

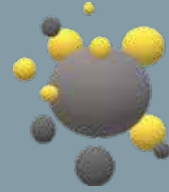


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INTERNATIONAL
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19TH

**FOOD
COLLOIDS
CONFERENCE**

**USING COLLOID SCIENCE
TO FIND NEW
SUSTAINABLE SOLUTIONS
IN FOOD**

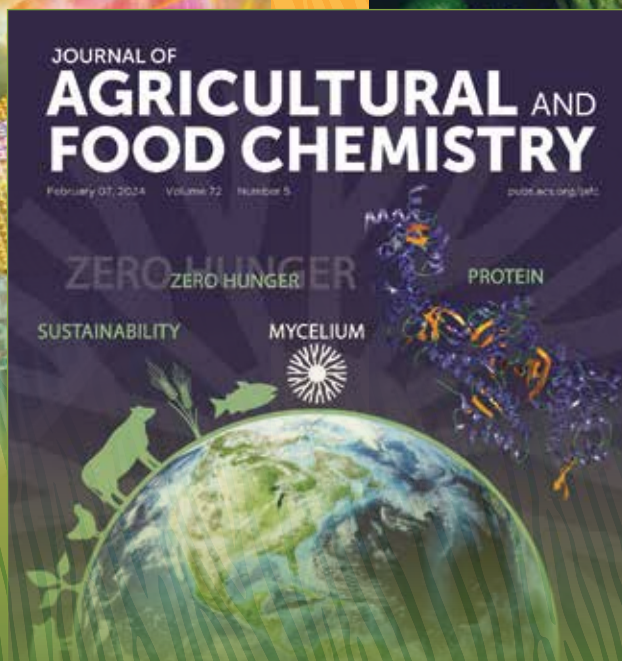
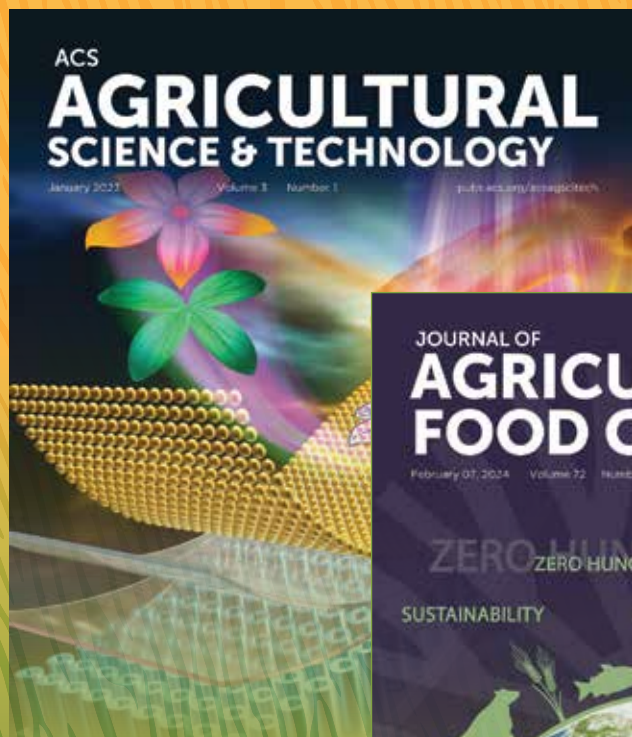
**14 - 18
April 2024**

**Thessaloniki
Concert Hall**

www.foodcolloids2024.org



**SCIENTIFIC
PROGRAMME**



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WELCOME MESSAGE BY THE CONFERENCE CHAIR

Dear Colleagues,



On behalf of the local organizing committee, it is my honor and pleasure to welcome more than 300 scientists from all over the world to the 19th Food Colloids Conference in Thessaloniki, Greece from 14th to 18th April, 2024.

The conference aims to bring together international experts from academia and industry in order to share their latest research and knowledge in the complex and exciting world of food colloids. The 19th Food Colloids stresses the latest trends in colloidal food systems covering at the same time the classical but ever modern physical chemistry aspects in the field. This year's conference also has a special focus on sustainability with clean, environmentally friendly, plant-based approaches. Furthermore, the conference extends its focus in non-food, or close-to-food, applications including nutraceuticals, pharmaceuticals, packaging and medicine providing ground for interdisciplinary scientific interactions.

The biennial conference of food colloids bears a long history starting already in 1986 in Leeds and it brings together, ever since, scientists from many disciplines focusing on the physical chemistry aspects of colloidal food systems.

The 19th Food Colloids Conference takes place in Thessaloniki, the second largest city in Greece, with over 1 million inhabitants. The conference takes place in Thessaloniki Concert Hall located along in the city coastline, in a walking distance from the city center.

On behalf of the local organizing committee, and the international steering committee we are warmly welcoming you here in Thessaloniki in April 2024 for fruitful food colloid science!

Professor Eleni P. Kalogianni
International Hellenic University

ORGANIZER



INTERNATIONAL HELLENIC UNIVERSITY

The International Hellenic University (IHU) is one of Greece's largest universities, with 8 Schools and 25 Departments covering a broad range of disciplines. The main campus is located in two hubs in the city of Thessaloniki while it has facilities, educational and administrative, in a total of three additional cities in Northern Greece (Serres, Katerini, Kilkis).

IHU includes the University Center of International Programs of Studies which is based in Thessaloniki and aims to provide higher education, in a foreign language (English), to Greeks and foreigners.

In addition to offering undergraduate programs of studies, IHU has over 40 advanced research laboratories and offers over 50 Post-Graduate Master Programs, some of which are inter-university or interdisciplinary, with 22 of them being offered in English. There are still a number of collaborations with universities and research centers in Greece and abroad, as well as memorandums of cooperation signed with academic and social organizations, which strengthen its position both in the Greek and European higher education.

SUPPORTER



HELLENIC COLLOIDS & INTERFACE SOCIETY

The Hellenic Colloids & Interface Society is a scientific society founded in 2019 and is a non-profit association.

Its aim is to bring together those involved in the field of colloids and interfaces and is addressed to all scientists from both academia and business.

In addition, it contributes to the participation and organization of research activities that promote the science of colloids as well as to the strengthening of communication between the members of the scientific community.

Its aim is to promote a fruitful dialogue as well as the cooperation between its members. It is aimed at both young and experienced scientists and researchers. Among its actions was the organization of the 35th International

Conference of the European Colloid and Interface Society (ECIS), which was held with great success in Athens, Greece, from 5 to 10 September 2021. The society is also a supporter of the 19th food colloids conference.

The Hellenic Colloids & Interface Society gives scholarships to PhD Candidates who are members of the Society to attend conferences and promote their first steps into the world of inquiry, questioning and discovery.



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ABOUT LARODAN

Larodan is a manufacturer of high purity lipids that are distributed all over the world. We serve customers with **Specialized** and **Customized Lipids** but we also have a very broad range of lipids with over 1500 different high purity lipids in our catalogue for different applications.

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**PLEASE JOIN OUR MORNING JOG
ON TUESDAY 16:TH AT 7.45AM
WE WILL START AT THE WHITE TOWER
VISIT OUR BOOTH TO REGISTER**



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National Organizing Committee



Eleni P. Kalogianni

International Hellenic
 University, Thessaloniki,
 Greece



Costas Biliaderis

Aristotle University,
 Thessaloniki, Greece



Vasiliki Evageliou

Agricultural University of
 Athens, Athens, Greece



Sofia Hatziantoniou

University of Patras, Patras,
 Greece



Magdalini Krokida

National Technical University
 of Athens, Greece



Epameinondas Leontidis

University of Cyprus,
 Department of Chemistry,
 Nicosia, Cyprus



Thomas Moschakis

Aristotle University,
 Thessaloniki, Greece



Vassiliki Papadimitriou

National Hellenic Research
 Foundation, Athens, Greece



Christos Ritzoulis

International Hellenic
 University, Thessaloniki,
 Greece



Aristotelis Xenakis

National Hellenic Research
 Foundation, Athens, Greece



Maria Zoumpantioti

National Hellenic Research
 Foundation, Athens, Greece

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Despoina Georgiou
International Hellenic
University



Paraskevi Tzika
International Hellenic
University



Maria Demiri
International Hellenic
University



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Lund University, Sweden



Miguel Cabrerizo-Vilchez
University of Granada, Spain



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Nestlé Research Center
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Julia Maldonado-Valderama
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Kingdom



Elke Scholten
Wageningen University,
The Netherlands



Nicolai Taco
Le Mans University, France



Ulrike van der Schaaf
Karlsruhe Institute of
Technology, Germany



Anwasha Sarkar
University of Leeds,
United Kingdom

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Our food innovation history



In 2019 we brought these facilities together and we are still innovating ...



CONFERENCE THEMATIC TOPICS

- **Surfactants, Lipids, Macromolecules, Particles:** Adsorption, Interactions and Self-assembly
- **From nano to macro:** Interfacial structure vs colloidal stability and properties
- **Emulsions, Foams, Gels:** From classical approaches to novel systems
- **New Methods and New Insights in Food Colloidal Systems**
- **Colloids in Humans:** Delivery systems, Bioavailability, Digestion and Oral Processing
- **Sustainable Food Colloids:** Clean, Environmentally Friendly, Plant-based
- **Food Colloids in Non-(or close to) Food Applications:** Nutraceuticals, Pharmaceuticals, Packaging, Medicine

PLENARY SPEAKERS



Costas Demetzos

Professor in Pharmaceutical Nanotechnology, Department of Pharmacy,
 Director of the Laboratory of Pharmaceutical Technology, National & Kapodistrian
 University of Athens,
 President of the Hellenic Pharmaceutical Society (HPS),
 Ordinary member in class IV-Natural Sciences, European Academy of Sciences and Arts



Kathleen Stebe

Goodwin Professor
 Chemical and Biomolecular Engineering School of Engineering and Applied Science
 University of Pennsylvania



Peter Fischer

ETH Zurich
 Department of Health Science and Technology
 Institute of Food, Nutrition and Health
 Zurich, Switzerland



Milena Corredig

Department of Food Science, Aarhus University, Denmark
 Editorial board member of the Journal of Dairy Research
 Section Editor of the Journal of Dairy Science
 Section editor for Food Hydrocolloids
 Section editor for Journal of Dairy Science

SCIENTIFIC PROGRAMME

SUNDAY, 14 April 2024

Main Hall - "FOYER"

17:00 - 20:00 Registration

19:00 - 21:00 Welcome Reception

MONDAY, 15 April 2024

Registration Hours 08:00 - 19:00

Main Hall - "AIMILIOS RIADIS"

09:00 - 09:30 **Welcome and Opening Remarks**

09:30 - 10:30 **Plenary Lecture**

Chair: Brent Murray, Univeristy of Leeds, UK

DESIGNING BETTER PLANT PROTEIN FOODS THROUGH COLLOIDAL SCIENCE

MILENA CORREDIG

Professor, University of Aarhus, Denmark

10:30 - 11:20 **1. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED I**

Chair: Ulrike van der Schaaf, Karlsruhe Institute of Technology, Germany

Keynote Talk

10:30 - 11:00 Towards the use of plant proteins for microencapsulation and functional foods

Selomulya Cordeli¹, Kim Woojeong, Naik Rishi Ravindra, Wang Yong

¹*School of Chemical Engineering, UNSW Sydney, Australia*

11:00 - 11:20 Coalescence of emulsion droplets stabilized by potato proteins within milliseconds as observed through microfluidic techniques: the effect of pH

Sreepakash Arunitha K.^{1,2}, Bouhid de Aguiar Izabella, Schroen Karin

¹*Twente Membranes, University of Twente, Enschede, The Netherlands*

²*Wetsus, Leeuwarden, The Netherlands*

11:20 - 11:50 **COFFEE BREAK**

11:50 - 13:10 **2. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED II**

Chair: Christos Ritzoulis, International Hellenic Univeristy, Greece

11:50 - 12:10 Physicochemical and functional characterization of plant proteins for enhanced performance in plant-based cheese analogs

Hanley Laura¹, Dobson Stacie, Marangoni Alejandro G.

