Preetam Sarkar
Associate Professor
Department of Food Process Engineering
National Institute of Technology Rourkela, India
(ORCID: 0000-0002-6532-8408)

EDUCATION

2014 PhD (Food Sciences), Whistler Center for Carbohydrate Research, Department of Food Science, Purdue University, West Lafayette, IN, USA

2010 MS (Food and Nutritional Sciences), Department of Food Science and Nutrition, California State University-Fresno, CA, USA

2007 B. Tech (Dairy Technology), West Bengal University of Animal and Fishery Sciences, Kolkata, India

ACADEMIC POSITIONS

- July 2024 onwards: Associate Professor at Department of Food Process Engineering, National Institute of Technology Rourkela, India
- October 2014 to June 2024: Assistant Professor at Department of Food Process Engineering, National Institute of Technology Rourkela, India

PROFESSIONAL CERTIFICATES

- Aseptic processing and packaging workshop, Department of Food Science, Purdue University (2013).
- Whistler Center for Carbohydrate Research Short Course, Department of Food Science, Purdue University, 2010, 2011, and 2012.

RESEARCH FOCUS

- Valorization of agricultural and food processing products and byproducts by utilizing them in bioactive food packaging systems.
- Formulation and characterization of food-grade emulsion systems as delivery vehicles for active ingredients such as antimicrobial compounds.
- Formulation and characterization of emulgels/hydrogels/oleogels/bigels from food ingredients for the protection and delivery of antimicrobial compounds and probiotics.

PUBLICATIONS (* Corresponding author):

1. Roy S, Malik B, Chawla R, Bora S, Ghosh T, Santhosh R, Thakur R, **Sarkar P**. 2024. Biocompatible film based on protein/polysaccharides combination for food packaging applications: A comprehensive review. **International Journal of Biological Macromolecules (Elsevier)**. DOI: https://doi.org/10.1016/j.ijbiomac.2024.134658
2. Patra A, Thakur R, Prasath VA, **Sarkar P**. 2024. Extraction of Bioactive Compound from Bael (*Aegle marmelos*) Leaves: A Comparative Analysis of Ultrasound and Microwave-Assisted Methods. **Journal of Food Process Engineering.** DOI: 10.1111/jfpe.14723
3. Pipaliya R, Basaiawmoit B, Sakure AA, Maurya R, Bishnoi M, Kondepudi KK, Padhi S, Rai AK, Liu Z, **Sarkar P**, Hati S. 2024. Production and characterization of anti-hypertensive and anti-diabetic peptides from fermented sheep milk with anti-inflammatory activity: in vitro and molecular docking studies. **Journal of The Science of Food and Agriculture** (**John, Wiley, and Sons**). DOI: 10.1002/jsfa.13617
4. Thakur R, Wickramarachchi S, Pal K, **Sarkar P***. 2024. Gelatin/chitosan-lactate/curcuma hydroethanolic extract-based antimicrobial films: Preparation, characterization, and application on chicken meat. **Food Hydrocolloids (Elsevier)**. DOI: https://doi.org/10.1016/j.foodhyd.2024.110075
5. Pipaliya R, Basaiawmoit B, Sakure A, Maurya R, Bishnoi M, Kondepudi KK, Singh BP, Paul S, Liu Z, **Sarkar P**, Patel A, Hati S. 2024. Peptidomics-based identification of Antihypertensive and Antidiabetic Peptides from sheep milk fermented using *Limosilactobacillus fermentum* KGL4 MTCC 25515 with Anti-inflammatory activity: In-silico, In-vitro, and Molecular docking studies. **Frontiers in Chemistry**. DOI: 10.3389/fchem.2024.1389846
6. Patra A, Prasath VA, Shende AS, Thakur R, Deep B, Madhumathi G, **Sarkar P**. 2024. Effect of pin-to-plate atmospheric cold plasma on technological and nutritional functionality of horse gram (*Macrotyloma uniflorum*) flour. **Journal of Food Process Engineering** (**John, Wiley, and Sons**). DOI: http://doi.org/10.1111/jfpe.14571
7. Ahmed J, Santhosh R, Thakur R and **Sarkar P**. 2024. Starch-based edible packaging: Rheological, thermal, mechanical, microstructural, and barrier properties – A review, **Sustainable Food Technology** (RSC), DOI: 10.1039/D3FB00211J
8. Santhosh R, **Sarkar P***. 2024. Fabrication of jamun seed starch/tamarind kernel xyloglucan bio-nanocomposite films incorporated with chitosan nanoparticles and their application on sapota (*Manilkara zapota*) fruits. **International Journal of Biological Macromolecules,** pp 129625, **(Elsevier)** DOI: https://doi.org/10.1016/j.ijbiomac.2024.129625
9. Santhosh R, D. Madhubabu, R. Thakur, D. Nath, M. Hoque, K. Gaikwad, J. Ahmed, and **Sarkar P***. 2024. Effect of atmospheric cold plasma treatment on structural, thermal, and mechanical properties of pea protein isolate edible films. **Sustainable Chemistry and Pharmacy**, pp.101398, **(Elsevier)**, DOI: 10.1016/j.scp.2023.101398
10. Roy S, Chawla R, R Santhosh, Thakur R, **Sarkar P**, Zhang W. 2023. Agar-based edible films and food packaging application: A comprehensive review. **Trends in Food Science & Technology (Elsevier)**. DOI: https://doi.org/10.1016/j.tifs.2023.104198
11. Thakur R, R Santhosh, Kumar Y, Suryavanshi VR, Singhi H, D Madhubabu, Wickramarachchi S, Pal K, **Sarkar P***. 2023. Characteristics and application of animal

