

MAHDIYAR SHAHBAZI (PhD, Dr. Eng)

Date of birth: 28 March 1985

Gender: Male

University of Natural Resources and Life Sciences (BOKU); Department of Food Science and Technology

➤ PROFESSIONAL EXPERIENCE:

▪ 8 Years of Research Experience:

- Researcher in the field of Innovative Formulation for Food Products with Modified Hydrocolloids through 3D Food Printing; **BOKU University** (Vienna, Austria) (Present).
- Senior Researcher in Formulation and Development of High-Quality Low-Calorie Foods by Using Novel Food Hydrocolloids without Negatively Affecting its Product Properties; **University of Vienna, Vienna, Austria.** (2017- 2019).
- Sensory Researcher in Sensory Laboratory of Department of Nutrition; **University of Vienna, Vienna, Austria.** (2017- 2019).
- One Year Research on Food Hydrocolloids & Interface; **University of Vienna** (2017-2018).
- Two Years Senior Researcher Assistant on Development of Nanocomposites with Food Hydrocolloids by High-energy Irradiation at Nuclear Science & Technology Centre, Tehran, Iran (2015-2017).
- Four years Doctoral research on Biomaterial Design and Nanocomposites at RIFST, Mashhad, Iran (2017).
- Visited Technical University of Munich, Department of Bioengineering Under TRIBOLOGY cooperative science program (Joint Research Project) (2018).
- Visited Leeds University under Cooperative Science Program (Joint Research Project) (2018).
- Researcher on Food Emerging Technology and Biomaterial Rheology at Shiraz, Iran (2010-2012).

▪ Completed Several National And Sponsored Research Projects:

- Cereal-based Products, Chocolate & Confectionery Products. **Shahbazi, M & Jäger, H.** (2018-2019).
- Formulation and Production of High-Quality Printed Products and Low-Calorie Chocolate by Using the Most Appropriate Ingredients without Negatively Affecting its Product Properties **Shahbazi, M & Jäger, H.** (2018-2019).
- Three-Dimensional Printed Nanocomposite Hydrogel Based on Na-alginate containing Nanoclay as superabsorbent for Wastewater Treatment. **Shahbazi, M & Lacroix, M.** (2018-2019).
- Three-Dimensional Bactericidal Hydrogel Based on Gelatin and Na-Alginate Incorporated with Silver Nanoparticles as Next-Generation Water Membrane. **Shahbazi, M & Lacroix, M.** (2018-2019).
- Relation between functional characteristics and sensory properties of gluten-free bread as affected by modified dietary fibers. University of Vienna, Austria. Research Expedition at University of Vienna. Kiumarsi, **M., Shahbazi, M., Machjezak, D.** (2017).
- Potential of producing a well-defined gel with gum tragacanth, Arabic gum and locust bean gum through with electron beam irradiation. **Shahbazi, M., Rajabzadeh, G., Ettelaie, R. and Ahmadi, S. J.** (2016-2017).
- Effect of electron beam irradiation on a wide range of hydrocolloids with aim of using in packaging application (ELECTRONBEAM project). **Shahbazi, M., Rajabzadeh, G. and Ahmadi, S. J.** (2015-2017).
- Comparative study on mechanical and structural properties of Biomaterials by high-pressure and high-shear forces to produce Biofilms for packaging. **Shahbazi, M., Majzoobi, M. and Farahnaki, A.** (2010-2012).

➤ EDUCATION

- **PhD (2012-2017) in Food Science and Technology**, Research Institute of Food Science & Technology (RIFST), Department of Food Chemistry, Mashhad, Iran.

Thesis Title: "Preparation of bio-nanocomposites based on gelatin, poly (vinyl alcohol), carboxymethyl cellulose and chitosan by incorporation of nanoclay and modification of their physico-chemical properties via electron beam irradiation".

- **M.Sc. (2010-2012) in Food Science and Technology**, Department of Food Science and Technology, School of Agriculture, Shiraz University, Shiraz, Iran.

Thesis Title: "Effects of high pressure homogenization and high shear mixing on physicochemical properties of corn starch and κ -carrageenan".

- **B.Sc. (2005-2009); Food Science and Technology**; Sari University (Khazar University), Sari, Iran.

