

international  
symposium on  
food  
rheology and  
structure

# ISFRS 2019

Program of the

8<sup>th</sup>

International  
Symposium on  
Food  
Rheology and  
Structure

17. - 20.6.2019



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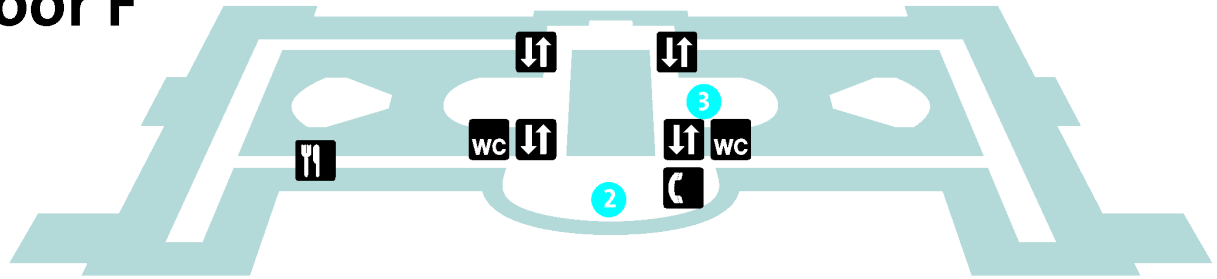
**ETH**

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

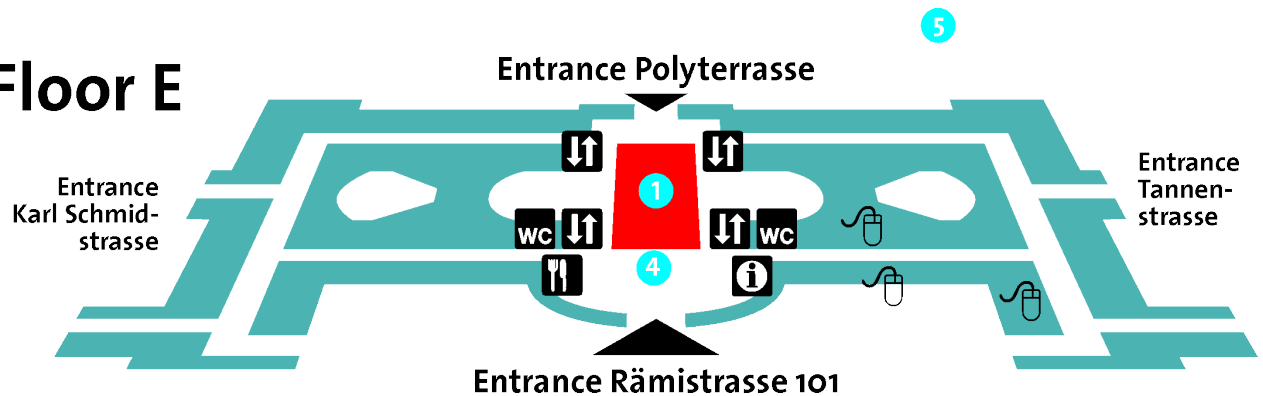
**Original**  
**Zürcher**

## Conference Location & Internet Access

### Floor F



### Floor E



- 1 - Main Hall (Exhibition, Coffee Break, Poster Session)
- 2 - Auditorium F30 (Audimax)
- 3 - Auditorium F3
- 4 - Registration Desk
- 5 - Mensa Polyterrasse

### Internet Access

**WLAN:** Select “public-5” or “public” as network. Log-in and password for the landing page in your browser is as follows:

Log-in name: ISFRS2019  
Password: Rheo2Food

In case the landing page is not appearing automatically, please use the following link:

<https://enter-guest-net.ethz.ch/welcome>

**VPN connections** can be established without registration on the ETH landing page.

# Monday, 17.6.2019 (morning)

## HG F 30 (Audimax)

## HG F 3

### 8:50 - 9:05 *Welcome*

Erich J. Windhab & Peter Fischer

### 9:05 - 9:45 *Opening Lecture*

Perception of food structure during oral processing: How material properties translate into texture perception