byproduct-based films and coatings in the packaging of food products. **Trends in Food Science & Technology (Elsevier)**. DOI: https://doi.org/10.1016/j.tifs.2023.104143.

12. Ahmed J, Santhosh R, Thakur R, Mulla M, **Sarkar P**. 2023. Thermo-mechanical, rheological, microstructural, and barrier properties of gum-based edible packaging: A review. **Food Packaging and Shelf Life (Elsevier).** DOI: https://doi.org/10.1016/j.fpsl.2023.101117
13. Kumar Y, Santhosh R, Hoque M, Nath D, Thakur R, Madhubabu D, Suryavanshi VR, Singhi H, Ahmed J, **Sarkar P***. 2023. Development and characterization of defatted pumpkin seed meal and halloysite nanoclay composite films for food packaging. **Packaging Technology and Science** (**John, Wiley, and Sons**). DOI: https://doi.org/10.1002/pts.2751
14. Singhi H, Kumar L, **Sarkar P**, Gaikwad K. 2023. Chitosan based antioxidant biofilm with waste Citrus limetta pomace extract and impregnated with halloysite nanotubes for food packaging. **Journal of Food Measurement and Characterization (Springer).** DOI: https://doi.org/10.1007/s11694-023-01825-8
15. Dissanayake T, Aluko A, Mekonen T, **Sarkar P**, Bandara N. 2023. Improving material properties of canola protein-based nanocomposite films by hydrophobically modified nanocrystalline cellulose. **Food Packaging and Shelf Life** (**Elsevier**). DOI: doi.org/10.1016/j.fpsl.2022.101018
16. Sena B, Dhal S, Sahu D, **Sarkar P**, Mohanty B, Jarzębski M, Wieruszewski M, Behera B, Pal K. 2022. Variations in Microstructural and Physicochemical Properties of Soy wax/Soybean Oil–Derived Oleogels Using Soy lecithin. **Polymers (MDPI).** DOI: doi.org/10.3390/polym14193928
17. Santhosh R, **Sarkar P***. 2022. Jackfruit seed starch/tamarind kernel xyloglucan/zinc oxide nanoparticles-based composite films: Preparation, characterization, and application on tomato (*Solanum lycopersicum*) fruits. **Food Hydrocolloids (Elsevier)**. DOI: doi.org/10.1016/j.foodhyd.2022.107917
18. Nath D, Santhosh R, Ahmed J, **Sarkar P***. 2022. Optical, mechanical, structural and antimicrobial properties of tamarind kernel powder, halloysite and cinnamaldehyde nanocomposite films. **Journal of Food Process Engineering** (**John, Wiley, and Sons**). DOI: 10.1111/jfpe.14065
19. Hoque M, **Sarkar P***, Ahmed J. 2022. Preparation and characterization of tamarind kernel powder/ZnO nanoparticle-based food packaging films. **Industrial Crops and Products** (**Elsevier**). DOI: https://doi.org/10.1016/j.indcrop.2022.114670
20. Chakraborty P., Nath D, Hoque M, **Sarkar P**, Hati S, Mishra BK. 2022. Biopolymer-based antimicrobial coatings for aquatic food products: A Review. **Journal of Food Processing and Preservation** (**John, Wiley & Sons**). DOI: https://doi.org/10.1111/jfpp.16465
21. Nath D, Santhosh R, Pal K, **Sarkar P***. 2022. Nanoclay-based active food packaging systems: A review. **Food Packaging and Shelf Life** (**Elsevier**). DOI: https://doi.org/10.1016/j.fpsl.2021.100803
22. Sahu D, Bharti D, Kim D, **Sarkar P**, Pal K. 2021. Variations in Microstructural and Physicochemical Properties of Candelilla Wax/Rice Bran Oil–Derived Oleogels Using Sunflower Lecithin and Soya Lecithin. **Gels.** (**MDPI**). DOI: https://doi.org/10.3390/gels7040226
23. Santhosh R, Nath D, **Sarkar P***. 2021. Novel food packaging materials including plant-based byproducts: A review. **Trends in Food Science & Technology** (**Elsevier**). DOI: https://doi.org/10.1016/j.tifs.2021.10.013