➤ **PUBLICATIONS IN Q1 SCIENTIFIC JOURNALS (PEER-REVIEWED). ASTERISKS (*) REPRESENT CORRESPONDING AUTHORS.**

- **Mahdiyari Shahbazi*** & Henry Jäger (2020). Current status in the utilization of bio-based polymers for 3D printing process: A systematic review of processes, materials and challenges. **Additive Manufacturing**.
- **Mahdiyari Shahbazi***, Henry Jäger & Dorota Machjezak (2020). Manufacture of reduced fat 3D printed meat analogue by using biopolymeric surfactants: Part 2: Thermal, crystalline, and dynamic sensory properties. **Food Chemistry**.
- **Mahdiyari Shahbazi*** & Henry Jäger (2020). Manufacture of reduced fat 3D printed meat analogue by using biopolymeric surfactants. Part 1: Printability and extrudability. **Food Chemistry**.
- **Mahdiyari Shahbazi***, Henry Jäger, Seyed Javad Ahmadi & Monique Lacroix. (2020). Electron beam crosslinking of alginate/nanoclay ink to improve functional properties of 3D printed hydrogel for removing heavy metal ions. **Carbohydrate Polymers**, 116211.
- Maryam Kiumarsi, Dorota Machjezak, Henry Jäger, Jian Song, Oliver Lieleg & **Mahdiyari Shahbazi*** (2020). Comparative study of instrumental properties and sensory profiling of low-calorie chocolate containing hydrophobically modified inulin. Part 2: Proton mobility, topological, tribological and dynamic sensory properties. **Food Hydrocolloids**.
- Maryam Kiumarsi, Dorota Machjezak, Samira Yeganezad, Henry Jäger & **Mahdiyari Shahbazi*** (2020). Comparative study of instrumental properties and sensory profiling of chocolate containing hydrophobically modified inulin. Part 1: Rheological, thermal, structural and sensory properties. **Food Hydrocolloids**.
- Maryam Kiumarsi, **Mahdiyari Shahbazi***, Dorota Machjezak, Oliver Lieleg, & Benjamin Winkeljann. Relation between structural, mechanical and sensory properties of gluten-free bread as affected by modified dietary fibers. **Food Chemistry**, 277 (2019): 664-673.
- **Mahdiyari Shahbazi***, Mahsa, Majzoobi, & Asgar Farahnaky. Physical modification of starch by high-pressure homogenization for improving functional properties of κ -carrageenan/starch blend film. **Food Hydrocolloids**, 85 (2018), 204-214.
- **Mahdiyari Shahbazi***, Mahsa Majzoobi, & Asgar Farahnaky. Impact of shear force on functional properties of native starch and resulting gel and film. **Journal of Food Engineering**, 223 (2018), 10-21.
- **Mahdiyari Shahbazi***, Ghadir Rajabzadeh, & Shahnaz Sotoodeh. Functional characteristics, wettability properties and cytotoxic effect of starch film incorporated with multi-walled and hydroxylated multi-walled carbon nanotubes. **International Journal of Biological Macromolecules**, 104 (2017): 597-605.
- **Mahdiyari Shahbazi***, Ghadir Rajabzadeh, & Seyed Javad Ahmadi. "Characterization of nanocomposite film based on chitosan intercalated in clay platelets by electron beam irradiation." **Carbohydrate Polymers**, 157 (2017): 226-235.
- **Mahdiyari Shahbazi***, Ghadir Rajabzadeh, Ali Rafe, Rammile Ettelaie, & Seyed Javad Ahmadi. Physico-mechanical and structural characteristics of blend film of poly (vinyl alcohol) with biodegradable polymers as affected by disorder-to-order conformational transition (*Corrigendum*). **Food Hydrocolloids**, 71 (2017), 259-269.
- **Mahdiyari Shahbazi***, Seyed Javad Ahmadi, Amirhossein Seif, & Ghadir Rajabzadeh. "Carboxymethyl cellulose film modification through surface photo-crosslinking and chemical crosslinking for food packaging applications." **Food Hydrocolloids**, 61 (2016), 378-389.
- **Mahdiyari Shahbazi***, Ghadir Rajabzadeh, Ali Rafe, Rammile Ettelaie, & Seyed Javad Ahmadi. "The physico-mechanical and structural characteristics of blend film of poly (vinyl alcohol) with biodegradable polymers as affected by disorder-to-order conformational transition." **Food Hydrocolloids**, 60 (2016): 393-404.
- **Mahdiyari Shahbazi**, Rammile Ettelaie, & Ghadir Rajabzadeh. Physico-mechanical analysis data in support of compatibility of chitosan/ κ -carrageenan polyelectrolyte films achieved by ascorbic acid, and the thermal degradation theory of κ -carrageenan influencing the properties of its blends. **Data in Brief**, 9 (2016), 648-660.
- **Mahdiyari Shahbazi**, Ghadir Rajabzadeh, Rammile Ettelaie, & Ali Rafe. "Kinetic study of κ -carrageenan degradation and its impact on mechanical and structural properties of chitosan/ κ -carrageenan film." **Carbohydrate polymers**, 142 (2016): 167-176.
- Farahnaky, Asgar, Seyed Mohammad Mahdi Dadfar, & **Mahdiyari Shahbazi**. "Physical and mechanical properties of gelatin-clay nanocomposite." **Journal of Food Engineering**, 122 (2014): 78-83.