¹*Department of Food Science, University of Guelph, Canada*

12:10 - 12:30 Protein-Polysaccharide Nanoparticle Complexation as a Novel Strategy to Reduce Protein Allergen Levels in Soy Milk

Narciso Oñate Joan^{1,2}, Salvia-Trujillo Laura, Soliva-Fortuny Robert, Martín-Belloso Olga

¹*Department of Food Technology, Engineering and Science, University of Lleida, Spain*

²*Agrotecnio CeRCA Center, Lleida, Spain*

12:30 - 12:50	<p>Functionalisation of seaweed aqueous dispersions: interplay between polysaccharide solubility and cell wall physicochemical properties</p> <p>Souto-Prieto Antonio, Ferreiro-Portas Tania, Martinez-Sanz Marta, Parada Patricia, Abuin Laura, Cobos Angel, Lopez-Sanchez Patricia^{1,2}</p> <p>¹Dept. Analytical Chemistry, Nutrition and Food science, University of Santiago de Compostela, Lugo, Spain</p> <p>²Centre for Dairy Products and Food Technologies APLTA, University of Santiago de Compostela, Lugo, Spain</p>
12:50 - 13:10	<p>Formation and structure of insoluble protein aggregates driven by calcium addition in different pea protein fractions as a function of pH</p> <p>Amat Tiffany¹, Assifaoui Ali, Buczkowski Johann, Silva Juliana V.C., Schmitt Christophe, Saurel Rémi</p> <p>¹Université de Bourgogne Franche-Comté (UBFC), L'Institut Agro Dijon, France</p>
13:10 - 14:10	LUNCH BREAK
14:10 - 16:00	3. NEW METHODS AND NEW INSIGHTS IN FOOD COLLOIDAL SYSTEMS I
	<p>Chair: Tommy Nylander, Univeristy of Lund, Sweeden</p> <p>Keynote Talk</p>
14:10 - 14:40	<p>From production of food structures to their digestion and health effects: Microfluidics used in sustainable food design</p> <p>Schroen Karin¹, Deng Boxin, Corstens Meinou</p> <p>¹Laboratory of Food Process Engineering, Wageningen University, Netherlands</p>
14:40 - 15:00	<p>Coalescence of concentrated emulsions in microfluidic constrictions through avalanches</p> <p>Hinderink B.A. Emma¹, Bera Bijoy, Steijn Volkert van</p> <p>¹Department of Process & Energy, Delft University of Technology, Netherlands</p>
15:00 - 15:20	<p>Thin films stabilized by plant-based proteins: Insights from the dynamic thin film balance technique</p> <p>Chatziagiannakis Emmanouil¹, Leonard Sagis, Nikiforidis Costas</p> <p>¹Mechanical Engineering Department, Eindhoven University of Technology, Netherlands</p>
15:20 - 15:40	<p>In situ visualization of microstructural re-arrangements during oleogelation</p> <p>Via Matias A., Keshanidokht Shaghayegh, Risbo Jens, Clausen Mathias P.¹</p> <p>¹Department of Green Technology, University of Southern Denmark, Odense, Denmark</p>
15:40 - 16:00	<p>Elucidating the Supramolecular Structure of Rapeseed Protein through Complementary Scattering Techniques</p> <p>Alpiger Simone B.¹, Møller Thea L., Smith Gregory N, Corredig Milena</p> <p>¹Department of Food Science, CiFood Center, Aarhus University, Denmark</p>
16:00 - 16:30	COFFEE BREAK
16:30 - 18:40	4. FOOD COLLOIDS IN NON-(OR CLOSE TO) FOOD APPLICATIONS: NUTRACEUTICS, PHARMACEUTICS, PACKAGING, MEDICINE
	<p>Chair: Maria Zoumpanioti, National Hellenic Research Foundation, Greece</p> <p>Keynote Talk</p>
16:30 - 17:00	<p>Edible bio-based oleofilms from cellulose microfibrils - stabilized Pickering emulsions</p> <p>Valencia Luis ,Nomena M. Emma, Mathew Aji, Velikov P. Krassimir¹</p> <p>¹Division of Materials and Environmental Chemistry, Stockholm University, Sweden</p>

17:00 - 17:20	Impact of temperature-induced-swelling on surface properties of microgels based on oligo(ethylene glycol) <i>Maldonado-Valderrama Julia¹, Quirosa-Mancilla Jesus, Navarro-Arrebola Ivan, Rubio Antonio, Fernandez-Rodriguez Miguel Angel, Aguirre Garbine, Billon Laurent, Martín Molina Alberto</i> <i>¹Department of Applied Physics, University of Granada, Spain</i>
17:20 - 17:40	Ethylcellulose oleogel as the potential controlled release delivery system <i>Zhang Lingping¹, Roosen-Runge Felix, Oscarsson Elin, Wahlgren Marie, Bergenstahl Björn</i> <i>¹Lund University, Sweden</i>
17:40 - 18:00	Food amyloid fibrils are safe nutrition ingredients based on in-vitro and in-vivo assessment <i>Zhou Jiangtao¹, Kutzli Ines, Mezzega Raffaele</i> <i>¹ETH Zurich, Switzerland</i>
18:00 - 18:20	Modifying proteins to make hollow or solid microparticles <i>Schijven Laura, Saggiomo Vittorio, Velders Aldrik, Bitter H. Johannes, Nikiforidis V. Costas¹</i> <i>¹BioNanoTechnology, Wageningen University and Research, Netherlands</i>
18:20 - 18:40	Advanced pH-Responsive Rhamnolipid self-assemblies for food and pharmaceutical applications <i>Kadokia Parth¹, Valentin Jules, Salentinig Stefan</i> <i>¹Department of Chemistry, University of Fribourg, Switzerland</i>
18:40 - 19:40	POSTER PRESENTATIONS For detailed information see the Poster section, pg. 19 P1. FOOD COLLOIDS IN NON-(OR CLOSE TO) FOOD APPLICATIONS: NUTRACEUTICS, PHARMACEUTICS, PACKAGING, MEDICINE P2. NEW METHODS AND NEW INSIGHTS IN FOOD COLLOIDAL SYSTEMS P3. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED

TUESDAY, 16 April 2024

Registration Hours 09:00 - 19:00

Main Hall - "AIMILIOS RIADIS"

08:00 - 09:30	Morning jog organized by Iarodan
10:00 - 11:00	Plenary Lecture Chair: Vassiliki Papadimitriou, National Hellenic Research Foundation, Greece COMPLEXITY AT MICRO AND NANO SCALE. THE COMING ERA IN COLLOIDAL SCIENCES <i>COSTAS DEMETZOS</i> Professor, National & Kapodistrian University of Athens, Greece
11:00 - 12:10	5. COLLOIDS IN HUMANS: DELIVERY SYSTEMS, BIOAVAILABILITY, DIGESTION AND ORAL PROCESSING I Chair: Elke Scholten, Wageningen University, The Netherlands Keynote Talk
11:00 - 11:30	Solubilization Effect on Lyotropic Liquid Crystals Transitions and Release <i>Goldmünz Eliezer, Aserin Abraham, Ottaviani Maria Francesca, Shemes Alexander, Garti Nissim¹</i> <i>¹The Casali Center for Applied Chemistry, The Institute of Chemistry, The Hebrew University of Jerusalem, Israel</i>

11:30 - 11:50	Effect of processing conditions on the digestibility of potato protein isolate and rapeseed oil in a complex food matrix <i>Jiménez-Munoz Luis, Corredig Milena</i>
11:50 - 12:10	Tailored design of polyelectrolyte complexes (PECs) for encapsulation of low molecular weight bioactive peptides (BAPs) <i>Atma Yoni¹, Sadeghpour Amin, Murray Brent S., Goycoolea Francisco M.</i> <i>¹School of Food Science and Nutrition, University of Leeds, United Kingdom</i>
12:10 - 12:40	COFFEE BREAK
12:40 - 13:40	6. COLLOIDS IN HUMANS: DELIVERY SYSTEMS, BIOAVAILABILITY, DIGESTION AND ORAL PROCESSING II
	Chair: Julia Maldonado-Valderama, University of Granada, Spain
12:40 - 13:00	Polysaccharide Microgels for Design of Biomaterials <i>Pich Andrij¹, Jung Shannon, Kolodzy Fabian, Bulut Selin</i> <i>¹Institute of Technical and Macromolecular Chemistry, RWTH Aachen University, Germany</i>
13:00 - 13:20	Colloidal interactions during the oral processing of soft foods: From thermodynamics to texture <i>Ritzoulis Christos</i> <i>Department of Food Science and Technology, International Hellenic University, Thessaloniki, Greece</i>
13:20 - 13:40	Stability, acceptability and bioaccessibility of DHA and EPA incorporated in plant milk <i>Sommer Abigail, Belury Martha, Vodovotz Yael¹</i> <i>¹Department of Food Science and Technology, The Ohio State University, United States</i>
13:40 - 14:40	LUNCH BREAK
14:40 - 16:40	7. NEW METHODS AND NEW INSIGHTS IN FOOD COLLOIDAL SYSTEMS II
	Chair: Michael Gradzielski, Technical University Berlin, Germany
14:40 - 15:00	Isotropic liquid state of triacylglycerols: The starting point of fats and oils crystallization <i>Golodnizky Daniel, Davidovich Pinhas Maya¹</i> <i>¹Faculty of Biotechnology and Food Engineering, Technion, Haifa, Israel</i>
15:00 - 15:20	Lipid-Polymer Hybrid Nanofibres: Responsive Nanostructures and Controlled Functions <i>Sadeghpour Amin</i> <i>School of Food Science and Nutrition, University of Leeds, United Kingdom</i>
15:20 - 15:40	Exploring the relationship between structural characteristics and functional properties of textured vegetable proteins <i>Van Esbroeck Thiemo¹, Sala Guido, Stieger Markus, Scholten Elke</i> <i>¹Department of Physics and Physical Chemistry of Foods, Wageningen University, Netherlands</i>
15:40 - 16:00	Hierarchical structures of plant-based meat analogs across multiple length scales <i>Guan Tong^{1,2}, Sägesser Corina, Matsarskaia Olga, Rühls Patrick, Fischer Peter</i> <i>¹Large Scale Structures Group, Institut Laue-Langevin, Grenoble, France</i> <i>²Laboratory of Food Process Engineering, ETH Zürich, Switzerland</i>
16:00 - 16:20	Revealing the efficiency of aroma molecules as co-surfactants in surface-emerging processes <i>Tsarkova Larisa A.¹, Soboleva Oxana A.</i> <i>¹German Textile Research Center North West, Krefeld, Germany</i>

16:20 - 16:40	SANS and SAXS: a Love Story to Unravel Nanostructural Evolution of Soy Proteins and Polysaccharides during High Moisture Extrusion <u>Garina Ekaterina D.</u>¹, <u>den Adel Ruud, van Duynhoven John P.M., Bouwman Wim G.</u> ¹ <i>Department of Radiation Science and Technology, Delft University of Technology, Netherlands</i>
16:40 - 17:10	COFFEE BREAK
17:10 - 19:10	8. EMULSIONS, FOAMS, GELS: FROM CLASSICAL APPROACHES TO NOVEL SYSTEMS I Chair: Björn Bergenståhl, Lund University, Sweden Keynote Talk
17:10 - 17:30	Fabrication of electrospun short fiber-based aerogels as template for preparing oleogels <u>Li Jiawen, Zhang Hui</u> ¹ ¹ <i>Department of Food Science and Nutrition, Zhejiang University, Hangzhou, China</i>
17:30 - 17:50	Protein-Polyphenol Networks in High Internal Phase Emulsions: Mimicking the temperature-dependent rheology of adipose tissue <u>Christoph Valentin, Fuhrmann Philipp L.</u> ¹ ¹ <i>Institute of Food Science, Department of Food Science and Technology, University of Natural Resources and Life Sciences, Vienna, Austria</i>
17:50 - 18:10	Tuning the properties of ethanol pre-treated whey nanoparticles for emulsion stabilization: effect on the in vitro lipid digestion <u>Charitou Garoufalia</u>¹, <u>Kyrkou Chara, Lazaridou Athina, Michaelidou Alexandra-Maria, Moschakis Thomas</u>
18:10 - 18:30	Surfactant-free microemulsions for the synthesis of antioxidants for food applications <u>Zoumpanioti Maria</u>¹, <u>Xenakis Aristotelis, Stamatis Haralampos</u> ¹ <i>Institute of Chemical Biology, National Hellenic Research Foundation, Athens, Greece</i>
18:30 - 18:50	Emulsions for Food Applications Stabilised by Mixtures of Lecithin, Glycerine Monooleate (GMO), and Na Oleate <u>Gradzielski Michael, Glodny Kilian, Michel Anton, Große Clara, Sobieraj Velten</u> ¹ <i>Stranski-Laboratorium für Physikalische und Theoretische Chemie, Institut of Chemistry, Technische Universität Berlin, Germany</i>
18:50 - 19:10	Thermogelation of pea protein stabilized nanoemulsions co-formulated with methyl cellulose for plant-based food analogues <u>Renggli Damian</u>¹, <u>Doyle Patrick S.</u> ¹ <i>Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, United States</i>
20:00 - 23:30	Conference dinner