24. Pal K, Bharti B, **Sarkar P**, Anis A, Kim D, Chałas R, Maksymiuk P, Stachurski P, Jarzębski M. 2021. Selected applications of chitosan composites**. International Journal of Molecular Sciences** (**MDPI**). DOI: https://doi.org/10.3390/ijms222010968
25. Pal K, **Sarkar P**, Anis A, Wiszumirska K, Jarzębski M. 2021. Polysaccharide-based nanocomposites for food packaging applications. **Materials (MDPI)**. DOI: https://doi.org/10.3390/ma14195549
26. Qureshi D, Sahoo A, Mohanty B, Anis A, Kulikouskaya V, Hileuskaya K, Agabekov V, **Sarkar P**, Ray SS, Maji S, Pal K. 2021. Fabrication and Characterization of Poly (vinyl alcohol) and Chitosan Oligosaccharide-Based Blend Films. **Gels (MDPI).** DOI: https://doi.org/10.3390/gels7020055
27. Quereshi D, Pattanaik S, Mohanty B, Anis A, Kulikouskaya V, Hileuskaya K, Agabekov V, **Sarkar P**, Maji S, Pal K. 2021. Preparation of novel poly (vinyl alcohol)/chitosan lactate-based phase-separated composite films for UV-shielding and drug delivery applications-**Polymer Bulletin** (**Springer**). DOI: https://doi.org/10.1007/s00289-021-03653-6
28. Quereshi D, Choudhary B, Mohanty B, **Sarkar P**, Anis A, Banerjee I, Maji S, Pal K. 2020. Graphene Oxide Increases Corneal Permeation of Ciprofloxacin Hydrochloride from Oleogels: A Study with Cocoa Butter-Based Oleogels-**Gels** (**MDPI**). DOI: /doi.org/10.3390/gels6040043
29. Agarwal S, Hoque M, Bandara N, Pal K, **Sarkar P***. 2020. Synthesis and characterization of tamarind kernel powder-based antimicrobial edible films loaded with geraniol-**Food Packaging and Shelf Life** (**Elsevier**). DOI: 10.1016/j.fpsl.2020.100562
30. Hasda AM, Rathnam S, Quereshi D, Prasad G, Mohanty B, Banerjee I, Shaikh H, Arfat A, **Sarkar P**, Pal K. 2020. Graphene oxide reinforced nanocomposite oleogels improves corneal permeation of drugs-**Journal of Drug Delivery Science and Technology (Elsevier)**. DOI: doi.org/10.1016/j.jddst.2020.102024
31. Rawooth M, Quereshi D, Hoque M, Prasad G, Mohanty B, Alam M, Anis A, **Sarkar P**, Pal K. 2020. Synthesis and characterization of novel tamarind gum and rice bran oil-based emulgels for the ocular delivery of antibiotics- **International Journal of Biological Macromolecules (Elsevier)**. DOI: 10.1016/j.ijbiomac.2020.07.231
32. Mohanty B, Pal K, Quereshi D, Nayak S, Rathnam S, Banerjee I, Arfat A, Barik C, **Sarkar P**, Rout SK. 2020. Palmitic acid and safflower oil based novel oleogels for ocular delivery of voriconazole-**European Journal of Lipid Science and Technology (John, Wiley, & Sons),** DOI: 10.1002/ejlt.201900288
33. Syed I, Banerjee P, **Sarkar P***. 2020. Oil-in-water emulsions of geraniol and carvacrol improve the antibacterial activity of these compounds on raw goat meat surface during extended storage at 4 °C-**Food Control,** 107, 106757 (**Elsevier**), DOI: 10.1016/j.foodcont.2019.106757
34. Dhumal CV, Pal K, **Sarkar P***. 2019. Synthesis, characterization, and antimicrobial efficacy of composite films from guar gum/sago starch/whey protein isolate loaded with carvacrol, citral and carvacrol-citral mixture-**Journal of Materials Science: Materials in Medicine** 30(10): 117 (**Springer**)**, DOI:** 10.1007/s10856-019-6317-8
35. Dhumal CV, Ahmed J, Bandara N, **Sarkar P*.** 2019. Improvement of antimicrobial activity of sago starch/guar gum bi-phasic edible films by incorporating carvacrol and citral. **Food Packaging and Shelf Life,** 21, 100380 (**Elsevier**), DOI:

10.1016/j.fpsl.2019.100380

36. Quereshi D, Dhal S, Hanh Nguyen TT, Mohanty B, Anis A, Shaikh H, Kim D, **Sarkar P***, Pal K. 2019. Neem seed oil and gum arabic-based oil-in-water emulsions as potential ocular drug delivery system- **Journal of Dispersion Science and Technology** (**Taylor and Francis**). DOI: 10.1080/01932691.2019.1638272
37. Satapathy M, Quereshi D, Hanh Nguyen TT, Mohanty B, Anis A, Maji S, Kim D, **Sarkar P***, Pal K. 2019. Preparation and characterization of cocoa butter and whey protein isolate based emulgels for pharmaceutical and probiotics delivery applications-**Journal of Dispersion Science and Technology** (**Taylor and Francis**). DOI: 10.1080/01932691.2019.1583577
38. Dhumal CV, Pal K, **Sarkar P***. 2019. Characterization of tri-phasic edible films from chitosan, guar gum, and whey protein isolate loaded with plant-based antimicrobial compounds-**Polymer-Plastics Technology and Materials**, 58(3), 255-269 (**Taylor & Francis**). DOI: 10.1080/03602559.2018.1466179
39. Panigrahi S, Syed I, Sivapratha S, **Sarkar P***. 2019. Nanoencapsulation strategies for lipid-soluble vitamins-**Chemical Papers**, 73(1), 1-16 (**Springer**). DOI: 10.1007/s11696-018-0559-7
40. Dhumal CV, **Sarkar P***. 2018. Composite edible films and coatings from food-grade biopolymers-**Journal of Food Science and Technology**, 55(11), 4369–4383 (**Springer**). DOI: 10.1007/s13197-018-3402-9
41. Syed I, **Sarkar P***. 2018. Ultrasonication-assisted formation and characterization of geraniol and carvacrol-loaded emulsions for enhanced antimicrobial activity against food-borne pathogens-**Chemical Papers**, 72(10), 2659–2672 (**Springer**). DOI: 10.1007/s11696-018-0501-z
42. SR Paul, D Qureshi, Y Yogalakshmi, S Nayak, V Singh, I Syed, **Sarkar P**, Pal K. 2018. Development of Bigels Based on Stearic Acid–Rice Bran Oil Oleogels and Tamarind Gum Hydrogels for Controlled Delivery Applications. **Journal of Surfactants and Detergents**, 21(1), 17-29 (**John, Wiley & Sons**). DOI: 10.1002/jsde.12022
43. V Sharma, P Patnaik, K Senthilguru, SK Nayak, I Syed, VK Singh, **Sarkar P**, Thakur G, Pal K. 2018. Preparation and characterization of novel tamarind gum-based hydrogels for antimicrobial drug delivery applications. **Chemical Papers**, 72(8), 2101–2113 (**Springer**). DOI: 10.1007/s11696-018-0414-x
44. Sivapratha S, **Sarkar P***. 2018. Multiple layers and conjugate materials for food emulsion stabilization. **Critical Reviews in Food Science and Nutrition**, 58(6), 877-892 (**Taylor and Francis**). DOI: 10.1080/10408398.2016.1227765
45. Sivapratha S, **Sarkar P***. 2018. Oxidative stability and effect of stress factors on flaxseed oil-in-water emulsions stabilized by sodium caseinate-sodium alginate-chitosan interfacial membrane. **Chemical Papers**, 72(1), 1-14, (**Springer**). DOI: 10.1007/s11696-017-0252-2
46. Lohith Kumar DH, **Sarkar P***. 2018. Encapsulation of bioactive compounds using nanoemulsions. **Environmental Chemistry Letters**, 16(1), 59-70 (**Springer**). DOI: 10.1007/s10311-017-0663-x
47. **Sarkar P***, Choudhary R, Panigrahi S, Syed I, Sivapratha S, Dhumal CV. 2017. Nano-inspired systems in food technology and packaging. **Environmental Chemistry Letters**, 15(4), 607-622 (**Springer**). DOI: 10.1007/s10311-017-0649-8

