doi.org/10.1016/B978-0-12-815663-6.00015-X</a>                                                            | <b>In book: Biopolymer nanostructures for food encapsulation purposes. Academic Press.</b> | <b>Rostamabadi, Falsafi, &amp; Jafari</b>                  | 2019 |
| Preparation of physically modified oat starch with different sonication treatments<br>DOI: <a href="https://doi.org/10.1016/j.foodhyd.2018.10.046">doi.org/10.1016/j.foodhyd.2018.10.046</a>                                                   | <b>Food Hydrocolloids</b>                                                                  | Falsafi, Maghsoudlou, <b>Rostamabadi</b> , Hamed, Hosseini | 2019 |
| Effect of Persian and almond gums as fat replacers on the physicochemical, rheological, and microstructural attributes of low-fat Iranian White cheese<br>DOI: <a href="https://doi.org/10.1002/fsn3.446">https://doi.org/10.1002/fsn3.446</a> | <b>Food Science and Nutrition</b>                                                          | Jooyandeh, Goudarzi, <b>Rostamabadi</b> , & Hojjati        | 2017 |

## Research Projects

- Preparation, characterization, and applications of lycopene nanodelivery systems
- Physicochemical interactions of protein-polysaccharide systems for encapsulation of bioactive agents
- Seed gum-based delivery systems for micro/nano-encapsulation of bioactive molecules
- Insights into whey protein-based carriers for targeted delivery and controlled release of bioactive components
- Advanced oral delivery of bioactive molecules via prebiotic and dietary fiber-based polymers
- Fabrication of electrospun whey protein isolate nanofibers via aqueous/alcoholic pre-fibrillation approach; Physicochemical and structural properties
- Biocompatible complexes of soy protein isolate fibrils and pectin for co-delivery of resveratrol and *Lactobacillus plantarum*

- The utilization of electrosprayed κ-carrageenan nanoparticles for encapsulation of highly sensitive bioactive agents
- Encapsulation of curcumin within whey protein isolate-basil seed gum based nanofibers
- Electrospinning of layer-by-layered, heteroaggregated, and directly mixed β-carotene emulsions stabilized by whey proteins and gum Arabic
- Curcumin-loaded gelatin-dialdehyde starch hydrogels; design, characterization, and anti-cancer activity
- Encapsulation of curcumin within chitosan-dialdehyde starch nanoparticles; characterization, pH-responsivity, and anti-cancer activity