WEDNESDAY, 17 April 2024

Registration Hours 09:00 - 19:30

Main Hall - "AIMILIOS RIADIS"

09:30 - 10:30	<p>Plenary Lecture</p> <p>Chair: Epameinondas Leontidis, University of Cyprus, Cyprus</p> <p>ACTIVE SURFACE AGENTS: ACTIVE COLLOIDS AT FLUID-FLUID INTERFACES</p> <p><i>KATHLEEN STEBE</i></p> <p>Professor, University of Pennsylvania, United States</p>
10:30 - 11:40	<p>9. SURFACTANTS, LIPIDS, MACROMOLECULES, PARTICLES: ADSORPTION, INTERACTIONS AND SELF-ASSEMBLY I</p> <p>Chair: Miguel Cabrerizo-Vilchez, University of Granada, Spain</p> <p>Keynote Talk</p>
10:30 - 11:00	<p>Current view on the adsorption dynamics of bovine serum albumin at water/air interface</p> <p>Gochev Georgi G., Aksenenko Eugene V., Kovalchuk Volodymyr I., Szyk-Warszyńska Lilianna, Gawel Dorota, Zawala Jan, Warszyński Piotr, Schneck Emanuel, Miller Reinhard¹, Fainerman Valentin B.</p> <p>¹Department of Condensed Matter Physics, TU Darmstadt, Germany</p>
11:00 - 11:20	<p>Isolating the Interface of an Emulsion using X-Ray Scattering and Tensiometry to Understand Protein-Modulated Alkylglyceride Crystallisation</p> <p>MacWilliams Stephanie V., Clulow Andrew J., Kirby Nigel M., Miller Reinhard⁵, Boyd Ben J., Gillies Graeme, Beattie David A., Krasowska Marta¹</p> <p>¹Future Industries Institute, UniSA STEM, University of South Australia, Mawson Lakes Campus, Australia</p>
11:20 - 11:40	<p>The effect of pH on enzyme catalyzed lipolysis at the oil/water interface</p> <p>Frigerio Matteo¹, Leser Martin, Salentinig Stefan</p> <p>¹Department of Chemistry, University of Fribourg, Switzerland</p>
11:40 - 12:10	COFFEE BREAK
12:10 - 13:50	<p>10. SURFACTANTS, LIPIDS, MACROMOLECULES, PARTICLES: ADSORPTION, INTERACTIONS AND SELF-ASSEMBLY II</p> <p>Chair: Nicolai Taco, Le Mans University, France</p>
12:10 - 12:30	<p>On the structural changes of edible oils by using green biobased tools to control the functional properties</p> <p>Humphreys Ben, Tullberg Cecilia, Gilbert Jennifer, Gladkauskas Eimantas, Adlercreutz Patrick, Nylander Tommy^{1,2,3,4,5}</p> <p>¹Physical Chemistry, Lund University, Sweden</p> <p>²NanoLund, Lund University, Sweden</p> <p>³Biotechnology, Lund University, Sweden</p> <p>⁴LINXS Institute of Advanced Neutron and X-ray Science, Lund, Sweden</p> <p>⁵School of Chemical Engineering and Translational Nanobioscience Research Center, Sungkyunkwan University, Suwon, Republic of Korea</p>
12:30 - 12:50	<p>Production of pea protein microgels and evaluation of their compression behavior at the air/water interface</p> <p>Silva Jessica T.P., Gonçalves Gracielle A., Pinho Samantha C.¹</p> <p>¹Department of Food Engineering, University of São Paulo, Pirassununga, Brazil</p>

12:50 - 13:10	Self-assembly of oat proteins into various colloidal states as function of the NaCl concentration and pH <u>Wouters Arno G.B.¹, Nicolai Taco</u> <i>¹KU Leuven, Laboratory of Food Chemistry and Biochemistry and Leuven Food Science and Nutrition Research, Centre (LFoRCe), Belgium</i>
13:10 - 13:30	Polyphenol release aggregation and its sensory consequences <u>Ugembe Yula^{1,2}, Ram Ingrid, Lazarte Claudia, Mavie Candida, Francisco José, Magaia Telma, Bergenståhl Björn</u> <i>¹Department of Food Technology, Engineering and Nutrition, Lund University, Sweden ²Chemical Engineering Department, Eduardo Mondlane University, Maputo, Mozambique</i>
13:30 - 13:50	Probing the particle formation and aggregation behaviour of gliadin in aqueous ethanol with ultra-small- and small-angle X-ray scattering <u>Petker Katherine¹, Peyronel Fernanda, Pink David, Joye Iris J.</u> <i>¹Department of Food Science, University of Guelph, Ontario, Canada</i>
13:50 - 14:50	LUNCH BREAK
14:50 - 17:20	11. FROM NANO TO MACRO: INTERFACIAL STRUCTURE VS COLLOIDAL STABILITY AND PROPERTIES Chair: Martin Leser, University of Fribourg, Switzerland Keynote Talk
14:50 - 15:20	Liquid-liquid phase separation in heteroprotein systems: recent advances <u>Bouhallab Saïd¹, Ben Messaoud Ghazi</u> <i>¹INRAE, Institut Agro, UMR1253 STLO, F-35042 Rennes, France</i>
15:20 - 15:40	Interfacial rheological properties of pepsin-hydrolyzed lentil protein isolate at oil-water interfaces <u>Chutinara Chaya¹, Sagis Leonard, Landman Jasper</u> <i>¹Laboratory of Physics and Physical Chemistry of Foods, Wageningen University, Netherlands</i>
15:40 - 16:00	Pea protein's interfacial behaviour as affected by high-pressure homogenization treatments: an in-depth study with dilatational rheology characterization <u>D'Alessio Giulia¹, Maldonado-Valderrama Julia, del Castillo-Santaella Teresa, Pittia Paola, Di Mattia Carla Daniela</u> <i>¹Department of Bioscience and Technology for Food, Agriculture and Environment, University of Teramo, Italy</i>
16:00 - 16:20	Bulk and interfacial behaviour of sustainable plant protein-based microgels <u>Akgonullu Daisy¹, Murray Brent, Connell Simon, Fang Yuan, Linter Bruce, Sarkar Anwasha</u> <i>¹Food Colloids and Bioprocessing Group, School of Food Science and Nutrition, University of Leeds, United Kingdom</i>
16:20 - 16:40	Chitosan-Alginate Microgels as emulsifiers for functional foods applications <u>Charisis Aggelos, Dai Bin, Gradzielski Michael, Kalogianni Eleni P.¹</u> <i>¹Department of Food Science and Technology, School of Geotechnical Sciences, International Hellenic University, Thessaloniki, Greece</i>
16:40 - 17:00	Exploring and understanding food emulsion systems with neutron scattering and spectroscopy <u>Heiden-Hecht Theresia¹, Müller Maren, Frielinghaus Henrich, Holderer Olaf</u> <i>¹Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science, Garching, Germany</i>

17:00 - 17:20	<p>Novel Ways to Study Interfacial Lipid Crystallization</p> <p><i>Frahn Jessica¹, Møller Amalie, Clulow Andrew J., Blencowe Anton, Beattie David, Krasowska Marta</i></p> <p><i>¹Future Industries Institute, University of South Australia, Mawson Lakes, Australia</i></p>
17:20 - 17:50	COFFEE BREAK
17:50 - 19:10	12. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED III
	Chair: Costas Biliaderis, Aristotle University, Greece
17:50 - 18:10	<p>How plant protein characteristics affect rheological and lubrication properties</p> <p><i>Li Nana¹, Sala Guido, Scholten Elke</i></p> <p><i>¹Physics and Physical Chemistry of Foods, Wageningen University, Netherlands</i></p>
18:10 - 18:30	<p>Ancient fermentation techniques to obtain future meat replacers</p> <p><i>Rudge Raisa E.D.¹, Husson Adel, Stokes Jason R., Smyth Heather E.</i></p> <p><i>¹Center for Food & Nutrition, QAAFI, The University of Queensland, Brisbane, Australia</i></p>
18:30 - 18:50	<p>Rheological properties and possible application of alkali-extractable wheat bran arabinoxylans as affected by their structural heterogeneity</p> <p><i>Mouzakitis Christos K., Kotsiou Kali¹, Pontikakos Georgios, Irakli Maria, Zervou Maria, Matzapetakis Manolis, Biliaderis G. Costas, Lazaridou Athina</i></p> <p><i>¹Laboratory of Food Chemistry and Biochemistry, Department of Food Science and Technology, School of Agriculture, Aristotle University of Thessaloniki, Greece</i></p>
18:50 - 19:10	<p>Towards the understanding of the structure deformation behavior of meat and meat analogs</p> <p><i>Wilhelm I. Elle¹, Rodríguez Agudo José A., Schmelzeisen O. David, Wagemans M. Anja</i></p> <p><i>¹Technical University Berlin, Institute of Food Technology and Food Chemistry, Department of Food Biosciences, Straße des 17. Juni 135, 10623 Berlin, Germany</i></p> <p><i>²Technical University Dresden, Institute of Natural Materials Technology, Chair of Food Engineering, Bergstraße 120, 01062 Dresden, Germany</i></p> <p><i>³Project Eaden GmbH, Alexandrinenstraße 3, 10969 Berlin, Germany</i></p>
19:10 - 20:10	<p>POSTER PRESENTATIONS</p> <p>For detailed information see the Poster section, pg. 25</p> <p>P4. COLLOIDS IN HUMANS: DELIVERY SYSTEMS, BIOAVAILABILITY, DIGESTION AND ORAL PROCESSING</p> <p>P5. EMULSIONS, FOAMS, GELS: FROM CLASSICAL APPROACHES TO NOVEL SYSTEMS</p> <p>P6. FROM NANO TO MACRO: INTERFACIAL STRUCTURE VS COLLOIDAL STABILITY AND PROPERTIES</p> <p>P7. SURFACTANTS, LIPIDS, MACROMOLECULES, PARTICLES: ADSORPTION, INTERACTIONS AND SELF-ASSEMBLY</p>

THURSDAY, 18 April 2024

Registration Hours 08:30 - 14:30

Main Hall - "AIMILIOS RIADIS"

