international symposium on food rheology and structure

ISFRS 2019

8TH INTERNATIONAL SYMPOSIUM ON FOOD RHEOLOGY AND STRUCTURE

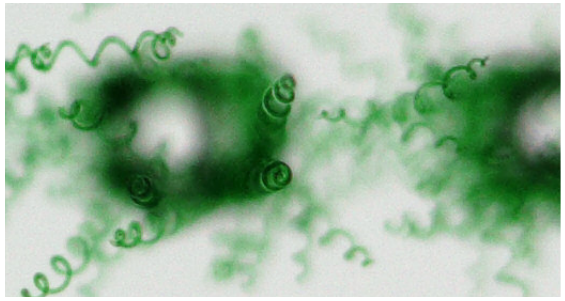
JUNE 17 - 20 2019
ZURICH
SWITZERLAND

Second Circular & Scientific Program

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

SGR Swiss Group of Rheology

Applied Rheology



Plenary and Keynote Lectures

Food 4D: Adjusting functional properties by three-dimensional structuring
Christoph Denkel

Design of yield-stress fluids
Randy Ewoldt

Perception of food structure during oral processing: How material properties translate into texture perception
E. Allen Foegeding

Numerical and experimental investigation of bread dough kneading in a 3D spiral kneader
Natalie Germann

SAXS imaging for the characterization of soft-matter
Marianne Liebi

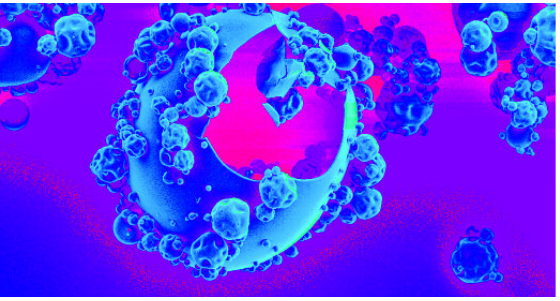
Fibrillar structures in mixed systems
Erik van der Linden

Nanoscale engineering of fat crystal networks: Structure to rheology
Alejandro Marangoni

Understanding rice structure as the key to new processing solutions
Nadina Mueller

When grains flow: the rheology of particulate systems
Olivier Pouliquen

Functional bacterial biofilms at interfaces
Patrick Rühs



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Molecular and macromolecular engineering of foams: Drainage kinetics and rheology
Vivek Sharma

Physiology guided food structure and process design for tailored rheology and functionality
Erich J. Windhab

Hydrocolloid-based food design considering interaction with saliva
Bettina Wolf

Special guests:
Anne-Marie Hermansson and Peter Liffford

Rheological Methods

A chemically-selective rheo-MRI method to study dense food emulsions
Maria Serial, Joshua Dijksman, Luben Arnaudov, Camilla Terenzi, Henk van As, John van Duynhoven

An idea to contactless in-line rheometry using ultrasonic velocity profiling
Yuji Tasaka, Taiki Yoshida, Yuichi Murai

Ice cream rheology
Fredrik Innings, Arlov Dragana

Charactering acid-induced casein gels wear by creep-recovery and wear-recovery behaviors
Juzhong Tan, Helen Joyner

Environmental scanning electron microscopy as a novel tool to characterise in real-time the hydration of milk protein concentrates
Lucille Gallagher, Valeria Cenini, David McSweeney, Mark Auty, Noel McCarthy, Barry O'Hagan

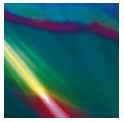
Structural transitions of wheat gluten protein dispersions at high pressure and temperature
Cecile Richard, Roxane Pons, Guilherme De Oliveira Reis, Marie-Helene Morel, Christian Sanchez, Patrick Pibarot

Microrheology as a tool for the gel-point determination in food industry
Danila Gaudino, Mathias Reufer, Andreas Voelker

Effect of in situ relative humidity in the measurement of rheological properties of food products
Carlos Gracia Fernández

