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Nanoscale Organisation
and Dynamics Group

Studies on Gelation Mechanisms of Food Gels

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Abstract

Gel is a state of matter that consists of a polymer network and a solvent, and gel materials are formed from colloidal polysaccharides, proteins, and synthesized polymers. Because of their structure, gels are used in various applications, i.e. in the food, biomedical, and chemical industries. Nowadays, food gels are widely introduced into industrial food products and their behaviours are directly related to the release of flavours and textural properties. This seminar will outline some studies on the widely used food gels based on two higher polysaccharides extracted from seaweed: carrageenan and agarose. These food hydrocolloids are widely used as food additives, i.e. thickeners and stabilizers. The gelation behaviours of κ-carrageenan (KC) and ι-carrageenan (IC) and possible phase separation of KC/IC gel mixtures are being studied by NMR, rheological measurements and particle tracking techniques. Gelation and aging behaviours of agarose gels are being studied by NMR and electrophoresis. Understanding the gelation mechanisms provides the means of how to manipulate these food gels for better usage in the food industry.

Profile

Faith Bernadette Descallar is a 1st year PhD student at the Tokyo University of Marine Science and Technology majoring in Applied Marine Biosciences. She graduated with a Masters in Marine Science in 2016 from the same university. She is focusing on the physicochemical properties of food gels extracted from seaweeds, i.e. carrageenan and agarose. Currently, she is studying the aging mechanism of agarose gels using NMR, electrophoresis and water permeability techniques. Her supervisor, Prof. Shingo Matsukawa has been collaborating with Prof. William Price. She is currently an intern with the Nanoscale Organisation and Dynamics Research Group at WSU.

Staff and students at all levels are welcome to attend.

Venue and Time:
Thursday 8 March at 2 pm at the Campbelltown Campus in CA-30.G.213.

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