48. **Sarkar P**, Bhunia AK, Yao Y. 2017. Impact of starch-based emulsions on the antibacterial efficacies of nisin and thymol in cantaloupe juice. **Food Chemistry**, 217, 155-162, (**Elsevier**). DOI: 10.1016/j.foodchem.2016.08.071
49. **Sarkar P,** Bhunia AK, Yao Y. 2016. Emulsion Stabilized with Starch Octenyl Succinate Prolongs Nisin Activity against Listeria Monocytogenes in a Cantaloupe Juice Model. **Journal of Food Science**, 81(12), M2982-2987 (**John, Wiley & Sons**). DOI: 10.1111/1750-3841.13550
50. Yezhi Y, **Sarkar P**, Bhunia AK, Yao Y. 2016. Delivery systems for antimicrobial compounds to foods. **Trends in Food Science and Technology**, 57A, 165-177 (**Elsevier**). DOI: 10.1016/j.tifs.2016.09.013
51. **Sarkar P**, Bhunia AK, Yao Y. 2016. Nisin adsorption in colloidal systems formed with phytoglycogen octenyl succinate. **Food Biophysics**, 11(4), 311-318 (**Springer**). DOI: 10.1007/s11483-016-9436-5
52. **Sarkar P**, Kumar L, Dhumal C, Panigrahi SS, Choudhary R. 2015. Traditional and Ayurvedic Foods of Indian Origin. **Journal of Ethnic Foods**, 2(3), 97-109 (**Elsevier**). DOI: 10.1016/j.jef.2015.08.003

Book chapters

1. Santhosh R, Hoque M, Syed I, **Sarkar P**. 2021. Polysaccharide-oil complexes as edible films, In: Food, Medical, and Environmental Applications of Polysaccharides (Elsevier).
2. Hoque M, Gupta S, Santhosh R, Syed I, **Sarkar P**. 2021. Biopolymer-based edible films and coatings for food application, In: Food, Medical, and Environmental Applications of Polysaccharides (Elsevier).
3. Hoque M, Agarwal S, Gupta S, Garg S, Syed I, Rupesh A, Mohapatra N, Bose S, **Sarkar P**. 2020. Lipid nanostructures in food applications, In: Innovations in Food Nanotechnology (Elsevier).
4. Agarwal S, Hoque M, Mohapatra N, Syed I, Dhumal CV, Bose S, Biswas PK, Kar P, Bishoyi N, **Sarkar P**. 2020. Oil Entrapped Films, In: Biopolymer-Based Formulations-Biomedical and Food Applications (Elsevier).
5. Qureshi D, Subhadarshini S, Nayak SS, Kim D, **Sarkar P**, Banerjee I, Pal K. 2019. Alginate and its Applications in Tissue Engineering, In: Alginates: Versatile polymers in Biomedical applications and Therapeutics (CRC Press).
6. Syed, I., Garg, S., & **Sarkar, P**. 2018. Entrapment of Bioactive Compounds using Hydrogels, In: Polymeric Gels: Characterization, Properties and Biomedical Applications 1st Edition (Woodhead Publishing).
7. **Sarkar P**, Panigrahi SS, Roy E, Banerjee P. 2017. Nanosensors in food safety, In: Portable Biosensors and Point-of-Care Systems (IET Publications).
8. Lohith DH, **Sarkar P**. 2017. Nanoemulsion as a nutrient delivery system in food, In Sustainable Agriculture Reviews (Nanoscience in food and agriculture 5), Springer.
9. Lohith DH, **Sarkar P**. 2016. Potential of nanotechnology in dairy processing, In Sustainable Biological Systems for Agriculture Emerging Issues in Nanotechnology, Biofertilizers, Wastewater, and Farm Machines, Apple Academic Press (CRC Press).
10. **Sarkar P**, Irshaan S, Sivapratha S, Choudhary R. 2016. Nanotechnology in food processing and packaging, In Sustainable Agriculture Reviews (Nanoscience in food and