09:00 - 10:00	Plenary Lecture Chair: Reinhard Miller, Technical University Darmstadt, Germany
09:00 - 10:00	ROLE OF OIL POLARITY ON THE INTERFACIAL PHENOMENA OF SURFACTANTS, PROTEINS, AND PARTICLES AT FLUID INTERFACES <i>PETER FISCHER</i> Professor, ETH Zurich, Switzerland
10:00 - 11:40	13. EMULSIONS, FOAMS, GELS: FROM CLASSICAL APPROACHES TO NOVEL SYSTEMS II
	Chair: Anna Millqvist Fureby, Lund University, Sweden
10:00 - 10:20	Development and characterization of a novel oleogel-in-oleogel system with tailorable digestibility <i>Pinto Tiago C.¹, Lassila Petri, Giannone Giulia, Sabet Saman, Valoppi Fabio</i> ¹ Department of Food and Nutrition, University of Helsinki, Finland
10:20 - 10:40	Emulsions stabilized by plant proteins for the encapsulation and delivery of bioactive compounds in foods <i>Galani Eleni^{1,2}, Georgiou Despoina, Papadimitriou Vassiliki, Kalogianni Eleni, Xenakis Aristotelis, Chatzidaki Maria D.</i> ¹ Institute of Chemical Biology, National Hellenic Research Foundation, Greece ² Food Chemistry & Human Nutrition, Agricultural University of Athens, Greece
10:40 - 11:00	Texture modulation in plant-based high-protein yogurt alternatives: Adjustment of the texture by addition of oil and pectin-based microgel particles <i>Martin Désirée¹, Karbstein Heike P., van der Schaaf Ulrike S.</i> ¹ Institute of Process Engineering in Life Sciences - Chair of Food Process Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany
11:00 - 11:20	Impact of effective volume fraction and ion concentration on rheological properties of low acyl gellan gum fluid gels <i>D'Oria Gabriele¹, Limbach Hans Joerg, Hartmann Christoph, Gunes Deniz Z., Ahrné Lilia</i> ¹ Department of Food Science, University of Copenhagen, Frederiksberg, Denmark
11:20 - 11:40	Effect of complementary polymer on starch microsphere preparation in aqueous two-phase systems <i>Gidlöf Zandra^{1,2}, Nilsson Lars, Nordström Randi, Wahlgren Marie C., Millqvist Fureby Anna</i> ¹ Department of Food Technology, Engineering and Nutrition, Lund University, Sweden ² RISE Research Institutes of Sweden, Stockholm, Sweden
11:40 - 12:10	COFFEE BREAK
12:10 - 13:30	14. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED IV
	Chair: Thomas Moschakis, Aristotle University, Greece
12:10 - 12:30	Microstructural and conformational changes of interfacial and biopolymer stabilizers drive the difference between dairy and plant-based cappuccino foams <i>Würst Silvana, Bucowski Johann, Jones Nyk, Vronning Soren, Fischer Peter, Wooster J. Tim¹</i> ¹ Nestlé Institute of Food Sciences, Nestlé Research, Lausanne, Switzerland

- 12:30 - 12:50 | Quantitative Image Analysis of Protein and Lipid Oxidation Localization in Oil-in-Water Emulsions Prepared with Legume Protein Isolates
Brüls-Gill Mariska^{1,2}, Duynhoven John P.M. van, Ilja K. Voets, Hohlbein Johannes
¹Laboratory of Self-Organizing Soft Matter, Department of Chemical Engineering and Chemistry & Institute for Complex Molecular Systems, Eindhoven University of Technology, Netherlands
²Laboratory of Biophysics, Wageningen University and Research, Netherlands
- 12:50 - 13:10 | Soybean fibers : a plant-based by-product for stabilizing emulsions
Ourvois-Maloisel Noémie^{1,2,3}, Ludovic Paquin, Fabienne Gauffre, Véronique Vié, Surel-Salmon Claire, Saint-Jalmes Arnaud
¹Univ Rennes, CNRS, IPR (Institut de Physique de Rennes), Rennes, France
²Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) Rennes, France
³Olga, Pôle Recherche et Innovation, Rennes, France
- 13:10 - 13:30 | Blends of vegetable oils as a tool to tune the texture
Bloquet-Maurras Julie, Bentaleb Ahmed, Laurichesse Eric, Bayard Mathilde, Schmitt Véronique¹
¹Centre de Recherche Paul Pascal, UMR 5031, University of Bordeaux, CNRS, France
- 13:30 - 14:30 | **Closing Ceremony - Awards - Announcement of the 20th Food Colloids Conference**

FRIDAY, 19 April 2024

09:00 - 16:00 | Cultural Sports Excursion to Mount Olympus



Heinz Maier-Leibnitz Zentrum



Neutrons for Research and Innovation

The Heinz Maier-Leibnitz Zentrum (MLZ) is a leading centre for cutting-edge research with neutrons and positrons. Operating as a user facility, the MLZ offers a unique suite of high-performance neutron scattering instruments.

This cooperation involves the Technische Universität München, the Forschungszentrum Jülich GmbH and the Helmholtz-Zentrum hereon GmbH. The MLZ is funded by the German Federal Ministry of Education and Research, together with the Bavarian State Ministry of Education, Science and the Arts and the partners of the cooperation.



Upcoming events



MLZ Conference:
Neutrons for Energy Storage
June 04th-07th, 2024



JCNS Workshop 2024 Trends and
Perspectives in Neutron Scattering:
Functional Interfaces
Oct 08th-11th, 2024



MLZ User Meeting
Dec 05th-06th, 2024



<https://mlz-garching.de/englisch.html>

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LIST OF POSTERS

Monday 15 April 2024, 18:40 - 19:40

1. FOOD COLLOIDS IN NON-(OR CLOSE TO) FOOD APPLICATIONS: NUTRACEUTICS, PHARMACEUTICS, PACKAGING, MEDICINE

Antimicrobial films from zein nanoparticles with carvacrol **48**

Babayev Alpamys, Spasojević Ljiljana, Škrbić Jelena, Bučko Sandra, Kocić-Tanackov Sunčica, Bulut Sandra, Fraj Jadranka, Petrović Lidija, Milinković Budinčić Jelena, Sharipova Altytay, Aidarova Saule, Katona Jaroslav

Impurity-free production of submicrometer-sized nutraceuticals by ultrashort pulsed laser fragmentation in liquids **113**

Friedenauer Tina, Buck Kim, Eberwein Maike, Buente Anna-Lena, Rehbock Christoph, Barcikowski Stephan

Tomato paste edible films in the presence of pectin and carrageenan **216**

Zioga Marianthi, Tsianaka Kalliopi, Evageliou Vasiliki

Development of hydrogel containing C-phycoerythrin from Spirulina for 3D food printing **217**

Bürck Monize, Pandolfo Vinicius, Masako Nakamoto Monica, Cavalcante Braga Anna Rafaela

Development of multilayer antimicrobial films for sustainable food packaging **221**

Li Ting, Sagis Leonard, Habibi Mehdi

Food 3D Printing of Personalized Cannabis Edibles: A Focus on Aerated MCT Oil Oleogels **222**

Andriotis Eleftherios G., Chaideraki Chrysi, Pappa Leftheria, Paraskevopoulou Adamantini, Fatouros Dimitrios G., Ritzoulis Christos

Gum arabic -pectin powders loaded with eggplant peels' extract **238**

Kostopoulou Maria Eleni, Evageliou Vasiliki

4D Printing for Morphing Food: Bridging Shape Morphing Behaviors from Non-Food to Food-grade Materials **245**

Mengyue Xu, Leonard M.C. Sagis, Mehdi Habibi

Development of technologies for producing feed based on keratin hydrolysates from animal waste **287**

Sultan Meruyert, Abdirova Aziza, Musabekov Kuanyshbek, Ospanova Zhanar, Takhistov Paul, Adilbekova Akbota, Kenzhebayev Temirkhan

Innovative Microfibers Carotenoid Encapsulation: Electrospun Polymeric Composites for Controlled Release for Food Applications **295**

Ramos-Souza Caroline, Trindade Leticia Guerreiro da, Braga Anna Rafaela Cavalcante, De Rosso Veridiana Vera

Citrus fiber-based edible food films **313**

Cavallo Valentina, Mohammad Amin Mohammadifar, Anders Egede Daugaard, Susan Løvstad Holdt

Role of enzymatic modification of Pickering particles - a strategy to induce demulsification **324**

Hernandez Gloria, Murray Brent S., Harbottle David, Sarkar Anwasha

Enrichment of an Atlantic bonito burger with chickpea, Spirulina and Fucus vesiculosus: antioxidant activity, physicochemical and texture properties with different hydrocolloids **330**

Solinho Joanna, Gonçalves Ana Sofia, Machado Sofia, Pinheiro Rita

A green approach for the development of novel chitosan hydrogels for food applications **334**

Kakofalou Vassiliki, Pitterou Ioanna, Katopodi Annita, Roussaki Marina, Tsatsouli Sofia, Zoumpoulakis Panagiotis, Detsi Anastasia

Exploring chitosan-whey protein concentrate-candelilla wax emulsions performance as a coating for kraft paper **335**

Vieira Jorge M., Lüdtke Fernanda, Martins Joana T., Vicente António A., Teixeira José

2. NEW METHODS AND NEW INSIGHTS IN FOOD COLLOIDAL SYSTEMS

The road towards animal-free cheese from recombinant casein: Novel preparation processes to engineer artificial casein micelles with tailored properties **4**

Antuma Laurens J., Boom Remko M., Kepler Julia K.

Exploring the Potential of Plant Proteins in Food: Insights from FoodProteinsDB **32**

Boire Adeline, Mameri Hamza, Nicolas Aurelie, Solé-Jamault Veronique, Renard Denis, Lechevalier Valerie, Le Floch-Fouéré Cecile, Rakotoson Michard, Pezennec Stephane

Heat induced aggregation and gelation of casein micelles. Influence of citrate and orthophosphate **35**

Matta Elie, Chassenieux Christophe, Nicolai Taco

Normal stress rheology (NSR) is a powerful tool to probe complex food structures **37**

Habibi Mehdi

Rational design of food processing methods with aid of neutron scattering **62**

Bouwman Wim G.

Atomic force microscopy of lignin-stabilized Pickering emulsions at the nanoscale **67**

Lovikka Ville A., Chen Lin, Figueiredo Patricia I., Mikkonen Kirsi S.

Pulsed electric field altered the structural and physicochemical properties of casein micelles **98**

Casanova Federico, Taha Ahmed, Stirke Arunas

Pulsed laser diffusion enhancement in liquids for cold extraction of coffee powder **114**

Friedenauer Tina, Tintrop Lucie, Ziefuss Anna R., Rehbock Christoph, Schmidt Torsten C., Barcikowski Stephan

In Situ Analysis of Structural Heterogeneities in Multi-phase Colloidal Systems Using Microfluidics, Confocal Raman Microscopy, and FT-IR Imaging Technologies **118**

Neofytos Dionysios D., Gregersen Sandra Beyer, Andersen Ulf, Corredig Milena

Investigation of aqueous foam from pea-based albumins using small-angle neutron scattering **121**

Li Rui fen, Chiappisi Leonardo, Corredig Milena

Use of κ -carrageenan/chitosan-based coatings containing completely or partially deodorized yellow or Oriental mustard extracts to control Salmonella enterica and spoilage bacteria on fresh chicken breasts **133**

Olaimat Amin N., Holley Richard A.

Formation and properties of iron-based colloidal systems in the presence of diacid acidity regulators **138**

Hosier Christopher A., Oehlers Eva, Velikov Krassimir P.

Processing Conditions Influencing the Foaming Ability during Vacuum Foam-Drying **163**

Osanloo Daniel Tristan, Mahlin Denny, Bjerregaard Simon, Bergenstahl Björn, Millqvist-Fureby Anna

Impact of acid addition and heterogeneous distribution of sodium chloride on saltiness in bread **177**

Lorén Niklas, Niimi Jun, Ahlinder Astrid, Nilsson Pingel Torben, Niimi Claudia, Höglund Evelina, Öhgren Camilla, Nielsen Tim

Structured lipid systems of fractionated milk fat and olive oil **181**

Prodromidis Prodromos, Moschakis Thomas

Water in Fat Filled Milk Powder - New Insights by Magnetic Resonance Spectroscopy **184**

[Afrough Armin](#), [Weihrauch Tanja N.A.](#), [Wilkens Juhl Dennis](#), [Bakalis Serafim](#), [Gade Malmos Kirsten](#), [Vosegaard Thomas](#)

Effects of high hydrostatic pressure treatment on structural, techno-functional and rheological properties of sesame protein from sesame cake **207**

[Gül Latife Betül](#), [Gül Osman](#), [Türker Sarıcaoğlu Furkan](#), [Atalar İlyas](#), [Törnük Fatih](#)

Food-grade bigel systems as carriers for bioactive carotenoids: Potential for extrusion-based 3D printing **242**

[Vitória Neves Bruna](#), [Silva Fernandes Andréssa](#), [Martelli Mazzo Tatiana](#), [Longo Elson](#), [Perrechil Fabiana A.](#), [Cavalcante Braga Anna Rafaela](#), [de Rosso Veridiana Vera](#)

Exploring the Semi-automated Table-top Transmission Electron Microscopy Technique MiniTEM™ for Characterization of Protein Aggregates **244**

[Västberg Amanda](#), [Sejwal Kushal](#), [Sintorn Ida-Maria](#), [Lidayova Kristina](#), [Elofsson Ulla](#)

Impact of high intensity ultrasound on the colloidal and functional properties of Vicia villosa protein isolate **247**

[Yousefi Negin](#), [Shokrollahi Yancheshmeh Behdad](#), [Gernaey Krist V.](#)

