



Ali Rafe

Personal Information

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Education

- 03.2019 **Experienced Researcher,**
at **WWU**, Munster (Alexander von Humboldt)
- 2011-2012 **Research Scholar,**
at Department of Chemical and Biomolecular Engineering in North Carolina State University (NCSU), USA.
- 2008-2012 **Ph.D. of food engineering;**
Ferdowsi University of Mashhad (FUM), Mashhad, Iran.
PhD Dissertation: *Rheological, thermal and structural properties of β -Lactoglobulin-Basil seed hydrocolloid mixture in a model system*
Relevant Courses: Food Rheology, Modeling and simulation, Image processing, Applied mathematics in food engineering.
- 2004-2006 **M.Sc. of food science and technology;**
FUM, Mashhad, Iran.
MSc Thesis: *Potential of UF membrane in degumming, bleaching and refining of crude canola oil*
Relevant Courses: Engineering properties of foods, Membrane processes technology, Advanced food process engineering.
- 2000-2004 **B.Sc. of food science and technology;**
University of Tabriz, Iran.
Relevant Courses: Food chemistry, Food microbiology, Food process engineering, Dairy technology, Edible oil technology, Sugar technology, Canning.

Employment

- 2019-2021 **Experienced Researcher,**
Westfälische Wilhelms-Universität Münster
Research Awarded by Alexander von Humboldt Foundation.
- 2016-now **Associate Professor,**

- Research Institute of Food Science & Technology (RIFST), Mashhad, Iran.*
Teaching: Advanced Food Rheology, Food Modeling and Simulation
 2011-2016 **Assistant Professor,**
Research Institute of Food Science & Technology (RIFST), Mashhad, Iran.
Teaching: Advanced Food Rheology, Food Modeling and Simulation
 2010-2013 **Lecturer** (Oil technology, Applied computer & English language for food
 (part-time) students), *Department of Food Science & Technology, Toos Industrial state, Mashhad, Iran.*
- 2007-2011 **Technical responsible and quality control (QC) supervisor,**
Nutricia-Mashhad Milk Powder (multi), Toos Industrial state, Mashhad, Iran.
www.nutricia-mmp.ir/en/
- 2007-2009 **Lecturer** (Food packaging, Quality control, Seminar & Oil technology),
Department of Food Science & Technology, Islamic Azad university, Damghan, Iran.
- 2006 **Lab responsible in edible oil industry,**
Seh-Gol Khorasan, Edible oil extraction and refinery, Neyshabur, Iran.

Research Interests

- Structure-property relationship of aqueous foams
- Rheology of gels, foams and biopolymers
- Food Hydrocolloids,
- Food Engineering

Research Projects

Some of the research projects are provided as follows:

- Optimization and preparation of stabilized extruded rice bran powder and investigation on its physicochemical and functional properties
- Functional properties of Herbal drink based on berberis, saffron and jujube
- Formulation optimization and development of thermoelastic gel systems in order to exploit in the stuffed olive pimienta paste...

Peer Reviewed Articles

- Hesarinejad, M.A., Lorenzo, JM., **Rafe, A.** (2021). Influence of gelatin/guar gum mixture on the rheological and textural properties of restructured ricotta cheese. *Carbohydrate Polymer Technologies and Applications* 2, 100162.
- Moghiseh, N., Arianfar, A., Salehi, E.A., Rafe, A. (2021). Effect of inulin/kefiran mixture on the rheological and structural properties of mozzarella cheese. *International Journal of Biological Macromolecules* 191, 1079-1086.
- Biglarian, N., Rafe, A. Shahidi, S.A. (2021). Effect of basil seed gum and κ -carrageenan on the rheological, textural, and structural properties of whipped cream. *Journal of the Science of Food and Agriculture*.
- Mousavi, S.M.A., Rafe, A., & Yeganehzad, S. (2020). Structure-rheology relationships of composite

gels: Alginate and Basil seed gum/guar gum. *Carbohydrate Polymers*. 232, 115809.