agriculture 1), Springer.

11. Singh A, **Sarkar P**, Janaswamy S, Yao Y, Bhunia A. 2014. Encapsulation and Delivery of Antimicrobial Compounds. In Novel Food Preservation and Microbial Assessment Techniques, CRC Press.
12. **Sarkar P**, Choudhary R. 2014. Ultraviolet Imaging. In Imaging with Electromagnetic Spectrum: Applications in Food and Agriculture, Springer Berlin Heidelberg.

RESEARCH FUNDING

1. Value addition to agricultural processing by-products: Improving functionality of renewable polymer-based active food packaging materials by reinforcing with chemically tailored nanomaterials- Scheme for Promotion of Academic and Research Collaboration (SPARC) (Value: INR 45,73,740, August 2023-August 2025) **Role: PI [In collaboration with University of Manitoba and University of Waterloo, Canada]**
2. Cinnamon oil-based gelatin-chitosan composite films for active food packaging applications-Department of Science and Technology (DST), (Value: INR 24,56,082, July 2021 to January 2024) **Role: PI [In collaboration with University of Kelaniya, Sri Lanka]**
3. Designing emulsion-based antimicrobial delivery vehicles for prolonged protection of fresh-cut fruit systems against food-borne pathogens using papaya as model-Science and Engineering Research Board (SERB), (Value: INR 18,05,000, December 2015 to December 2018). **Role: PI**
4. Fabrication of polysaccharide-based protective nano-carriers for enhancing the microbial safety of fresh-cut Indian fruits against *Listeria* spp., *Salmonella* spp., and Coliforms-NIT Rourkela SEED grant (Value: INR 3,50,000, 2016). **Role: PI**
5. Development of a composite optical device employing an artificial intelligence algorithm for evaluating the shelf - life of raw agricultural products-Department of Science and Technology (DST), (Value: INR 26,30,154, January 2023 to January 2025) **Role: CO-PI**
6. Development of cost-effective microwave infrared-UV assisted continuous sterilization process for spices-Ministry of Food Processing Industries-SERB, (Value: INR 53,62,786.00, September 2015 to September 2018). **Role: CO-PI**
7. Designing a low-cost real-time food colour monitoring systems-Department of Science and Technology, (Value: INR 3832872.00). **Role: CO-PI**

GRADUATE STUDENT MENTEES

Doctoral

1. **Chanda Vilas Dhumal**: Formulation and characterization of biopolymer-based edible films with antimicrobial functionality (Graduated in 2020).
2. **Irshaan Syed**: Polysaccharide-based oil-in-water emulsion systems for the prolonged efficacy of hydrophobic antimicrobial compounds (Graduated in 2022).
3. **Santhosh R**: Development and characterization of biodegradable films and coatings from plant byproducts (Current status: Ongoing).
4. **Rahul Thakur**: Bioactive food packaging from animal byproducts (Current status: Ongoing).
5. **Souvik Giri**: Xyloglucan-based next generation food packaging systems.