➤ INVITED PRESENTATIONS TO PEER-REVIEWED, INTERNATIONALLY ESTABLISHED CONFERENCES

- Three-Dimensional Bactericidal Aerogel Filter Based on Gelatin and Na-Alginate Incorporated with Silver Nanoparticles as Next-Generation Water Membrane. **Mahdiyeh Shahbazi** & Monique Lacroix. Colloidal & Interface. Vienna, Austria, (2019).
- Relation between sensory properties and structural characteristics of gluten-free bread as affected by modified dietary fibers. Maryam Kiumarsi, Dorota Majchrzak, Samira Yeganehzad & **Mahdiyeh Shahbazi**. EUROSENSE, Verona, Italy, (2018).
- Evaluation of type and size of nanoclay on physico-mechanical and structural properties of PVA/CMC film. The 3rd international conference and exhibition on Food Science and Technology. **Mahdiyeh Shahbazi**, Ghadir Rajabzadeh Isfahan, Iran. Oral Presentation, (2015).
- Fabrication of poly (vinyl alcohol) nanocomposite film by incorporation of various types of nanoclay: A comparative study. **Mahdiyeh Shahbazi**, Ghadir Rajabzadeh. Oral Presentation, 3rd International Congress on Food science and technology. Isfahan, Iran, (2015).
- Synthesis of Well-Defined Xanthan Hydrogel Networks Using Irradiation, **Mahdiyeh Shahbazi**, Seyed Javad Ahmadi, Ghadir Rajabzadeh. IFT 2015, Chicago, Illinois, USA, (2015).
- Effect of UV irradiation on rheological properties of tragacanth. **Mahdiyeh Shahbazi**, Ghadir Rajabzadeh. Poster Presentation, 1st International Congress on Natural Food Hydrocolloids. Mashhad, Iran, (2014).
- Effect of UV irradiation on starch/k-carrageenan film reinforced by multi-walled carbon nanotubes. **Mahdiyeh Shahbazi**, Ghadir Rajabzadeh. 21st National Congress of Food Science and Technology, Shiraz, Iran, (2013).
- Novel approach for evaluation of acrylamide in oat bread using fractal colored. **Mahdiyeh Shahbazi**, Hadis Shahbazi. 21st National Congress of Food Science and Technology, Shiraz, Iran, (2013).

➤ PRIZES AND AWARDS

- Award for reviewing scientific journals (Q1) as outstanding reviewer:
 - *Applied Catalysis A: General, Catalysis Communications; Carbohydrate Polymers; Food Hydrocolloids; Journal of Food Engineering; International Journal of Food Engineering; Chemical Physics Letter*
- Award for the best oral presentation in 1st International Congress on Natural Food Hydrocolloids. October, 2014, Mashhad, Iran.
- Award for the First Candidate in the Iranian University Entrance Exam (Associate degree to Bachelor's degree), 2006.
- Best poster awards at different National and International conferences.

➤ FUNDING RECEIVED SO FAR

- Formulation and Production of High-Quality Bakery Products and Low-Calorie Chocolate (2012-2017). Research Institute of Food Science & Technology; University of Vienna.
- PhD (2012-2017); Research Institute of Food Science & Technology, Department of Food Chemistry, Mashhad.

➤ SUPERVISING AND MENTORING ACTIVITIES

- Advised Two PhDs (University of Vienna; Natural Resources and Life Sciences (BOKU), Austria (Present).
- Two years of Teaching Experience in in Food Science and Technology Iran (2012-2014).
- Advised Two MSs in the field of Engineering Chemistry and Food Science & Technology.
- Two MTech students at University of Bu-Ali, Iran,(2014).
- Visited University of Bu-Ali and delivered invited lecture and guest lectures on Food Chemistry (2012).