Allen Foegeding

### 9:50 - 12:40 *Session "Biopolymer Solutions and Gels"*

#### 9:50 Readdressing theoretical approaches for modelling food protein gels as particle-filled soft solids

Andrew Gravelle\*, Reed Nicholson, Shai Barbut, Alejandro Marangoni

#### 10:10 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

### 10:30 - 11:00 *COFFEE BREAK*

#### 11:00 Microstructure influence on rheology of high acyl gellan and maltodextrin mixed gels

Kelsey Kanyuck\*, Tom Mills, Ian Norton, Abigail Norton

#### 11:20 A novel scheme to model non-Fickian diffusion in heterogeneous food hydrogels

Leonard Sagis

#### 11:40 Acid gelation of enzymatically cross-linked caseinates: Relationship between molecular characteristics, rheology and gel microstructure

Norbert Raak\*, Raffaele Andrea Abbate, Susanne Boye, Alben Lederer, Harald Rohm, Doris Jaros

#### 12:00 Using low frequency <sup>1</sup>H-NMR and digital microscopy to describe yogurt gel structure and serum entrapment

Audrey Gilbert\*, Laurie-Eve Rioux, Daniel St-Gelais, Sylvie Turgeon

#### 12:20 Exploring local diffusion in heterogeneous food structures

Niklas Lorén\*, John van Duynhoven, Magnus Röding

### 12:40 - 14:00 *LUNCH*

### 9:50 - 12:40 *Session "Colloidal Dispersions"*

#### 9:50 The structure and rheology of some dietary fiber suspensions

Eva Tornberg

#### 10:10 Determining the viscoelastic and solubility properties of soy protein isolate solutions

Timothy O'Flynn\*, Noel McCarthy, James O'Mahony

### 10:30 - 11:00 *COFFEE BREAK*

#### 11:00 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\*

#### 11:20 Hemp globulin and casein: Colloidal frenemies

Simon Loveday\*, Chih-Chieh Chuang, Skelte Anema, Teresa Wegrzyn

#### 11:40 Using pea-derived maltodextrins for nutraceutical formulation

Juliette Caron\*, Anne Matignon, Olaf Häusler, Pierre Heijboer

#### 12:00 Structuring lipids through enzymatic glycerolysis

Reed Nicholson\*, Alejandro Marangoni

#### 12:20 Rheological and structural characterization of dairy desserts with resistant starches under oral conditions

Laura Laguna\*, Sara Pérez, Delia Pineda, Amparo Gamero, Amparo Tárrega

### 12:40 - 14:00 *LUNCH*

# Monday, 17.6.2019 (afternoon)

## HG F 30 (Audimax)

## HG F 3

### 14:00 - 14:30 *Keynote Lecture*

#### Fibrillar structures in mixed systems

Peng Jingfeng, Krassimir Velikov, Paul Venema, Erik van der Linden\*

### 14:35 - 17:40 *Session "Biopolymer Solutions and Gels"*

#### 14:35 The influence of suspension rheology and micromechanics on sensory grittiness

Heather Shewan\*, Jason Stokes, Heather Smyth

#### 14:55 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

### 15:15 - 16:00 *COFFEE BREAK*

#### 16:00 Protein-based emulsion gels for edible oil structuring

Ina Nephomnyshy, Maya Davidovich-Pinhas\*

#### 16:20 Primary, secondary, tertiary and quaternary structure levels in linear polysaccharides: From random coil, to single helix to supramolecular assembly

Michael Diener\*, Adamcik Jozef, Antoni Sánchez-Ferrer, Florian Jädig, Raffaele Mezzenga

#### 16:40 Differences in the microstructure and rheological properties of acid gels from goat, sheep and cow milk

Hanh Nguyen\*, Saeedeh Afsar, Li Day

#### 17:00 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

#### 17:20 Large deformation, fracture and lubrication properties of emulsion-filled gellan gum gels

Chaiwut Gamonpilas\*, Rattana Teeklee, Nattawut Limprayoon, Nispa Seetapan, Asira Fuongfuchat