Masters

1. **Lohith Kumar DH**: Designing and Characterization of Emulsion-Based Matrices for The Encapsulation of Bioactive Oils Using Polysaccharides (Graduated).
2. **Sivapratha Sivabalan**: Development of a Multilayer Emulsion System for The Protection of Polyunsaturated Fatty Acids in Flaxseed Oil (Graduated).
3. **Monjurul Hoque**: Synthesis and Characterization of Nanocomposite Food Packaging Films from Tamarind Kernel Powder and Zinc Oxide Nanoparticles (Graduated).
4. **Debarshi Nath**: Synthesis and Characterization of Tamarind Kernel Powder-Based Food Packaging Films Incorporated with Halloysite Nanoclay and trans-Cinnamaldehyde (Graduated).
5. **Yaghuvendra Kumar**: Fabrication and characterization of food packaging films from defatted pumpkin seed meal and halloysite (Graduated).
6. **Dasarigandla Madhu Babu**: Impact of cold plasma on the material properties of pea protein isolate-based packaging films (Graduated).
7. **Bindu Sravanthi**: Novel food packaging materials from tamarind seed polysaccharides modified with cellulose nanoparticles.

TEACHING

- Food chemistry (3 credits)
- Food chemistry lab (2 credits)
- Food microbiology and safety (3 credits)
- Food microbiology and safety lab (2 credits)
- Food ingredients and additives (3 credits)
- Food analysis and quality control (3 credits)
- Advanced food testing lab (2 credits)
- Functional Foods and Nutraceuticals (3 credits)
- Dairy process engineering (3 credits)
- Dairy process engineering lab (2 credits)

SCIENTIFIC PRESENTATIONS

1. Santhosh R, **Sarkar P**. 2022. Fabrication of jackfruit seed starch/tamarind kernel xyloglucan/zinc oxide nanoparticles-based biodegradable films for food packaging applications. 21st IUFOST World Congress of Food Science and Technology, Singapore [Poster presentation].
2. Syed I, Banerjee P, **Sarkar P.** 2019. Antimicrobial Effect of Citral-Based Emulsions against *Escherichia coli* MTCC 443 on Fresh-Cut Papaya Surface. International Association for Food Protection (IAFP) Annual Meeting, Louisville, KY, USA [Poster presentation].
3. CV Dhumal, Bandara N, **Sarkar P.** 2019. Carvacrol and citral-loaded sago starch/guar gum bi-phasic edible films shows improved antimicrobial efficacy. Institute of Food Technologists (IFT) Annual Meeting and Food Expo, New Orleans, LA, USA [Poster presentation].
4. CV Dhumal, **Sarkar P.** 2018. Sago starch and guar gum composite films: optimization of physical and optical properties using Box-Behnken design and its characterization. 19TH IUFOST World Congress of Food Science and Technology, India [Poster presentation].
5. Irshaan Syed, **Sarkar P.** 2018. Influence of ultrasonication and processing parameters on

stability of carvacrol loaded emulsions. 19TH IUFOST World Congress of Food Science and Technology, India [Poster presentation].