Development of edible coating with Chlorella vulgaris enriched with encapsulated bioactive compounds: Application in fresh raspberries **262**

[Mari Alexandra](#), [Manta Erofilli](#), [Gogou Eleni](#), [Krokida Magdalini](#)

Recovery of polyphenolic bioactive compounds from Rosmarinus officinalis L. and their encapsulation using electrospraying process **263**

[Vasileiou Christoforos](#), [Kavetsou Eleni](#), [Laina Konstantina Theodora](#), [Drosou Christina](#), [Krokida Magdalini](#)

Mapping Phase Distributions of Vacuum Foam-Dried Biologic in a Matrix System **264**

[Osanloo Daniel Tristan](#), [Mahlin Denny](#), [Bjerregaard Simon](#), [Bergenståhl Björn](#), [Millqvist-Fureby Anna](#)

Silk's Insights for Food Colloids: Investigating Stability of Cylindrical Silk Using A Multimodal Analysis Tool **273**

[Francis Juanita](#), [Dicko Cedric](#)

Chickpea proteins and cellulose nanocrystal interactions: Effect of nanocrystal concentration on protein aggregation **284**

[Walton Valentina](#), [Hidalgo Bastián](#), [Contardo Ingrid](#)

Anthocyanins extracted with NADES applied in potato starch inks for 3D food printing: evaluating starch retrogradation and color stability **285**

[Vannuchi Nicholas](#), [Braga Anna Rafaela](#), [Vera de Rosso Veridiana](#)

Dynamics of Water in Pickering Particles: Insights from Quasi Elastic Neutron Scattering and Thermal Analysis **292**

[Thekeridis Charalampos](#), [Nunes Bordallo Heloisa](#), [Poortinga Albert](#)

Rheological and tribo-rheometrical properties of milk and plant-based milk alternatives **297**

[Beutler Philipp](#), [Trat Martin](#), [Saavedra Isusi Gabriela I.](#)

Effect of ultrasonication on the mechanical properties and microstructure of yoghurt products **310**

[Prodromidis Prodromos](#), [Papadatos Dionysios](#), [Leliopoulou Niki](#), [Biliaderis Costas G.](#), [Moschakis Thomas](#)

Oil-in-Water Emulsions Stabilised with Native Corn Starch and Olive Leaves Phenolic Extract: a tribological study **311**

[Di Mattia Carla Daniela](#), [Farooq Umer](#), [Marco Faieta Marco](#), [Pittia Paola](#), [Scholten Elke](#)

Synchrotron X-ray microtomography of the freeze-drying process in-situ **312**

Bai Palmkron Shuai, Larsson Emanuel, Engqvist Jonas, Hall Stephen, Håkansson Sebastian, Wahlgren Marie, Bergenståhl Björn, Millqvist Fureby Anna

Understanding microstructure and physicochemical properties of yeast biomass-stabilized Pickering emulsions **321**

Narsipur Sowmya, Kew Ben, Ferreira Célia, El-Gendy Reem, Sarkar Anwasha

3. SUSTAINABLE FOOD COLLOIDS: CLEAN, ENVIRONMENTALLY FRIENDLY, PLANT-BASED

Enhancing the Quality of Plant-Based Meat Analogues: Effects of Methylcellulose on Mechanical Properties and Texture **18**

Saavedra Isusi Gabriela L, Glubrecht Valentin, Pernice Laurids, Stahl Valerie L.

Ethanol-treated rapeseed meal protein isolate mediated the stability of corn and olive oil-in-water emulsions **19**

Kalaydzhiev Hristo, Gandova Vanya, Ivanova Petya, Chalova Vesela

Dynamic High-Pressure processing and pH-shifting in the solubilization of Sesame isolate protein (Sesamum indicum L.) **20**

Valente Beatriz Lederman, De Castro Ruann Janser Soares, Cristianini Marcelo

High Pressure Processing coupled with pH- shifting to modulate the emulsifying behavior of Sesame (Sesamum indicum L.) isolate protein. **21**

Valente Beatriz Lederman, De Castro Ruann Janser Soares, Cristianini Marcelo

New Food-Grade Wall Material: Complex Coacervation Encapsulation Using Ora-pro-Nobis Mucilage **27**

Sviec Fernanda, Andreola Kaciane, Prata Ana Silvia

Understanding the structure formation of plant-based alginate bioinks in 3D-bioprinting **29**

Bäther Sabrina, Wagemans Anja M.

The effect of protein-pectin interactions on curdling phenomena of soy drinks in cappuccino applications **31**

Arapi Spyridoula, Pamase Adjeng Tunjung, de Meulenaer Bruno, Van der Meeren Paul

Commercial plant protein isolates: the effect of insoluble particles on gelation properties **36**

Janssen Senna W.P.M., Pouvreau Laurice, de Vries Renko J.

Novel plant-based bigel based on canola protein hydrogel and candelilla wax oleogel **65**

Moguiliansky Shay, Davidovich Pinhas Maya

RuBisCo: An edible and functional protein applied in emulsions **75**

Müller Maren, Holderer Olaf, Frielinghaus Henrich, Heiden-Hecht Theresia

Unlocking the physical-chemical aspects of roasting and sonication effects on flaxseed gum extract in O/W emulsion for a sustainable food systems **92**

Raoui El Mehdi, Einschütz Lopez Alexander, Subbiahdoss Guruprakash, Mistlberger-Reiner Agnes, Toca-Herrera Jose L., Pignitter Marc

Valorisation of Chickpea Aquafaba: Composition, Characterisation and Colloidal Properties of Natural Nanoparticles in Aquafaba for the Encapsulation of Chilli Oleoresins **108**

Sahin Selvi Secil, Hernández-Álvarez Alan J., Sadeghpour Amin, Ke Lijing, Ho Peter, Goycoolea Francisco M.

Functionalization of pea protein by chemical modification as a gelling agent **112**

Rosas-Ordoñez Lizbeth, Mendoza Sandra, Kozlu Ali, Baigts-Allende Diana

Enhancing the Textural and Rheological Properties of Fermentation-induced Pea Protein Emulsion Gels with Transglutaminase **115**

Masiá Carmen, Ong Lydiac, Logan Amy, Stockmann Regine, Gambetta Joanna, Jensen Poul Erik, Rahimi Yazdi Saeed, Gras Sally

Effect of acid hydrolysis on pectin extraction and films developed from apple juice processing by-products **120**

Kozlu Ali, Baigts-Allende Diana Karina, Klojdová Iveta

Jellyfish biomatrix: A novel multi-functional food stabilizer **122**

Thorborg Pedersen Mie, Via Matías A., Vilgis Thomas A., Clausen Mathias P.

Triumfetta cordifolia gum: a plant-based hydrocolloid with an interesting potential in the formation and stabilization of oil-in-water emulsions **130**

Fanwa Michèle N., Malhiac Catherine, Hucher Nicolas, Cheumani Arnaud M.Y., Ndikontar Maurice K., Grisel Michel

pH and salt dependent complexation between rapeseed cruciferin and napin **140**

Moutkane Maria, Mudau Colleen, Nicolai Taco, Chassenieux Christophe

Heat-induced aggregation and gelation of rapeseed cruciferin and napin: Effect of heat treatment as function of pH, ionic strength and concentration **141**

Mudau Colleen P.K., Moutkane Maria, Chassenieux Christophe, Nicolai Taco

Air bubble powders for use in foods **145**

Wang Qimeng, Poortinga Albert, Cheng Crystal, Li Yuan, Scholten Elke, de Vries Renko

Protein functionality in high-protein plant-based cheese **168**

Dobson Stacie, Marangoni Alejandro G.

Impact of protein properties on the functionality of plant-based cheeses formulated with saturated and unsaturated fat **189**

Sanders Cameryn, Dobson Stacie, Marangoni Alejandro G.

Improvements on the Functionality of Native Legume Starch Gels Through Amylose-Lipid Complexation **192**

Koekuyt Henry A., Dobson Stacie, Marangoni Alejandro G.

Correlating physicochemical properties of pea hull dietary fiber and pea protein blends to their in vitro fecal fermentation **200**

Karlsson Jakob, Lopez-Sanchez Patricia, Marques Tatiana, Krona Annika, Ström Anna

Lipid oxidation and co-oxidation reactions in oleosome dispersions from various sources: Which constituents are involved? **202**

Koomen Jolijn, Birault Lucie, Kermarrec Alice, De Lise-Braga Thomas, Claudel Jérémy, Bourlieu-Lacanal Claire, Valentin Romain, Lacroux Eric, Meynier Anne, Berton-Carabin Claire

Synergic interaction between chitosan and peptides from shrimp side-streams (*Pandalus borealis*) before and after pulsed electric field treatment **203**

Sales Queiroz Lucas, Veliji Driton, Jesen Emil Fogh, Casanova Federico, Jessen Flemming, Jacobsen Charlotte, Gringer Nina

Comparative study of solubility and oil-water interfacial properties of laboratory and commercial pea protein isolates (PPIs) with pH-shifting treatments **210**

Fang Di, Li Hao, Van der Meeren Paul

Incorporation of levant extracts into dairy model products. **212**

Antoniadou Maria D., Vareltzis Patroklos K., Ritzoulis Christos

Moringa oleifera proteins as pickering stabilizers **215**

Azmi Namrah, Akanno Andrew, Knaapila Matti, Rennie Adrian, Rweyemamu Leonard, Fossum Jon Otto

Spirulina as a sustainable protein source of oil in water chickpea formulations **218**

Fratelli Camilly, Nunes Maria Cristiana, Raymundo Anabela, Cavalcante Braga Anna Rafaela

Effects of different anti-freezing agents on ice crystal size and physical properties of low sugar ice cream **223**

Wang Qi, Sala Guido, Scholten Elke

Polysaccharide/zein/PEO electrospun fibers to simulate the fibrillar structure for meat analogs **226**

Trindade Leticia Guerreiro, Perrechil Fabiana, Cavalcante Braga Anna Rafaela

Interfacial and emulsifying properties of olive and sunflower protein hydrolysates **227**

García-Moreno Pedro J., Maldonado-Valderrama Julia, Jones Nykola C., Hoffmann Søren V., Guadix Emilia M., Pérez-Gálvez Raúl

Emulsifying activity of plant-protein hydrolysates obtained from by-products of the brewery, whiskey and winery industries: stabilization of echium oil-in-water emulsions **229**

Sisconeto Bisinotto Mariana, Castro Inar, Maldonado-Valderrama Julia, Guadix Emilia M., García-Moreno Pedro J.

Spray dried Burity oleosomes: effect of different wall materials **232**

de Figueiredo Furtado Guilherme, da Silva Melo Fabiano, Dupas Hubinger Miriam

Protein-glutaminase enhances physical stability of plant-based milk substitutes against thermal and aqueous environmental stresses **234**

Ishii Toya, Matsumura Yasuki, Yabumoto Riona, Yachi Hiroyuki, Sakai Kiyota, Okuda Keita, Okada Masamichi, Yamaguchi Shotaro

Relating the colloidal state of oat proteins to their food foam stabilizing potential **236**

Janssen Frederik, Wouters Arno G.B.

Functional, pasting, and thermal properties of starch isolates from three rice variants **240**

Hebshy Essam, Adeniji Mopelola O., Aanuoluwapo F.Paul, Buchanan Dominic, Rice Julie, Oyeyinka Samson A.