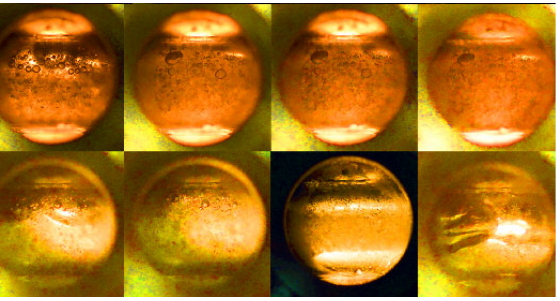
Estimation of pressure field in shear thinning fluid flows based on ultrasound velocity profiler applied to vortex shedding flows
Neetu Tiwari, Yuji Tasaka, Yuichi Murai

Rotation, oscillation and more - the rheometer as a universal tool for the investigation of complex food formulations
Fritz Soergel, Valerie Pietsch, Klaus Oldörp, Fabian Meyer



Rheo-SANS and SAXS, Tomography

Multiscale in-situ characterisation of network formation and disruption in micronized fat crystal dispersions
John van Duynhoven, Tatiana Nikoleava, Adrian Voda, Ruud den Adel, Evgenii Velichko, Wim Bouwman, Henk van As



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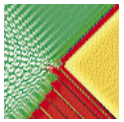
Nanostructure of colloidal calcium phosphate in milk, cheese and related products studied by laboratory SAXS
Masato Ohnuma, Yuko Nasuda, Isamu Kaneda, Takashi Tochihara, Shogo Shibata

Brush-like polysaccharides with motif-specific interactions: Probing the architecture of gel assemblies using USANS/SANS and rheology
Gleb Yakubov, Yu Long, Elliot Gilbert, Jason Stokes

Full spatio-temporal elucidation of sheared multiphase materials
Stefan J. Gstöhl, Christian M. Schlepütz, Judith Wemmer, Jörg Läuger, Marco Stampanoni, Peter Fischer, Erich J. Windhab



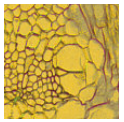
3D Printing of Food

Characterization of casein-whey protein mixtures differing in pH, protein content and denaturation parameters for extrusion based Food Layered Manufacturing
Kilian Daffner, Tom Mills, Ian Norton

Extrusion-based 3D printing of food pastes: Correlating rheological properties with printing behaviour
Sicong Zhu, Maarten A. Schutyser, Markus Stieger, Atze Jan van der Goot

Extrusion 3D printing of nutraceutical oral dosage forms formulated with oleogels and phytosterols mixtures
Ivana Cotabarren, Sofia Cruces, Camila Palla

The effect of rheological properties of oleogels on 3D printing cheese cake
Allan Madsen, Maria Larsen, Mia Falkeborg, Bianca Pérez



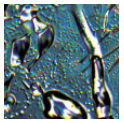
Dough

Exploring the effect of arabinoxylans on the rheology of blended wheat flour-rye flour doughs via treatment with xylanases
Yannick Meeus, Frederik Janssen, Arno Wouters, Jan Delcour, Paula Moldenaers

Characterising the microstructure of deep-fried battered and breaded coatings to understand crispness
Kha Yiu Voong, Tom Mills, Abigail Norton-Welch, Ian Norton

Hydrogen-bond interactions as quantitative descriptors of food structuring mechanisms during cereal-based food processing
Stefano Renzetti, Ruud G. van der Sman

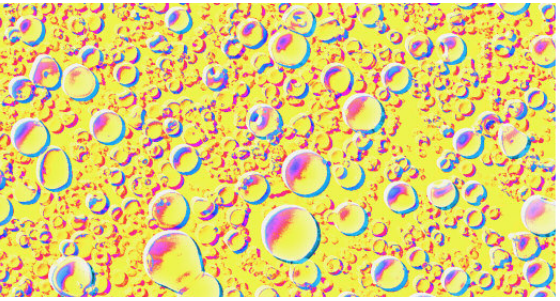
Impact of endogenous wheat lipids on bread quality, linear and non-linear extensional rheology of dough and air/water interfacial properties of dough liquor
Frederik Janssen, Arno Wouters, Sara Petit-Jean, Paula Moldenaers, Jan Delcour