6. Irshaan Syed, **Sarkar P.** 2018. Impact of carvacrol and cinnamaldehyde loaded oil-in-water emulsions stabilized with starch Octenyl succinate on foodborne pathogens. 19TH IUFOST World Congress of Food Science and Technology, India [Poster presentation].
7. CV Dhumal, **Sarkar P.** 2017. Formulation of antimicrobial-loaded edible films from polysaccharides and proteins. 2nd Innovations in Food Packaging, Shelf Life and Food Safety Conference, Munich, Germany [Poster presentation].
8. Irshaan Syed, **Sarkar P.** 2017. Impact of antimicrobial-loaded emulsion system stabilized with gum arabic on food borne pathogens. 2nd Innovations in Food Packaging, Shelf Life and Food Safety Conference, Munich, Germany [Poster presentation].
9. Sivapratha S, **Sarkar P**. 2016. Comparison of Emulsions Stabilized by Anionic and Cationic Biopolymers-at Asian Food Safety and Security Association (AFSA) Conference on "Food Safety and Food Security", 15th-17th September [Poster presentation].
10. Irshaan Syed, **Sarkar P**. 2016. Effect of Ultrasonication Parameters on the Stability of Oil-in-Water Emulsions. Asian Food Safety and Security Association (AFSA) Conference on "Food Safety and Food Security" 15th-17th September [Poster presentation].
11. Irshaan Syed, **Sarkar P**. 2016. Influence of pH on Emulsification Behavior of Gum Arabic Oil-in-Water Emulsions. International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE), IIT Kharagpur, 27-30 December [Poster presentation].
12. CV Dhumal, **Sarkar P**. 2016. Formulation of edible films from whey proteins. International Conference on Emerging Technologies in Agricultural and Food Engineering (ETAE), IIT Kharagpur, 27-30 December [Poster presentation].
13. Lohith Kumar DH, **Sarkar P**. 2015. Influence of biopolymer concentration on physical and rheological properties of flaxseed oil-in-water emulsion-at XXIV Indian Convention of Food Scientists and Technologists, India [Poster presentation].
14. Delivery systems and functional materials in food science, 2014- at Department of Chemistry, National Institute of Technology Rourkela, India [Oral presentation].
15. **Sarkar P**, Yao Y. 2013. Starch octenyl succinate stabilized emulsion for the protection of nisin activity in a cantaloupe juice food model-at the IFT Annual Meeting and Food Expo, Chicago IL [Poster presentation].
16. **Sarkar P**, Yao Y. 2013. Comparative study on nisin adsorption to PG-OS nanoparticles in aqueous and emulsion based systems- at the Whistler Center for Carbohydrate Research Meeting, Purdue University [Poster presentation].
17. **Sarkar P**, Bhunia A, Yao Y. 2012. Adsorption of nisin with phytoglycogen octenyl succinate- at the IFT Annual Meeting and Food Expo, Las Vegas, NV.
18. **Sarkar P**, Yao Y. 2012. Study on the interaction between phytoglycogen octenyl succinate nanoparticles and nisin- at the Whistler Center for Carbohydrate Research Meeting, Purdue University [Poster presentation].
19. **Sarkar P**, Yao Y. 2011. Quantification of nisin-A using liquid chromatography-mass spectrometry for PG-OS nanoparticle mediated controlled delivery- at the Whistler Center for Carbohydrate Research Meeting, Purdue University [Poster presentation].
20. **Sarkar P**, Choudhury G. 2010. Peach Pomace Utilization using Twin Screw Extrusion Processing”- at the IFT Annual Meeting and Food Expo, Chicago, IL [Poster presentation].
21. **Sarkar P**, Choudhury G. 2010. “Extrusion Processing of Fruit Pomace”- at the Central

California Research Symposium, CSU-Fresno [Poster presentation].

22. **Sarkar P**, Choudhury G. 2010. "Extrusion of Fruit Processing Co-products"- at the Graduate Research and Creative Activities Symposium, CSU-Fresno [Poster presentation].
23. Choudhary R, **Sarkar P**. 2009. "Correlation of Composition and Physical Properties on Texture of Market *Rasogolla*"- at the IFT Annual Meeting and Food Expo, Anaheim, CA [Poster presentation].
24. Choudhary R, **Sarkar P**. 2007. "Correlation between Chemistry, Rheology and Microstructure of *Rasogolla* (an acid coagulated Indian dairy product)"- at the International Conference on Traditional Dairy Foods, National Dairy Research Institute, Karnal, India [Poster presentation].

ACADEMIC AWARDS AND HONORS

1. Full membership of Sigma Xi, The Scientific Research Honor Society (2023).
2. 3rd position winner of Carbohydrate Division poster competition-IFT Annual Meeting and Food Expo 2013, Chicago.
3. Division finalist in Carbohydrate Division poster competition-IFT Annual Meeting and Food Expo 2012, Las Vegas.
4. Graduate Research Assistantship from Purdue University for pursuing PhD program in Food Technology.
5. MS thesis nominated for Outstanding Thesis Award from the Department of Food Science and Nutrition-CSU Fresno.
6. Graduate Student Research and Creative Activities Merit Award from the Division of Graduate Studies, California State University-Fresno for pursuing MS thesis research.
7. Travel Grant Scholarship from the Division of Graduate Studies, California State University-Fresno for presenting MS research at the 2010 IFT Annual Meeting and Food Expo at Chicago, IL.
8. Student Monitorship Award from IFT for attending Annual Meeting and Food Expo at Anaheim, 2009.
9. Tuition Waiver Scholarship from the International Programs and the Jordan College of Agricultural Sciences and Technology, California State University-Fresno.
10. Graduate Research Assistantship from California State University for pursuing MS program in Food and Nutritional Sciences.
11. University Merit Scholarship from WBUAFS-India during BTech program.

PROFESSIONAL MEMBERSHIP

- Institute of Food Technologists
- Sigma Xi