Composition and emulsifying properties of pea and faba bean protein ingredients as influenced by the processing route: Current state of the art **246**

Koomen Jolijn, Boire Adeline, Meynier Anne, Berton-Carabin Claire

Thermal properties and molecular features of enriched maize flour with grape pomace used in extrusion process **249**

Mironeasa Costel, Ungureanu-luga Mădălina, Mironeasa Silvia, Oroian Mircea-Adrian

Effect of partial substituting maize flour with seedless grape pomace from white and red variety on the degree of starch gelatinization and molecular characteristics **252**

Mironeasa Silvia, Ungureanu-luga Mădălina, Mironeasa Costel, Oroian Mircea-Adrian

Assessing changes in maize-based mixtures formulated with whole and seedless white grape pomace by means of DSC and FTIR analysis **253**

Ungureanu-luga Mădălina, Mironeasa Silvia, Mironeasa Costel, Oroian Mircea-Adrian

Effect of protein extraction and extrusion on the functional properties of legume protein **254**

Yusoff Anida, Amir Nur Azzahrah, Noor Hisham Nur Annisa, Murray Brent S., Hernandez-Alvarez Alan Javier

Modification of Vicia villosa protein isolate using Cold atmospheric plasma: Impact on functional and interfacial properties **257**

Shokrollahi Yancheshmeh Behdad, Yousefi Negin, Mohammad Amin Mohammadifar

Molecular mobility of Xanthan gum hydrocolloid and hydration effects **275**

Tegopoulos N. Sokratis, Papagiannopoulos Aristeidis, Kyritsis Apostolos

Hydration effects on thermal transitions of xanthan gum hydrocolloid **276**

Tegopoulos N. Sokratis, Papagiannopoulos Aristeidis, Kyritsis Apostolos

Potential of ora-pro-nobis (*Pereskia aculeata* Miller) fruit for protein extraction **277**

Silva Sérgio H., D'Ávila Gabriela P., Sangalli Juliano R., Neves Isabelle C.O., Pinho Samantha C.

Use of carob (*Ceratonia siliqua*) ingredients to increase the efficiency of alginate bead encapsulation of lactic acid bacteria **278**

Pyrovolou Katerina, Sklavou Alexandra, Christodoulou Kyriaki-Danai, Liapi Panagiota, Konteles Spyros, Stavropoulou Natalia, Tegopoulos N. Sokratis, Kollia Panagoula, Batrinou Anthimia

Effects of guar gum on the surface and conformational characteristics of quinoa protein isolate in aqueous dispersions **283**

Gutierrez Sofía, Caridi Valentina, Enrione Javier, Contardo Ingrid

Aqueous extraction of dietary fibers from wheat shorts under subcritical conditions and incorporation into cocoa flavored milk for κ -carrageenan replacement **296**

Kalogeridis Eleftherios, Mouzakis Christos-Konstantinos, Kotsiou Kali, Biliaderis Costas G., Lazaridou Athina

Lactic acid bacteria as building blocks for food structure **317**

Risbo Jens, Whitehead Kathrin, Jiang Xiaoyi, Arneborg Nils

Application of Plant-Based Microgel Reinforced Hydrogels for Fat Replacement **320**

Burberry Alice, Calahorra Andrea Araiza, Sarkar Anwasha

Improvement of emulsification and interfacial properties of yeast cytoplasmic proteins through enzymatic modification **326**

Light Kelly, Blecker Christophe, Karboune Salwa

Rheological properties of novel hydrocolloids: the case of Persian gum **337**

Athansiadou Anna, Kadkhodae Rassoul, Ritzoulis Christos, Zinoviadou Kyriaki G.

Mild Aqueous Extraction of Hemp Seed Oleosomes: Tuning Hempseeds Oleosomes Cream properties by adding Hempseeds Protein Concentrate **338**

Oyarzún Mauricio, Gouseti Ourania, Jensen Poul Erik, Risbo Jens

Wednesday 17 April 2024, 19:10 - 20:10

4. COLLOIDS IN HUMANS: DELIVERY SYSTEMS, BIOAVAILABILITY, DIGESTION AND ORAL PROCESSING

Interactions between hydrocolloids, phenolic acids, and mucins: Towards a molecular-level astringency model **28**

[Theocharidou Athina](#), [Mourtzinou Ioannis](#), [Ritzoulis Christos](#)

Development of highly stable phytosterol oleogel particle-based emulsions with improved bioaccessibility of B-carotene **58**

[Ashkar Areen](#), [Davidovich Pinhas Maya](#)

Black tea increases the threshold of greasiness sensation and enhances emulsification capacity of human saliva **72**

[Ke Lijing](#), [Ge Pingqian](#), [Zhu Yang](#)

Mucoadhesion ability of protein and starch from lotus (*Nelumbo nucifera* Gaertn.) seeds, relative to milk casein, gelatine and gum arabic as well-recognized mucoadhesive biopolymers **89**

[Hebishy Essam](#), [Zuo Jiabin](#), [Olatilewa Adebukola](#), [Abunsango Deji](#), [Onarinde Bukola](#), [Miao Song](#), [Lu Xu](#)

Formulating cellulose nanocrystal Pickering emulsions and their impact on lipid digestion **102**

[Zhang Lin](#), [Bajka Balazs](#), [Dreiss Cecile](#)

Saliva: A foamy, stretchable hydrocolloid that is always present in our food **225**

[Velopoulos Ioannis](#), [Ritzoulis Christos](#)

In vitro protein digestibility of different soy-based products: Effect of microstructure, physico-chemical properties and protein aggregation **255**

[Li Mengdi](#), [Wang Jing](#), [Zhang Jiayu](#), [Lv Ying](#), [Guo Shuntang](#), [Van der Meeren Paul](#)

Adsorption and Consumption of Hydrolysed Pectins by Gut Bacteria **280**

[Tizzanini Giovanni](#), [Karlsson Jakob](#), [Marques Tatiana](#), [Lopez S. Patricia](#), [Ström Anna](#)

Nanoemulsion as a promising strategy to enhance the bioaccessibility of beta-carotene obtained from *Dunaliella salina* **309**

[Sousa Vitor](#), [Lüdtke Fernanda L.](#), [Toledo Hijo Ariel A.C.](#), [Dias Óscar](#), [Vicente António A.](#), [Pinheiro Ana C.](#), [Geada Pedro](#)

5. EMULSIONS, FOAMS, GELS: FROM CLASSICAL APPROACHES TO NOVEL SYSTEMS

Antioxidant properties of thymol nanocarriers in omega-3 enriched emulsions **6**

Sedaghat Doost Ali, Joolaei Ahranjani Parham, Van der Meeren Paul

Interfacial properties and functionality of lupin protein-pectin complexes at the air-water interface **15**

Ma Xingfa, Habibi Mehdi, Sagis Leonard M.C.

Conjugation of potato protein with flavonoids to influence nanostructure and emulsifying properties **22**

Nimaming Nisufyan, Sadeghpour Amin, Murray Brent S., Sarkar Anwasha

Stabilization of W/W (PEG/DEX) emulsions by β -lactoglobulin nanogel particles: Influence of polymer molecular mass and particle size **30**

Balis Andrzej, Gochev Georgi, Truzzolillo Domenico, Zawala Jan

Release of anthocyanins from alginate hydrogel films coated with various macromolecules **40**

Williams Patrick, MacWilliams Stephanie V., Rozenberga Linda, Beheshti Amir, Brewer Kyle, Blencowe Anton, Beattie David A., Krasowska Marta

How bulk liquid viscosity shapes capillary suspensions **53**

Jarray Ahmed, Haessig Christoph, Landman Jasper, Scholten Elke

Towards clean-label meat and dairy alternatives: Tuning pea protein gelling properties by covalent modification with phenolic compounds **63**

Faber Iris, Povureau Laurice, van der Goot Atze Jan, Keppler Julia

Emulsions stabilised via the use of mixed gels **70**

Roberts-Harry Ieuan J., Velikov Krassimir P.

Gelled waters for swallowing disorders: rheological, chemical characterizations and sensory perception **78**

Brunel Alexy, Paquin Ludovic, Gauffre Fabienne, Vié Véronique, Thibault Ronan, Saint-Jalmes Arnaud

Effect of oil interesterification, rice bran wax and monoglyceride addition on melting, structural, rheological and stability properties of oleofoams based on sunflower and coconut oils **87**

Hebishy Essam, Alebiosu Mustapha, Olaniyan Olaniyi, Miao Song

How to make soft Ca²⁺-assisted pea protein gels using mild heating? **90**

Ren Wenbo, Ahrné Lilia, Gunes Deniz Z.

Design of plant-based bigels made from agar, κ -carrageenan, sunflower wax, and monoglycerides **96**

Dimakopoulou-Papazoglou Dafni, Zampouni Konstantina, Katsanidis Eugenios

Characterizing the microstructure and physical properties of bigels incorporating agar, κ -carrageenan, candelilla wax and monoglycerides in several edible oils **97**

Giannakaki Foteini, Dimakopoulou-Papazoglou Dafni, Katsanidis Eugenios

Microscopic Droplet Quantification of Food Colloidal Systems **107**

Bonilla Jose C., Saalbrink Jens, Clausen Mathias P.

Structure, Rheological Behavior, and Foam-Stabilizing Potential of Kidney Bean Proteins at the Air-Water Interface **117**

Yin Wanting, Sagis Leonard M.C.

On the (Micro)Rheology of Lactoferrin/ β -Lactoglobulin Coacervates **165**

Ben Messaoud Ghazi, Soussi Hachfi Rima, Rousseau Florence, Hamon Pascaline, Famelart Marie H., Bouhallab Saïd

Emulsifying and foaming properties of *Chlorella sorokiniana* biomass **172**

Georgiou Despoina, Charisis Aggelos, Papapanagiotou Georgia, Theoharidou Athina, Ritzoulis Christos, Chatzidoukas Christos, Kalogianni Eleni P.

Inhibition of lipid oxidation in soybean oil-in-water emulsions and bulk oil using acid-hydrolyzed extracts of sugar beet leaves **208**

Ebrahimi Peyman, Bayram Ipek, Lante Anna, Decker Eric A.

Preparation, Rheological Behavior, and Application of Novel Dual-Structured Emulsions Made from Natural Supramolecular Gelators **209**

Li Qing, Wan Zhili, Yang Xiaoquan, Van der Meeren Paul

Interfacial placement of antioxidants in O/W emulsions via their covalent bonding to emulsifiers **211**

Leontidis Epameinondas, Panagi Maria

Impact of caffeic acid and mannitol on the anthocyanins stability of pomegranate juice incorporated in gels of different types of pectin **213**

Gardeli Chrysavgi, Valsamaki Eirini, Biskini Dionysia

Unlocking the Potential of Novel Peas for Food Industry Applications **214**

Ng'ang'a Rispah N., Rayner Tracey, Cockram Giusy, Perez-Moral Natalia, Ryden Peter, Booth Catherine, Østergaard Lars, Wilde Pete, Domoney Claire, Edwards Cathrina H.

Incorporation of coenzyme Q10 in emulsion-filled gels of soy protein isolate: microstructural aspects and in vitro static digestion **219**

Jomori Lais K., França Julia M., Oliveira Gustavo C., Turatti Roger C., Callejon Daniel R., Brito-Oliveira Thais C., Pinho Samantha C.

Development of electrosprayed particles for the stabilization of food Pickering emulsions **228**

Rahmani-Manglano Nor E., Fernández-Rodríguez Miguel Ángel, Maldonado-Valderrama Julia, Guadix Emilia M., García-Moreno Pedro J.

Rheological behavior of starch gels filled with curcumin-loaded Pickering emulsions **230**

Ramos Giselle V.C., Rabelo Marya E.A., Pinho Samantha C., Moraes Izabel C.F.

Physicochemical characterization and emulsifying capacity of okra proteins **239**

Karakasidis Theodoros, Lousinian Sylvie, Kontogiorgos Vassilis, Kalogianni Eleni P., Ritzoulis Christos

Towards hybrid protein foods: Acid-induced gels from micellar casein and pea protein mixtures **241**

Xia Wenjie, Via Matias, Ahrné Lilia

Determining Mesh Size in Polysaccharide-Based Hydrogels **250**

Maire du Poset Aline, Fouilloux Pierre, Bodart Philippe, Börjesson Mickaela, Lebrét Adrien, Ström Anna, Cousin Fabrice, Assifaoui Ali

Emulsion-filled protein gels incorporating coenzyme q10 (coq10) and vitamin b12 as potential hybrid food matrices **258**

Rocha Marcela R., França Julia M., Baptista, Debora P., Gigante, Mirna L., Pinho Samantha C.

Study of the antimicrobial effect of the green biocide DCOIT encapsulated by SiO₂ nanoparticles for pest protection **259**

Issayeva Assem, Sharipova Altytay, Babayev Alpamys, Aidarova Saule

Influence of Hydrocolloids on Pea Protein Concentrate vs Isolate Performance in Simple High-Protein Plant-based Food Model **261**

Gaber Sara M., Jamal Nimra, Dessev Tzvetelin, Knutsen Svein H.