Biopolymer Solutions and Gels

Exploring local diffusion in heterogeneous food structures
Niklas Lorén, John van Duynhoven, Magnus Röding

Mixtures of xanthan gum with locust bean gum, guar gum and konjac glucomannan and their molecular interactions in cold gelled systems
Christine Schreiber, Marta Ghebremedhin, Birgitta Zielbauer, Natalie Dietz, Thomas Vilgis



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Microstructure influence on rheology of high acyl gellan and maltodextrin mixed gels
Kelsey Kanyuck, Tom Mills, Ian Norton, Abigail Norton

A novel scheme to model non-Fickian diffusion in heterogeneous food hydrogels
Leonard Sagis

Acid gelation of enzymatically cross-linked caseinates: Relationship between molecular characteristics, rheology and gel microstructure
Norbert Raak, Raffaele Andrea Abbate, Susanne Boye, Albena Lederer, Harald Rohm, Doris Jaros

Using low frequency 1H-NMR and digital microscopy to describe yogurt gel structure and serum entrapment
Audrey Gilbert, Laurie-Eve Rioux, Daniel St-Gelais, Sylvie Turgeon

Quantitative analysis on viscous behaviour of concentrated biopolymer solutions related to morphology development during drying
Isabel Siemons, Eline Both, Remko Boom, Ruud G. van der Sman, Maarten A. Schutyser

The influence of suspension rheology and micromechanics on sensory grittiness
Heather Shewan, Jason Stokes, Heather Smyth

Do rheology and oral tribology relate to sensory texture perception? A case study on hydrogels
Emma Krop, Marion Hetherington, Melvin Holmes, Sophie Miquel, Anwesha Sarkar

Protein-based emulsion gels for edible oil structuring
Ina Nephomnyshy, Maya Davidovich-Pinhas

Evaluating the potential of gluten replacement by zein
Kristin Mattice, Alejandro Marangoni

Differences in the microstructure and rheological properties of acid gels from goat, sheep and cow milk
Hanh Nguyen, Saeedeh Afsar, Li Day

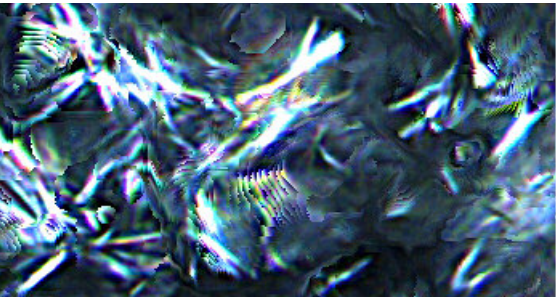
Tackling the question of specific interactions in a complex blend of proteins: Gluten
Amélie Banc, Marie-Hélène Morel, Laurence Ramos, Paul Menut, Justine Pincemaille, Frédéric Violleau

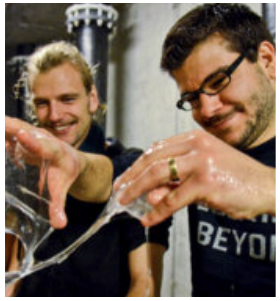
Large deformation, fracture and lubrication properties of emulsion-filled gellan gum gels
Chaiwut Gamonpilas, Rattana Teeklee, Nattawut Limprayoon, Nispa Seetapan, Asira Fuongfuchat

Properties of nanomaterials from maize starches modified with stearic acid
Naushad Emmambux

Readdressing theoretical approaches for modelling food protein gels as particle-filled soft solids
Andrew Gravelle, Reed Nicholson, Shai Barbut, Alejandro Marangoni

Rheological, tribological and phase-separating properties of concentrated acid gel suspensions in the presence of polymers and at defined particle size distributions
Georg Surber, Dennis Schab, Doris Jaros, Harald Rohm





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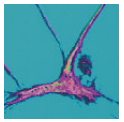