### 14:00 - 14:30 *Keynote Lecture*

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

Laila Abu-Farah, Thomas Goudoulas, Natalie Germann\*

### 14:35 - 16:40 *Session "Dough"*

#### 14:35 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

#### 14:55 Characterising the microstructure of deep-fried battered and breaded coatings to understand crispness

Kha Yiu Voong\*, Tom Mills, Abigail Norton-Welch, Ian Norton

### 15:15 - 16:00 *COFFEE BREAK*

#### 16:00 Hydrogen-bond interactions as quantitative descriptors of food structuring mechanisms during cereal-based food processing

Stefano Renzetti\*, Ruud van der Sman

#### 16:20 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

### 16:40 - 17:40 *Session "Influence of Processing on Structure and Rheology"*

#### 16:40 Materials science approach for continuous encapsulation and structuring with protein-carbohydrate matrices

Mackenzie Hansen, Yrjö Roos\*

#### 17:00 Heterogeneous high concentrated phase separated food systems

Sophia Wassén, Evelina Höglund, Camilla Öhgren, Mats Stading\*

#### 17:20 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\*

18:00 ~ 20:00 *Opening Reception (E-Floor)*

## Tuesday, 18.6.2019 (morning)

### HG F 30 (Audimax)

**8:30 - 9:10**    *Plenary Lecture*  
Design of yield-stress fluids  
Randy Ewoldt

**9:15 - 12:20**    *Session “Influence of Processing on Structure and Rheology”*

**9:15**    **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

**9:35**    **Kinetics of heat-induced denaturation of whey proteins and characterization of protein aggregates in model infant formulas**  
Amira Halabi\*, Amélie Deglaire, Marie Henriet, Frédéric Violleau, Said Bouhallab, Didier Dupont, Thomas Croguennec

**9:55**    **The impact of hydrocolloids on the microstructure and function of cream cheese**  
Lydia Ong, Sandra Kentish, Sally Gras\*

**10:15 - 10:40**    *COFFEE BREAK*

**10:40**    **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

**11:00**    **Comprehensive pulsed electric field system analysis for microalgae processing**  
Leandro Buchmann\*, Robin Bloch, Alexander Mathys

**11:20**    **Influence of mold materials on the gloss of chocolate bars**  
Dana Middendorf\*, Knut Franke, Ute Bindrich

**11:40**    **Properties of fresh milk protein ingredients as a consequence of frozen storage**  
Ruifen Li\*, Richard Ipsen

**12:00**    **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

**12:20**    **Inline capillary rheometry and die entry flow simulation of high moisture extruded meat analogues**  
Juliette Rudzick\*, Tobias Herken, Max Pohl, Volker Lammer

**12:40 - 14:00**    *LUNCH*

### HG F 3

**9:15 - 12:20**    *Session “Biopolymer Solutions and Gels”*

**9:15**    **Properties of nanomaterials from maize starches modified with stearic acid**  
Naushad Emmambux\*

**9:35**    **Quantitative analysis on viscous behaviour of concentrated biopolymer solutions related to morphology development during drying**  
Isabel Siemons\*, Eline Both, Remko Boom, Ruud van der Sman, Maarten Schutyser

**9:55**    **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

**10:15 - 10:40**    *COFFEE BREAK*

**9:15 - 12:20**    *Session “Rheological Methods”*

**10:40**    **Charactering acid-induced casein gels wear by creep-recovery and wear-recovery behaviors**  
Juzhong Tan, Helen Joyner\*

**11:00**    **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

**11:20**    **Optical characterization methods of dairy products**  
Christelle Tisserand, Mélanie Romain, Fernando Leal Calderon, Giovanni Brambilla, Gérard Meunier, Pascal da Costa\*

**11:40**    **Microrheology as a tool for the gel-point determination in food industry**  
Danila Gaudino\*, Mathias Reufer, Andreas Voelker

**12:00**    **Effect of in situ relative humidity in the measurement of rheological properties of food products**  
Carlos Gracia Fernández\*