Effect of Pulsed Electric Field on Characteristics of Cheese Emulsions **265**

Altay Ipek, Feyissa Aberham Hailu, Sloth Jens J., Mohammadifar Mohammad Amin

Development of Polyurea Microcapsules for Encapsulation of Natural Oils **267**

Avdeliodi Efterpi, Derizioti Sofia, Papadopoulou Ioanna, Arvaniti Aikaterini, Kallitsis Joannis K., Bokias Georgios

Physico Chemical Analysis of Commercially Available Natural Waxes **268**

Mannweiler Sebastian H., Schweizer Pia, Salminen Hanna, Weiss Jochen

Survey of Techno-Functional and Surface Properties of Different Microbial Proteins **269**

Scheuerer Theresa, Ness Christina, Köseoglu Lara, Weiss Jochen

Plant-based ingredient blends: a comprehensive approach to model and formulating next-generation sustainable yogurts **271**

Drositi Iolanthi Anna, Barone Giovanni, Bang-Berthelsen Claus Heiner, Ahrne Lilia

Antioxidant and Prooxidant Activities of α -Tocopherol and Black Carrot Anthocyanins in Flaxseed Oil-in-Water Emulsions **272**

Klinger Evelyn, Salminen Hanna, Bause Karola, Blank Eva M., Weiss Jochen

Small-Angle Scattering of corn, rye and wheat arabinoxylan gels **279**

Ladd-Parada Marjorie, Wahlström Niklas, Carlsson James, Sivan Pramod, Vilaplana Francisco

Pickering emulsions stabilized with kaolin clay particles **286**

Adilbekova Akbota O., Yertayeva Ayaulym, Bokenbay Damira, Ospanova Zhanar B., Musabekov Kuanyshibek B.

Oregano and thyme oil emulsion-based coatings for food application: Impact of droplet size on Atlantic bonito (*Sarda sarda*) fillets' shelf-life **289**

Lüdtke Fernanda L., Martins Joana T., Marx Ítala, Vicente António A., Vieira Jorge M.

Bigels of food grade as potential materials for extrusion-based 3D food printing **291**

Fernandes Andressa, Zepka L., Jacob-Lopes E., Roca M., De Rosso V.

Fine-tuning carotenoid-enriched bigel formulations: exploring the influence of oleogel: hydrogel ratio on rheological properties and 3D food printing **294**

Ramos-Souza Carolina, Fernandes Andressa Silva, Bonsanto Fabiana Perrechil, De Rosso Veridiana V.

Adsorption Layer Properties and Foam Behaviour of Whey Protein Isolate (WPI) Modified by Different Types of Vacuum Cold Plasma (VCP) **300**

Mohammadi Elham Ommat, Yeganehzad Samira, Hesarinejad Mohammad Ali, Dabestani Mohsen, von Klitzing Regine, Schneck Emanuel, Miller Reinhard

Towards Green Nanotechnology: Chamomile-Natural Deep Eutectic Solvent extract for the development of nanocomposite alginate-silver nanoparticles hydrogels **302**

Pitterou Ioanna, Malliaraki Aikaterini, Tzavara Athina, Tzani Andromachi, Tsiantas Konstantinos, Batrinou Anthimia, Fountzoula Christina, Kriebardis Anastasios, Zoumpoulakis Panagiotis, Detsi Anastasia

Tribological Behaviour of Olive Oil-Based Emulsions Stabilised with Pea Protein Isolates **304**

Iervese Francesco, Khan Mujahid Hassan, D'Alessio Giulia, Pittia Paola, Di Mattia Carla Daniela

Gelation of Arabinoxylan Extracted from Corn Bran at Different pH Conditions for Food Applications **305**

Carlsson James, Ladd Parada Marjorie, Wahlström Niklas, Vilaplana Francisco

Effect of high-pressure homogenization treatments on pea proteins gelling properties: a case study on a model spreadable plant-based product **306**

D' Alessio Giulia, Iervese Francesco, Valbonetti Luca, Faieta Marco, Pittia Paola, Di Mattia Carla Daniela

Effect of some polyphenol-rich extracts obtained from forest berries with antioxidant potential on linoleic acid emulsion **314**

[Predescu Nicoleta C.](#), [Stefan Georgeta](#), [Rosu Petronela M.](#), [Goran Gheorghe V.](#), [Sărăcilă Mihaela](#), [Untea Arabela E.](#), [Papuc Camelia](#)

The effects of length distribution of the MHC and its fragments on fracture strength of fish meat gel **315**

[Okamoto Yuga](#), [Kominami Yuri](#), [Izawa Shunsuke](#), [Nakamizo Ryoko](#), [Matsuoka Yoko](#), [Ueki Nobuhiko](#), [Wan Jianrong](#), [Watabe Shugo](#), [Ushio Hideki](#)

Starch-lauric acid complex-stabilised Pickering emulsion gels enhance the thermo-oxidative resistance of flaxseed oil **316**

[Feng Yinong](#), [Zhang Bin](#), [Huang Qiang](#), [Van der Meeren Paul](#)

Understanding the Compatibility Between Soluble Fiber and Casein for the Development of Functional Foods **319**

[Alvarez Valente B.](#), [Sarantis Stelios D.](#)

Mimicking the melting profile of adipose tissue through a controlled coalescence in HIPEs **328**

[Konings Gijs D.](#), [Scholten Elke](#), [Bitter Harry J.](#), [Nikiforidis Costas V.](#)

Self-assembling peptide hydrogels with encapsulated porphyrin chromophores are anti-infective and biocompatible and display antimicrobial efficiency **331**

[Mitraki Anna](#), [Apostolidou Chrysanthi Pinelopi](#), [Kokotidou Chrysoula](#), [Platania Varvara](#), [Nikolaou Vasilis](#), [Landrou Georgios](#), [Nikoloudakis Emmanouil](#), [Charalambidis Georgios](#), [Chatzinikolaidou Maria](#), [Coutsolelos G. Athanassios](#)

Olive Oil-Water Emulsions Stabilized by Apple Pomace used as a Solid Fat Substitute in Biscuits **333**

[Sereti Vasileia](#), [Kotsiou Kali](#), [Nouska Chrysanthi](#), [Patras Antoanela](#), [Biliaderis Costas G.](#), [Lazaridou Athina](#)

The use of starch and β -lactoglobulin composite hydrogels as frameworks for preserving c-phycoyanin **336**

[Jovanovic Zorana](#), [Gligorijevic Nikola](#), [Annighöfer Burkhard](#), [Dudzinski Daniel](#), [Nikolic Milan](#), [Pavlović Vladimir](#), [Lević Steva](#), [Brûlet Annie](#), [Assifaoui Ali](#), [Combet Sophie](#), [Minic Simeon](#)

Design structure of plant protein-based gels for sustainable food **339**

[Diao Congcong](#), [Habibi Mehdi](#), [Velikov Krassimir](#), [Schall Peter](#)

Folic acid-loaded Hydroxypropyl methylcellulose microparticles produced by electrospray: physicochemical characterisation and in vitro gastrointestinal assessment **340**

[Marques Arlete M.](#), [Gonçalves Catarina](#), [Teixeira José A.](#), [Pastrana Lorenzo M.](#), [Cerqueira Miguel A.](#)

Stability of spreadable processed whey cheese with guar gum addition, as affected by storage time and temperature **342**

[Chatziantoniou Soumela](#), [Thomareis Apostolos](#)

6. FROM NANO TO MACRO: INTERFACIAL STRUCTURE VS COLLOIDAL STABILITY AND PROPERTIES

Air-water interface properties and foam stabilization by mildly extracted lentil protein **3**

Shen Penghui, Peng Jinfeng, Sagis Leonard M.C., Landman Jasper

Characterisation and interfacial properties of foams stabilised by mung bean proteins and pectin **39**

Buathongjan Chonchanok, Sagis Leonard M.C., Landman Jasper

The dual functionality of di-acylglycerides in lipid systems **56**

Wagner Karin, Davidovich Pinhas Maya

Tuning interfacial properties of protein-phospholipid stabilised oil-water interfaces by changing the phospholipid headgroup or fatty acid chain **106**

Risse Kerstin, Bridot Jean-Luc, Drusch Stephan

Relation between critical coalescence pressure of oil droplets and antifoam activity in foamed soy protein emulsions **109**

Roebroek Tobias M., Wouters Arno G.B., Gunes Denis Z.

De-emulsification of a waste emulsion formed during processing of fish wastes **153**

Goudarzi Mostafa, Rustad Turid, Shardt Nadia, Madadlou Ashkan

Investigating the effect of pH, heating and NaCl on the stability of nanoparticles formed from ethanol pre-treated whey proteins **183**

Charitou Garoufalia, Moschakis Thomas

Relationship between dry heat induced protein changes and heat stability of recombined filled evaporated milk emulsions: effects of relative humidity on low heat skim milk powder **205**

Zhao Zijun, Van der Meeren Paul

Understanding Structural Changes in Phycocyanin-Pectin Complexes: Impact of Esterification and pH **266**

Buecker Stephan, Bartmann Laura, Bussler Sara, Gibis Monika, Weiss Jochen

Concentration-Dependent Effects of Sunflower Oleosomes on an Air-Water Interface **341**

Aliyari Amin, Ratcliff Liam, di Bari Vincenzo, Gray David

7. SURFACTANTS, LIPIDS, MACROMOLECULES, PARTICLES: ADSORPTION, INTERACTIONS AND SELF-ASSEMBLY

Escin: a natural foam performance booster and interfacial plasticizer - studied in WPI-escin mixtures using interfacial rheology and visualization approaches **5**

[Yang Jack, Giménez-Ribes Gerard, He Qixin, Habibi Mehdi, Sagis Leonard M.C.](#)

Application of multilayer emulsions stabilized with carob protein hydrolysates and pectin for the microencapsulation of linseed oil by spray drying **8**

[Lopes de França Pedro Renann, Torres Gontijo Larissa, Favaro Nascimento Raul, Lopes da Cunha Rosiane, Kurozawa Louise Emy](#)

Green amphiphilic xanthan derivative: a promising multifunctional ingredient in the stabilization of oil-in-water emulsions **54**

[Abou Dib Mira, Gore Ecaterina, Grisel Michel](#)

Interfacial adsorption behaviour of phosphatidylcholine-depleted (PC-depleted) lecithin as low-HLB emulsifier in W1/O/W2 double emulsions **57**

[Hu Yulin, Van der Meeren Paul](#)

Pickering emulsions emulsified with protein-based Janus particles for food applications **73**

[Thang Tran, Khanittha Chinarak, Worawan Panpipat, Betül Yesiltas, Ana C. Mendes, Ioannis S. Chronakis, Charlotte Jacobsen](#)

Molecular Structure and Interactions of Whey Protein Aggregates in Dispersion and Effects of Heat Treatment **135**

[Koch Pernille, Nielsen Søren B., Hougaard Anni B., Bakalis Serafim](#)

The competition between endogenous phospholipids and proteins from pea protein ingredients rules their interfacial properties **155**

[Keuleyan Eléna, Kergomard Jeanne, Gélébart Perrine, Beaumal Valérie, Meynier Anne, Berton-Carabin Claire, Riaublanc Alain](#)

Oleosomes (Lipid Droplets) as carriers of hydrophobic therapeutics into model cell membranes (liposomes) **156**

[Vardar Umay Sevgi, Bitter Johannes H., Nikiforidis Costas](#)

Dynamic assemblies of milk protein related to lactose crystallization in the solid state and their impact on the formation of colloidal dispersions **157**

[Qi Xiaowei, Povey Megan, Kirkensgaard Jacob Judas Kain, van den Berg Frans W.J., Malmos Kirsten Gade, Risbo Jens, Bakalis Serafim](#)

Study of the enzymatic hydrolysis of Tattarodes sagittatus by-products via interfacial tension measurements **173**

[Tzika Paraskevi, Georgiou Despoina, Kalogianni Eleni P.](#)

Effect of emulsification temperature in structured emulsions with monoglycerides and Tween 20 **179**

[Prodromidis Prodromos, Katsanidis Eugenios, Biliaderis Costas G., Moschakis Thomas](#)

Boosting Bubbles in Non-Alcoholic Beers: The Potential of Protein Hydrolysates, Beer Proteins, Iso-alpha-acids and CO₂ **191**

[Bossaerts Liezl, Langenaeken Niels A., Wouters Arno G.B., Courtin Christophe M.](#)

The application of fucoidan for the encapsulation of *Saccharomyces cerevisiae* K2 toxin **206**