- Mousavi, S.M.A., **Rafe, A.**, & Yeganehzad, S. (2019). Textural, mechanical and microstructural properties of restructured pimiento alginate-guar gels. *Journal of texture studies*. 50 (2), 155-164.
- Hasanvand, E., **Rafe, A.** (2019). Development of vanillin/ β -cyclodextrin inclusion microcapsules using flax seed gum-rice bran protein complex coacervates. *International journal of biological macromolecules*. 131, 60-66.
- Mousavi, S.M.A., **Rafe, A.**, & Yeganehzad, S. (2019). Optimization of textural characteristics of restructured pimiento strips by response surface methodology. *Food science & nutrition*. 7 (5), 1595-1605.
- Ghorbani-HasanSarae, A., **Rafe, A.**, Shahidi, S-A., Atashzar, A. (2017). Microstructure and chemorheological behavior of whipped cream as affected by rice bran protein addition. *Food science & nutrition*. 7 (2), 875-881.
- Hasanvand, E., **Rafe, A.** (2018). Characterization of flaxseed gum/rice bran protein complex coacervates. *Food Biophysics*. 13(4): 387-395.
- Hasanvand, E., **Rafe, A.**, Emadzadeh, B. (2018). Phase separation behaviour of flaxseed gum and rice bran protein complex coacervates. *Food Hydrocolloids*. 82, 412-423.
- Hasanvand, E., **Rafe, A.** (2018). Rheological and structural properties of rice bran protein-flaxseed (*Linum usitatissimum* L.) gum complex coacervates. *Food Hydrocolloids*. 83, 296-307.
- Raei, M., **Rafe, A.**, Shahidi, F. (2018). Rheological and structural characteristics of whey protein-pectin complex coacervates. *Journal of Food Engineering*. 228, 25-31.
- Shahsavani Mojarrad, L., **Rafe, A.** (2017). Rheological characteristics of binary composite gels of wheat flour and high amylose corn starch. *Journal of Texture Studies*. 49(3):320-327.
- Kiumarsi, M., **Rafe, A.** & Yeganehzad, S. (2017). Effect of different bulk sweeteners on the dynamic oscillatory and shear rheology of chocolate. *Applied Rheology*. 27: 64123-6432.
- Shahsavani Mojarrad, L., **Rafe, A.**, Sadeghian, A.R., Niazmand, R. (2017). Effects of high amylose corn starch and microbial transglutaminase on the textural and microstructural properties of wheat flour composite gels at high temperatures. *Journal of Texture Studies*. 48:624-632.
- Raei, M., Shahidi, F., Farhoodi, M., Jafari, S.M., **Rafe, A.** (2017). Application of whey protein-pectin nano-complex carriers for loading of lactoferrin. *International journal of biological macromolecules*, 105(Pt 1):281-291.
- Shabani, R., Shahidi, S-A., **Rafe, A.** (2017). Rheological and structural properties of enzyme-induced gelation of milk proteins by ficin and *Polyporus badius*. *Journal of Food Science and Nutrition*. DOI: 10.1002/fsn3.553
- **Rafe, A.**, Sadeghian, A.R. (2017). Stabilization of Tarom and Domesiah cultivars rice bran: Physicochemical, functional and nutritional properties. *Cereal Science*. 74, 64-71.

