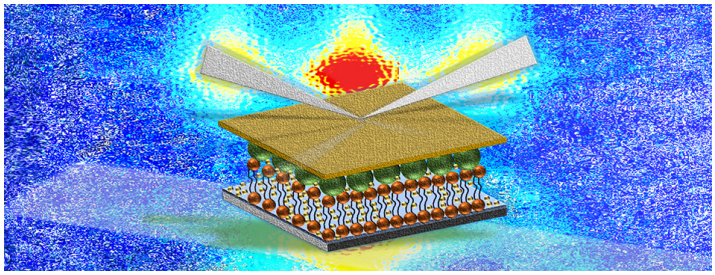

Beitrag ID: **55** Typ: **Talk**

Polysaccharide-based nano-/micro-gels for the food sector

Dienstag, 8. Oktober 2024 17:15 (15 Minuten)

Polysaccharides, as major components of natural origin, have garnered extensive attention and utilization across diverse fields, including the nutritional manufacturing sector. Due to their advantageous properties such as safety, stability, biocompatibility, biodegradability and nontoxicity, polysaccharide-based complex systems have a significant potential in the fields of cosmetics, pharmaceutics and food engineering. Microencapsulation of active ingredients such as flavors, antioxidants, vitamins, and lipids into biopolymer nano-/micro-gels offers greater bioavailability, effectiveness, lower toxicity, and more lasting stability than conventional formulations. Therefore, understanding the physicochemical properties of these micro- and nanogels, as well as their encapsulation and release ability under various conditions, is crucial for optimizing their use in the food sector.

In our study we present k-carrageenan and λ-carrageenan-based nanogels obtained as a result of electrostatic coassembly with BSA protein as macro-ionic crosslinking agent. Such systems are of interest as carriers for bioactive ingredients, therefore we compared the microstructure of unloaded and VD3-loaded gels under various pH and temperature conditions applying scattering (LS, SAXS, SANS) and spectroscopic (FTIR, CD, Fluorimetry) techniques.

Hauptautor: Dr. FANOVA, Anastasiia (Juelich Forschungszentrum)

Co-Autoren: Dr. PAPAGIANNOPOULOS, Aristeidis (Theoretical and Physical Chemistry Institute, NHRF); RADULESCU, Aurel (Forschungszentrum Juelich GmbH); Dr. IWASE, Hiroki (Neutron Science and Technology Center, CROSS); ITO, Kanae (SPring-8, Japan Synchrotron Radiation Research Institute); SOTIROPOLOUS, Konstantinos (HYAD MIKE); Dr. MOTOKAWA, Ryuhei (Materials Sciences Research Center, Japan Atomic Energy Agency)

Vortragende(r): Dr. FANOVA, Anastasiia (Juelich Forschungszentrum)

Sitzung Einordnung: Industrial applications & Emulsions

Track Klassifizierung: Emulsions