**12:20**    **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

**12:40 - 14:00**    *LUNCH*

## Tuesday, 18.6.2019 (afternoon)

### HG F 30 (Audimax)

### HG F 3

#### 14:00 - 14:30 *Keynote Lecture*

Understanding rice structure as the key to new processing solutions  
Nadina Müller\*, Béatrice Conde-Petit

#### 14:30 - 17:10 *Session "Influence of Processing on Structure and Rheology"*

14:30 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 van der Goot, Marcel Meinders, Erik van der Linden

14:50 How multiscale structures in milk fat shape the crystal network formation  
Naomi Arita Merino\*, Hein van Valenberg, Elke Scholten

15:10 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

15:30 Effect of N<sub>2</sub> 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

#### 14:00 - 14:30 *Keynote Lecture*

When grains flow: The rheology of particulate systems  
Olivier Pouliquen

#### 14:30 - 16:10 *Session "Rheological Methods"*

14:30 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

14:50 An idea to contactless in-line rheometry using ultrasonic velocity profiling  
Yuji Tasaka\*, Taiki Yoshida, Yuichi Murai

15:10 Ice cream rheology  
Fredrik Innings\*, Arlov Dragana

15:30 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

15:30 ~ 18:00 *Coffee Break followed by Poster Session and Exhibition (E-Floor)*

# Wednesday, 19.6.2019 (morning)

## HG F 30 (Audimax)

**8:30 - 9:10** *Plenary Lecture*  
**Molecular and macromolecular engineering of foams:  
 Drainage kinetics and rheology**  
 Vivek Sharma

**9:15 - 9:45** *Keynote Lecture*  
**Foam flows - a mesoscale system par excellence**  
 Antonio Delgado

**9:50 - 12:40** *Session "Emulsions, Foams and Interfaces"*

**9:50** **In-situ rheological and structural characterization of milk foams in a commercial foaming device**  
 Annika Völz\*, Jan Engmann, Deniz Gunes, Cécile Gehin-Deval, Norbert Willenbacher

**10:10** **Interfacial behaviour of plant-dairy protein blends: Comparison between oil-water and air-water interfaces**  
 Emma Hinderink\*, Leonard Sagis, Karin Schroën, Claire Berton-Carabin

**10:30 - 11:00** *COFFEE BREAK*

**11:00** **Measuring the interfacial rheology of soluble surfactants using controlled foam Plateau Border and Node geometries**  
 Christopher Clarke\*, Aris Lazidis, Fotis Spyropoulos, Ian Norton

**11:20** **Interfacial behavior of plant proteins**  
 Alexandre Poirier, Amélie Banc, Antonio Stocco, Martin In, Laurence Ramos\*

**11:40** **Interfacial properties of whey protein in recombined dairy cream**  
 Xilong Zhou\*, Leonard Sagis

**12:00** **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\*

**12:20** **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

**12:40 - 13:40** *LUNCH*

## HG F 3

**9:15 - 9:45** *Keynote Lecture*  
**SAXS imaging for the characterization of soft-matter**  
 Marianne Liebi

**9:50 - 11:00** *Session "Rheo-SANS and SAXS, Tomography"*

**9:50** **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

**10:10** **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

**10:30 - 11:00** *COFFEE BREAK*

**11:00** **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

**11:20** **Full spatio-temporal elucidation of sheared multiphase materials**  
 Stefan Gstöhl\*, Christian Schlepütz, Judith Wemmer, Jörg Läger, Marco Stapanoni, Peter Fischer, Erich Windhab

**11:40 - 12:40** *Session "Tribology"*

**11:40** **From bulk to system behavior: combining rheological and tribological testing in food oral processing**  
 Florian Rummel\*, Jörg Läger, Kartik Pondicherry

**12:00** **Designing mouth-mimicking rheo-tribometers to quantify oral processing**  
 Raisa Rudge\*, Joshua Dijkman, Elke Scholten