- **Rafe, A.**, Razavi, S.M.A. (2017). Scaling law, fractal analysis and rheological characteristics of Basil seed gum cross-linked with sodium trimetaphosphate. *Food Hydrocolloids*. 62, 58-65.
- Mirabolhassani, S.E, **Rafe, A.**, Razavi, S.M.A. (2016). The influence of temperature, sucrose and lactose on dilute solution properties of basil seed gum. *International journal of biological macromolecules*, 93: A, 623-629.
- **Rafe, A.**, Sadeghian, A.R., Hoseini-Yazdi, S.Z. (2016). Physicochemical, Functional and Nutritional Characteristics of Stabilized Rice Bran form Tarom Cultivar. *Food Science and Nutrition*. 5(3): 407-414.
- Shahbazi, M., Rajabzadeh, G., **Rafe, A.**, Ettelaie, R. & Ahmadi, S.J. (2016). The physico-mechanical characteristics of blend film of poly (vinyl alcohol) with biodegradable polymers as affected by disorder-order conformational transition. *Food Hydrocolloids*. 60, 393-404.
- Shahbazi, M., Rajabzadeh, G., Ettelaie, R. & **Rafe, A.** (2016). Kinetic study of κ -carrageenan degradation and its impact on mechanical and structural properties of chitosan/ κ -carrageenan film. *Carbohydrate Polymers*. 142(2): 167-176.
- Hashemi, M., Maskooki, A., Faezian, A., & **Rafe, A.** (2016). Flux Improvement of Ultrafiltration Membranes Using Ultrasound and Gas Bubbling. *Desalination and Water Treatment*. 1, 1-10.
- **Rafe, A.** Vahedi, E., Ghorbani Hasan-Sarei, A. (2016). Rheology and microstructure of binary mixed gel of rice bran protein-whey: Effect of heating rate and whey addition. *Journal of the Science of Food and Agriculture*. 96, 3890–3896.
- Sadeghi, F., Hamdami, N., Shahedi, M., & **Rafe, A.** (2016). Numerical modeling of heat and mass transfer during contact baking of flat bread. *Journal of Food Process Engineering*. 39, 345-356.
- Esmaeili, M., **Rafe, A.**, Shahidi, S.A., & Ghorbani Hasan-Saraei, A. (2015). Functional properties of rice bran protein isolate at different pH. *Journal of Cereal Chemistry*. 93(1): 58-63.
- **Rafe, A.** & Razavi, S.M.A. (2015). Effect of Thermal Treatment on Chemical Structure of B-Lactoglobulin and Basil Seed Gum Mixture at Different States by ATR-FTIR Spectroscopy. *International Journal of food properties*. 18, 2652–2664.
- Abdollahi Moghaddam, M.R., **Rafe, A.** & Taghizadeh, M. (2015). Kinetics of color and physical attributes of cookie during deep fat frying by image processing techniques. *Journal of Food Processing and Preservation*. 39, 91-99.
- **Rafe, A.**, Mousavi, S.S. & Shahidi, S.A. (2014). Dynamic rheological behavior of rice bran protein (RBP): Effects of concentration and temperature. *Journal of Cereal Science*. 60, 514-519.
- **Rafe, A.** & Hashemi, M. (2014). The Rheological Modeling and Effect of Temperature on Steady Shear Flow Behavior of *Cordia abyssinica* Gum. *Journal of Food Processing*

Technology. 5, 309.

- **Rafe, A. &** Razavi, S.M.A. (2013). The effect of pH and calcium ion on rheological behaviour of β -lactoglobulin-basil seed gum mixed gels. *International Journal of food science and technology*. 48(9): 1-8.
- **Rafe, A.,** Razavi, S.M.A. & Farhoosh, R. (2013). Rheology and microstructure of basil seed gum and β -lactoglobulin mixed gels. *Food Hydrocolloids*, 30, 134-142.
- **Rafe, A. &** Razavi, S.M.A. (2012). Dynamic viscoelastic study on the gelation of basil seed gum. *International Journal of food science and technology*. 48, 556-563.
- **Rafe, A.,** Razavi, S.M.A. & Khan, S. (2012). Rheological and structural properties of β -lactoglobulin and basil seed gum mixture: Effect of heating rate. *Food research international*, 49, 32-38.
- **Rafe, A.,** Razavi, S.M.A., Haddad Khodaparast, M.H. (2012). Refining of Crude Canola Oil using PSA. *International Journal of Food Engineering Ultrafiltration Membrane*, 8, 2.
- **Rafe, A. &** Razavi, S.M.A. (2009). Water and hexane permeate flux through UF polysulfone amide membrane. *Desalination* 236, 39–45.
- Razavi, S.M.A., **Rafe, A.** & R. Akbari (2007). Terminal velocity of pistachio nut and its kernel as affected by moisture content and variety. *African Journal of Agricultural Research*, 2(12): 663-666.
- Razavi, S.M.A., Emadzadeh, B., **Rafe, A.** & Mohammad Amini, A. (2007). The physical properties of pistachio nut and its kernel as a function of moisture content and variety: Part I. Geometrical properties. *Journal of Food Engineering*. 81, 209–217.
- Razavi, S.M.A., **Rafe, A.,** Mohammad Amini, A. & Mohammadi Moghaddam, T. (2007). The physical properties of pistachio nut and its kernel as a function of moisture content and variety: Part II. Gravimetric properties. *Journal of Food Engineering*. 81, 218–225.
- Razavi, S.M.A., Mohammad Amini, A., **Rafe, A.** & Emadzadeh, B. (2007). The physical properties of pistachio nut and its kernel as a function of moisture content and variety: Part III. Frictional properties. *Journal of Food Engineering*. 81, 226–235.