[Galinskaitė Aistė, Kostiukevič Patrycija, Gruškienė R., Kavleiskaja Tatjan, Vepškaitė-Monstavičė Iglė, Servienė Elena, Sereikaitė Jolanta](#)

Interactions between hexadecyltrimethylammonium bromide and poly(acrylic acid): effect of the polymer molecular weight **220**

Chen Li-Jen, Tsui Hung-Wei, Wang Mu-Rong, Yen Hsiao-Yun

Influence of sonication on protein-polyphenol interaction and resulting protein functionalization **235**

Heyn Timon R., Wittmüss Maria, Moghadam Maryam, Schwarz Karin

Physico-Chemical Characterization of Commercial Pea Protein Isolates for the Development of Vegan Meat Product Analogs **243**

Schumacher Till, Gibis Monika, Weiss Jochen

RESIDUAL LIPIDS PRETREATMENT TOWARDS ALTERNATIVE FUELS PRODUCTION-POSTER PRESENTATION **248**

Kosma Ioanna, Chryssikou Loukia, Bezergianni Stella, Georgantas Dimitris

Impact of alginate block type on the structure and physicochemical properties of curcumin-loaded complex biopolymer nanoparticles **256**

Li Zhenpeng, Fu Yuying, McClements David Julian, Li Teng

Colloid-chemical properties of surfactant-nanoparticles mixtures in bulk and at the water/air interface **260**

Amankeldi Fariza, Sharipova Altytay, Pourafshary Peyman, Aidarova Saule

Changes in the molecular organization of model lipid membranes after geraniol incorporation **318**

Mach Marzena, Urbańczyk Dominika

Effect of pH and ionic strength on the physicochemical properties of oat protein-polysaccharide self-assembly **323**

McLauchlan Jennifer, Tyler Arwen, Chakrabarti Buddhapriya, Orfila Caroline, Sarkar Anwesha

Thermal treatment on lactoferrin affecting mucin-binding properties **325**

Hazt Bianca, Read Daniel, Harlen Oliver, Poon Wilson, O Connell Adam, Sarkar Anwesha

Preparation of electrospun fibers from aqueous mixtures of lysozyme and maltodextrin and morphology of the fibers **327**

Schumacher Till, Rumig Heiko, Krell Johannes, Weiss Jochen, Gibis Monika

Patchy particles as a model system to understand protein aggregation **332**

Liu Qiuyu, David Anthony, Velikov Krassimir, Habibi Mehdi, Schall Peter



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Due to the high participation in the 19th Food Colloids Conference two special Issues will be dedicated to the conference (i) a special issue of Food Hydrocolloids (Elsevier) and (ii) a special issue of Colloids and Interfaces (MDPI). The Special Issues will compile original works presented in the Conference which will be published after peer-review process.

Special Issue title:

19th Food Colloids Conference: Using Colloid Science to Find New Sustainable Solutions in Food



Dear Colleagues,

This special issue compiles original works presented in the 19th Food Colloids Conference: Using Colloid Science to Find New Sustainable Solutions in Food. This year, the Food Colloids Conference is organized by the International Hellenic University on 14 -18 April 2024, in Thessaloniki, Greece, continuing the long history of these conferences, which started in 1986 in Leeds. The conference focuses on basic and applied interdisciplinary research on food colloids, the physical chemistry aspects of these systems and their applications (e.g. human nutrition, food industry). This year's conference has a special focus on sustainability with clean, environmentally friendly, plant-based approaches. Furthermore, it extends the applications of food colloids to non-food systems, including strongly related applications in biomedicine, pharmaceuticals, cosmetics and packaging.

Guest Editors



Prof. Dr. Eleni P. Kalogianni

Department of Food Science and Technology, School of Geotechnical Sciences, International Hellenic University, Sindos, Greece
Interests: lipids, interfacial properties, food science and technology



Dr. Aristotelis Xenakis

Institute of Chemical Biology, National Hellenic Research Foundation, Athens, Greece
Interests: Nanoformulations, Microemulsions, Colloids



Prof. Dr. Epameinondas Leontidis

Department of Chemistry, University of Cyprus, Nicosia, Cyprus
Interests: Colloid physical chemistry, soft matter, interfacial chemistry

Special Issue title:

Food Colloids III



*colloids
and interfaces*

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Dear Colleagues,

Food colloids comprise nowadays a unique biological and technological platform to address one of the major challenges of modern society such as the development of healthier and more sustainable processed food products. Several scientific areas converge in the rational design of these products which relies ultimately upon a deep knowledge of the molecular, physicochemical, interfacial and colloidal properties of food ingredients, their interactions and the dynamics of the systems. Food ingredients comprise principally proteins, surfactants, lipids and polysaccharides while the range of colloidal structures present in food products is extremely vast and constantly expanding (foams, emulsions, gels, particles, micelles etc.). Increasing nutrient bioavailability, reducing fat intake, controlling food digestibility, and gut health etc. are some of the challenges faced by current research in food colloids. Furthermore, advances in physicochemical and microbial effects in relation to colloidal systems and their applications in food processing and packaging can have a great impact on food quality, safety and nutrition.

This Third Special issue is a collection of original works presented in the 19th Food Colloids Conference: Using Colloid Science to Find New Sustainable Solutions in Food organized by the International Hellenic University on 14 -18 April 2024, in Thessaloniki, Greece.

This Special Issue, in alignment with the 19th Food Colloids Conference, in addition to the multidisciplinary approach on food colloids outlined **above gives a special focus on sustainability where colloids provide clean, environmentally friendly, plant-based solutions.**

Guest Editors



Prof. Dr. Eleni P. Kalogianni

Department of Food Science and Technology, School of Geotechnical Sciences, International Hellenic University, Sindos, Greece

Interests: lipids, interfacial properties, food science and technology



Dr. Julia Maldonado-Valderrama

Biocolloid and Fluid Physics Group, Department of Applied Physics, University of Granada, Granada, Spain

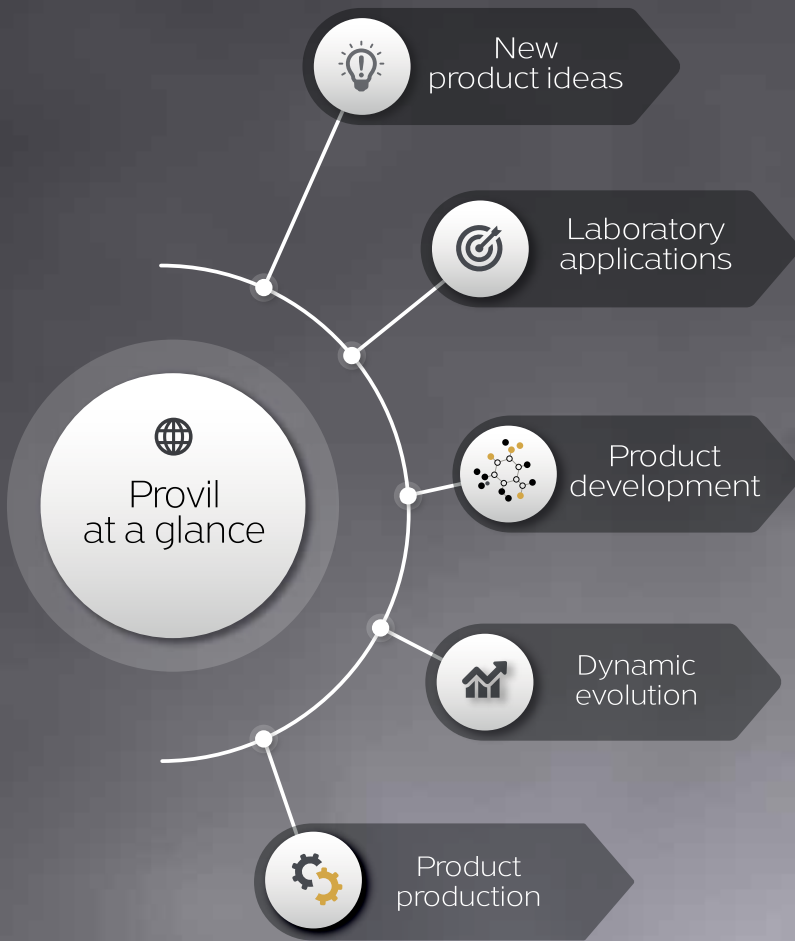
Interests: Surface tension, interfacial rheology, monolayer, foams, emulsions, Atomic Force Microscopy, food science, digestion, colloids



Dr. Reinhard Miller

Institute for Condensed Matter Physics, Technical University Darmstadt, Darmstadt, Germany

Interests: Dynamics and mechanics of liquid interfaces; thermodynamics of adsorption of surfactants and proteins; interfacial interactions and 2D rheology; stability of foams and emulsions



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Dear participants,

On behalf of the organizers of the 19th Food Colloids Conference, we are pleased to hereby welcome you to Thessaloniki, Greece.

Below you can find some practical information that will facilitate your stay!

ABOUT THE CONFERENCE VENUE

Dates: 14 – 18 April 2024

Venue: Thessaloniki Concert Hall (Building M2)



Secretariat and Information Desk during the Conference

The Secretariat will operate as follows:

Sunday 14 April 2024	17:00 – 20:00	Thessaloniki Concert Hall (Building M2)
Monday 15 April 2024	08:00 – 19:00	Thessaloniki Concert Hall (Building M2)
Tuesday 16 April 2024	09:00 – 19:00	Thessaloniki Concert Hall (Building M2)
Wednesday 17 April 2024	09:00 – 19:30	Thessaloniki Concert Hall (Building M2)
Thursday 18 April 2024	08:30 – 14:30	Thessaloniki Concert Hall (Building M2)

SOCIAL EVENTS

Walking City Tour

Date: Sunday, 14 April 2024
Time: 12:00 – 15:30
Meeting Point: Trygoniou (Chain) Tower
Price: 26€ (can be purchased in registration)

Welcome Reception

Date: Sunday 14 April 2024
Time: 19:00 – 21:00
Venue: Thessaloniki Concert Hall (Building M2)
Price: Included in Registration

Morning Jog Organized by Larodan

Date: Tuesday 16 April 2024
Time: 07:45
Meeting Point: The White Tower
Price: A good morning exercise is priceless!

Gala Dinner

Date: Tuesday 16 April 2024
Time: 20:00 – 23:00
Venue: Polis Convention
Center
Price: Included in Registration

Full-day Cultural/Sportive Excursion to Mount Olympus

Date: Friday 19 April 2024
Time: 09:00 – 16:00
Price: 75,00€ per person

INFORMATION – CONFERENCE SECRETARIAT

For any further information please contact:



OFFICIAL CONGRESS ORGANIZER – FOOD COLLOIDS CONFERENCE 2024

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We hope that you will have a pleasant stay in Thessaloniki and an interesting and fruitful Conference.

We remain at your disposal,

The **ARTION** team

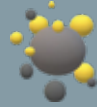


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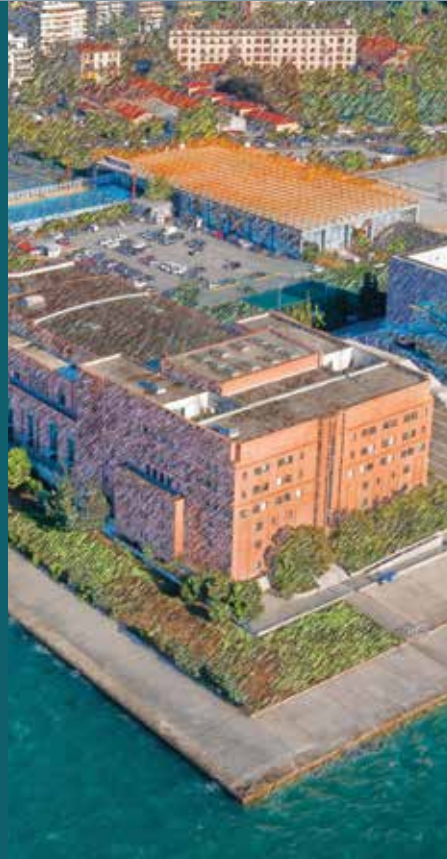
19TH

**FOOD
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**USING COLLOID SCIENCE
TO FIND NEW
SUSTAINABLE SOLUTIONS
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