Colloidal Dispersions

The structure and rheology of some dietary fiber suspensions
Eva Tornberg

Effect of particle size on optical properties and viscoelasticity of nano-microstructured cellulose based suspensions
Rene Machuca, Josefina Ortega, Francisca Palacios, Daniella Sotella, Javier Enrione, Paulo Diaz-Calderon

Determining the viscoelastic and solubility properties of soy protein isolate solutions
Timothy O'Flynn, Noel McCarthy, James O'Mahony

Hemp globulin and casein: Colloidal frenemies
Simon Loveday, Chih-Chieh Chuang, Skelte Anema, Teresa Wegrzyn

Using pea-derived maltodextrins for nutraceutical formulation
Juliette Caron, Anne Matignon, Olaf Haüsler, Pierre Heijboer

Rheological and structural characterization of dairy desserts with resistant starches under oral conditions
Laura Laguna, Sara Pérez, Delia Pineda, Amparo Gamero, Amparo Tárrega

Structuring lipids through enzymatic glycerolysis
Reed Nicholson, Alejandro Marangoni

Mechanistic insights into unexpected powder collapse in amorphous-crystalline mixtures
Xin Yi See, Laurent Forny, Marina Dupas-Langlet, Vincent Meunier, Weibiao Zhou

Emulsions, Foams and Interfaces

In-situ rheological and structural characterization of milk foams in a commercial foaming device
Annika Völp, Jan Engmann, Deniz Gunes, Cécile Gehin-Deval, Norbert Willenbacher

Interfacial behaviour of plant-dairy protein blends: Comparison between oil-water and air-water interfaces
Emma Hinderink, Leonard Sagis, Karin Schroën, Claire Berton-Carabin

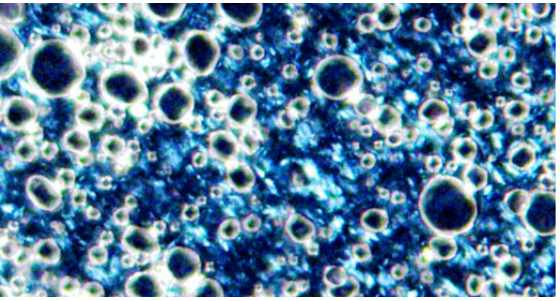
Measuring the interfacial rheology of soluble surfactants using controlled foam Plateau Border and Node geometries
Christopher Clarke, Aris Lazidis, Fotis Spyropoulos, Ian Norton

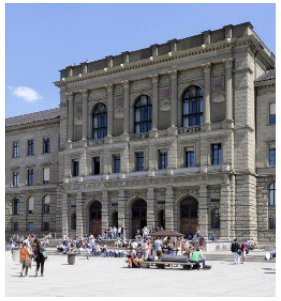
Interfacial behavior of plant proteins
Alexandre Poirier, Amélie Banc, Antonio Stocco, Martin In, Laurence Ramos

Interfacial properties of whey protein in recombined dairy cream
Xilong Zhou, Leonard Sagis

Nonlinear surface rheology and interfacial microstructure imaging of WPI particles and their constituents
Jack Yang, Ilonka Thielen, Claire Berton-Carabin, Erik van der Linden, Leonard Sagis

Controlled clustering of oil droplets in o/w emulsions: Rheological and tribological properties and the link to sensory perception
Philipp Fuhrmann, Guido Sala, Markus Stieger, Elke Scholten





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The effect of aeration on the mechanical and thermal response of chocolates during the oral process
Dimitrios Bikos, Georgios Samaras, Antonis Sergis, Maria Charalambides, Philippa Cann, Marc Masen, Yannis Hardalupas, Christoph Hartmann, Josélio Vieira

Rheological properties of the low calorie mayonnaise that a part of the oil content was replaced with agar micro-gels
Isamu Kaneda, Shogo Shibata, Yuko Nasuda, Masato Ohnuma

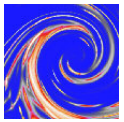
Rheology and microstructure of foams generated from viscous shear-thinning liquids using a continuous rotor-stator device
Saifullah Jabarkhyl, Pip Rayment, David Lloyd, Shiping Zhu, Damiano Rossetti, Mostafa Barigou