Conferences / Workshops

1. **Ali Rafe,** Eric Weißenborn and Björn Braunschweig (2020). Structure-property relationships of β -lactoglobulin/ κ -carrageenan mixtures. (Accepted as poster). 22 April, Sweden.
2. Mehdiar Shahbazi, **Rafe, A.** (2014). The structural and rheological characteristics of Pistacia Lentiscus oleoresin (Iranian mastic gum) as a novel native hydrocolloid. (**Oral Presentation**), 1st International Conference on Native Hydrocolloids. 22-23 Oct, 2014, Mashhad, Iran.
3. **Ali Rafe,** Razavi, S.M.A. & Haddad Khodaparast M. H. (2011). Refining of crude canola oil using PSA ultrafiltration membrane. (**Poster and short listed for Oral Presentation**), 11th International Congress on Engineering and Food (ICEF11). 22-26 May, 2011, Athens, Greece.
4. Bolourian. S., **Rafe, A.,** Goli Movahhed, G., Afshari. (2011). Evaluation of production sugar free

- cookies with permitted additives in order to increase the quality and nutrition properties. (**Poster Presentation**), 11th International Congress on Engineering and Food (ICEF11). 22-26 May, 2011, Athens, Greece.
5. Bolourian, S., **Rafe, A.**, Goli Movahhed, G., Afshari. (2011). Evaluation of thermal resistance and efficiency of palm olein and canola oils in frying of potato chips. (**Poster Presentation**), 11th International Congress on Engineering and Food (ICEF11). 22-26 May, 2011, Athens, Greece.
 6. **Rafe, A.**, Hemmati, R. & Bolourian, S. (2011). Modeling of mass transfer and axial dispersion coefficients in RDC columns. (**Poster Presentation**), 13th Iranian National Chemical Engineering Congress & 1st International Regional Chemical and Petroleum Engineering Kermanshah, Iran, 25-28 October, 2010.
 7. Bolourian, S., Goli Movahhed, G., Afshari, M., & **Rafe, A.** (2011). Optimization of frying oil formula in order to increase the oil stability. (**Poster Presentation**), 13th Iranian National Chemical Engineering Congress & 1st International Regional Chemical and Petroleum Engineering Kermanshah, Iran, 25-28 October, 2010.
 8. **Rafe, A.** & Razavi, S.M.A. (2009). Potential application of UF PSA membrane in degumming of crude canola oil. (**Oral Presentation**), the 6th International chemical engineering & exhibition (ICHEC 2009), 16-20 Nov, 2009. Kish Island, Iran.
 9. **Rafe, A.** & Razavi, S.M.A. (2007). The evaluation of UF Potential in degumming, bleaching and refining of crude canola oil. (**Oral Presentation**), 2nd applied-scientific seminar in oilseeds and edible oil, 22 mordad, Tehran, Iran.
 10. Razavi, S.M.A., **Rafe, A.** & Hadad Khodaparast, M.H (2005). Potential of membrane technologies for extraction and purification in oil process industry. (**Oral Presentation**), First scientific seminar of Iran vegetable oil industry, 17July, Tehran, Iran.

Books

- Handbook of Infant Milk formula, 2017. In cooperation with Danone-Nutricia MMP.
- Handbook of Edible nuts, 2016, Research Institute of Food Science and Technology (RIFST).
- Handbook of Edible natural colours, 2012. Iranian Academic Center for Education Culture and Research (ACECR), Mashhad, Iran.

Teaching and other Experiences

- Advanced Food rheology II: Fluid foods (Ph.D. course from Fall semester 2012 till now)
- Principle of food process engineering (Ph.D. course, Fall semester 2013 and 2014)
- Modeling and simulation in food engineering (Ph.D. course from Fall semester 2012 till now)
- Computer systems for food processing (MSc. Course, Fall semester 2013 and 2014)
- Packaging fundamentals (MSc. Course, Fall semester 2013 and 2014)