Controlled ice crystal formation in ice cream by plant based ice structuring proteins
Dana Middendorf, Andreas Juadjur, Frederick Stoddard, Ruslan Kalender, Ute Bindrich, Volker Lammers

Rheological study of selectively hydrolysed soy proteins in emulsions and gels
Wenjie Xia, Leonard Sagis

Obtain three-phase interfacial tension in coacervate/water/oil systems from coacervate filament thinning
Xiufeng Li, Philipp Erni, Jasper van der Gucht, Renko de Vries

Optical characterization methods of dairy products
Christelle Tisserand, Mélanie Romain, Fernando Leal Calderon, Giovanni Brambilla, Gérard Meunier



Tribology

From bulk to system behavior: combining rheological and tribological testing in food oral processing
Florian Rummel, Jörg Läuger, Kartik Pondicherry

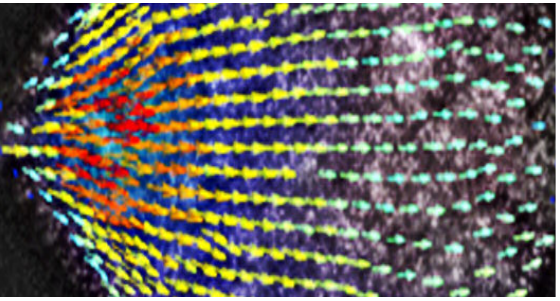
Designing mouth-mimicking rheo-tribometers to quantify oral processing
Raisa Rudge, Joshua Dijksman, Elke Scholten

A tribology test to measure friction of molten chocolate in a model tongue-palate contact
Georgios Samaras, Dimitrios Bikos, Josélio Vieira, Christoph Hartmann, Maria Charalambides, Yannis Hardalupas, Marc Masen, Philippa Cann

From rheology to soft tribology of biocompatible microgels in complex continuum
Efren Andablo-Reyes, Anwesha Sarkar

Influence of Processing on Structure and Rheology

Rheological study on the interactions between oleosomes and co-extracted materials during aqueous extraction
Maria Juliana Romero Guzman, Nienke Kollman, Lu Zhang, Remko Boom, Constantinos Nikiforidis



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Kinetics of heat-induced denaturation of whey proteins and characterization of protein aggregates in model infant formulas
Amira Halabi, Amélie Deglaire, Marie Hennetier, Frédéric Violleau, Said Bouhallab, Didier Dupont, Thomas Croguennec

The impact of hydrocolloids on the microstructure and function of cream cheese
Lydia Ong, Sandra Kentish, Sally Gras

Dynamic structural breakdown behaviour of a model Maasdam-style cheese under tensile deformation as studied using confocal scanning laser microscopy
Prabin Lamichhane, Mark A. Auty, Alan Kelly, Jeremiah Sheehan

Conching chocolate: A prototypical transition from frictionally jammed solid to flowable suspension with maximal solid content
Elena Blanco, Daniel Hodgson, Michiel Hermes, Rut Besseling, Gary Hunter, Paul Chaikin, Michael Cates, Isabella Van Damme, Wilson Poon

Influence of mold materials on the gloss of chocolate bars
Dana Middendorf, Knut Franke, Ute Bindrich

Properties of fresh milk protein ingredients as a consequence of frozen storage
Ruifen Li, Richard Ipsen

Water redistribution determined by Time Domain NMR explains rheological properties of dense fibrous protein blends at high temperature
Floor Schreuders, Igor Bodnár, Philipp Erni, Remko Boom, Atze Jan van der Goot

The effect of purification processes on the viscoelastic properties of heat-induced gels, produced from mild to highly purified yellow pea fractions
Cornelis Kornet, Paul Venema, Atze Jan Goot, Marcel Meinders, Erik van der Linden

Inline capillary rheometry and die entry flow simulation of high moisture extruded meat analogues
Juliette Rudzick, Tobias Herken, Max Pohl, Volker Lammers

How multiscale structures in milk fat shape the crystal network formation
Naomi Arita Merino, Hein van Valenberg, Elke Scholten

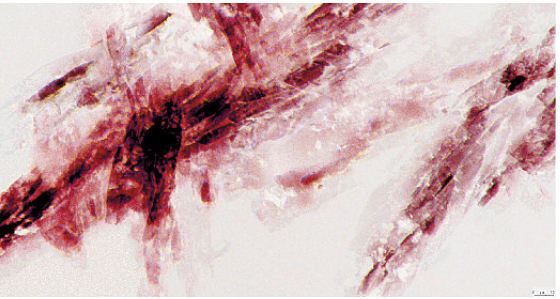
Improvement of the stability of wheat flour doughs containing a high water content: Interest of a two-steps structuring-process
Laurena Masbernat, Sophie Berland, Giana Almeida, Camille Michon

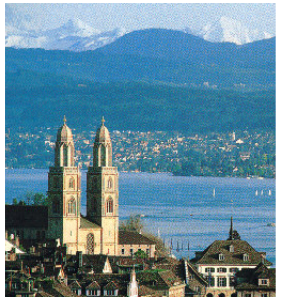
Effect of N2 injection before spray-drying on the microstructure and physico-mechanical properties of regular and agglomerated high protein milk powders
Valentyn Maidannyk, David McSweeney, Vinay Mishra, Sharon Montgomery, Noel McCarthy

Materials science approach for continuous encapsulation and structuring with protein-carbohydrate matrices
Mackenzie Hansen, Yrjö Roos

Heterogeneous high concentrated phase separated food systems
Sophia Wassén, Evelina Höglund, Camilla Öhgren

Influence of kinetic and shear rate on whey protein aggregates structure: a small-angle x-ray scattering and fluorescent microscopy study
Alice Vilotte, Hugues Bodiguel, Komla Ako, Christophe Schmitt, Deniz Gunes, Clément De Loubens





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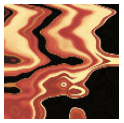


Physiological-guided Rheology

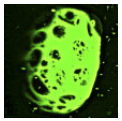
Rheology during oral processing and swallowing
Mats Stading, Waqas Mohammad Qazi, Ekberg Olle, Patricia Lopez Sanchez, Vincent Schaller, Johansson Christer

Determining the rheology of fluids for dysphagia treatment in the field
Adam Burbidge

Impact of interfacial and bulk interactions between cellulose ethers and bile salts on the control of lipid digestion
Jennifer Zornjak, Cristina Fernández-Fraguas

Drop breakup in peristaltic flow
Franz Tanner, Kathleen Feigl, Damien Dufour, Erich Windhab

Tailoring emulsions for controlled lipid release: Establishing in vitro-in vivo correlation for digestion of lipids
Nathalie Scheuble, Andreas Steingötter, Peter Fischer



REGISTRATION FEES

Delegates	until April 12, 2019	Euro 800,–
	after April 12, 2019	Euro 850,–
Students/Graduates:	until April 12, 2019	Euro 300,–
	after April 12, 2019	Euro 350,–
Accompanying Persons:		Euro 200,–

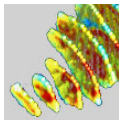
The Delegates and **Students/Graduates** registration covers attendance at the technical sessions, the Book of Abstracts, the conference banquet, lunch, and coffee breaks.

The registration for **Accompanying Persons** covers the conference banquet and coffee breaks.

Accommodation is not included in the registration fee. A list of hotels is available at our website.

In the case of **cancellation**, an amount of Euro 300,– (no reimbursement for students registration) will be retained before reimbursement. There will be no refunds after May 1, 2019.

Registration and Payment is available at:
https://ethzurich.eventsair.com/isfrs19/reg/Site/Register



ABSTRACTS FOR POSTER CONTRIBUTION

Submission of Abstracts for poster contribution is still open until April 12 and available at:
http://www.isfrs.ethz.ch/call-for-abstracts.html