**12:20** **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

**12:40 - 13:40** *LUNCH*

## Wednesday, 19.6.2019 (afternoon)

### HG F 30 (Audimax)

- 13:40**    **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
- 14:00**    **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
- 14:20 - 14:50**    **Keynote Lecture**  
**Functional bacterial biofilms at interfaces**  
Patrick Rühls
- 14:50 - 15:20**    **COFFEE BREAK**
- 15:20 - 17:00**    **Session “Emulsions, Foams and Interfaces”**
- 15:20**    **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
- 15:40**    **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
- 16:00**    **Rheological study of selectively hydrolysed soy proteins in emulsions and gels**  
Wenjie Xia\*, Leonard Sagis
- 16:20**    **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
- 16:40 - 17:10**    **Keynote**  
**Nanoscale engineering of fat crystal networks: Structure to rheology**  
Alejandro Marangoni\*, Braulio Macias-Rodriguez
- 17:10 - 17:40**    **Special Guest**  
**Global challenges and the critical needs of food science and technology**  
Peter Lillford

**19:30 - 23:00**    **Banquet**

### HG F 3

- 13:40**    **From rheology to soft tribology of biocompatible microgels in complex continuum**  
Efren Andablo-Reyes\*, Anwesha Sarkar
- 14:00**    **Mechanistic insights into unexpected powder collapse in amorphous-crystalline mixtures**  
Xin Yi See\*, Laurent Forny, Marina Dupas-Langlet, Vincent Meunier, Weibiao Zhou
- 14:20 - 14:50**    **Keynote Lecture**  
**Hydrocolloid-based food design considering interaction with saliva**  
Xinxin Li, Liling Zhang, Mirosław Kasprzak, Mahamoud Hussein, Rebecca Ford, Stephen Harding, Peter Wilde, Bettina Wolf\*
- 14:50 - 15:20**    **Coffee Break**
- 15:20 - 17:00**    **Session “Physiological-guided Rheology”**
- 15:20**    **Rheology during oral processing and swallowing**  
Mats Stading\*, Waqas Mohammad Qazi, Ekberg Olle, Patricia Lopez Sanchez, Vincent Schaller, Johansson Christer
- 15:40**    **Determining the rheology of fluids for dysphagia treatment in the field**  
Adam Burbidge\*
- 16:00**    **Impact of interfacial and bulk interactions between cellulose ethers and bile salts on the control of lipid digestion**  
Jennifer Zornjak, Cristina Fernández-Fraguas\*
- 16:20**    **Tailoring emulsions for controlled lipid release: Establishing in vitro-in vivo correlation for digestion of lipids**  
Nathalie Scheuble, Andreas Steingötter, Peter Fischer\*



Thursday, 20.6.2019

HG F 30 (Audimax)

HG F 3

**8:30 - 9:10** *Plenary Lecture*  
Physiology guided food structure and process design  
for tailored rheology and functionality  
Erich J. Windhab

**9:10 - 9:40** *Plenary Lecture*  
Microstructure design - A key for processing of food  
systems  
Anne-Marie Hermansson

**9:40 - 10:10** *Keynote Lecture*  
Food 4D: Adjusting functional properties by three-  
dimensional structuring  
Christoph Denkel\*, Tobias Kistler

**10:10 - 10:40** *COFFEE BREAK*

**10:40 - 12:00** *Session "3D Printing of Food"*

**10:40** 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

**11:00** 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\*

**11:20** Extrusion 3D printing of nutraceutical oral dosage forms  
formulated with oleogels and phytosterols mixtures  
Ivana Cotabarren, Sofia Cruces, Camila Palla\*

**11:40** The effect of rheological properties of oleogels on 3D print-  
ing cheese cake  
Allan Madsen, Maria Larsen\*, Mia Falkeborg, Bianca Pérez

**12:00 - 12:10** *CLOSING REMARKS*

**10:40 - 12:00** *Session "Meat Analogues"*

**10:40** Relationship of compositional, mechanical and textural  
properties of extruded pasta containing specific varieties of  
quinoa (*Chenopodium quinoa*)  
Jose M. Ramos-Diaz\*, Ingmars Cinkmanis, Tatjana Kince,  
Martins Sabovics, Evita Straumite, Kintija Petrova, Dace  
Klava, Göker Gürbüz, Kirsi Jouppila

**11:00** Plant attitude - Great taste from within  
George Krintiras\*, Jens van der Pol

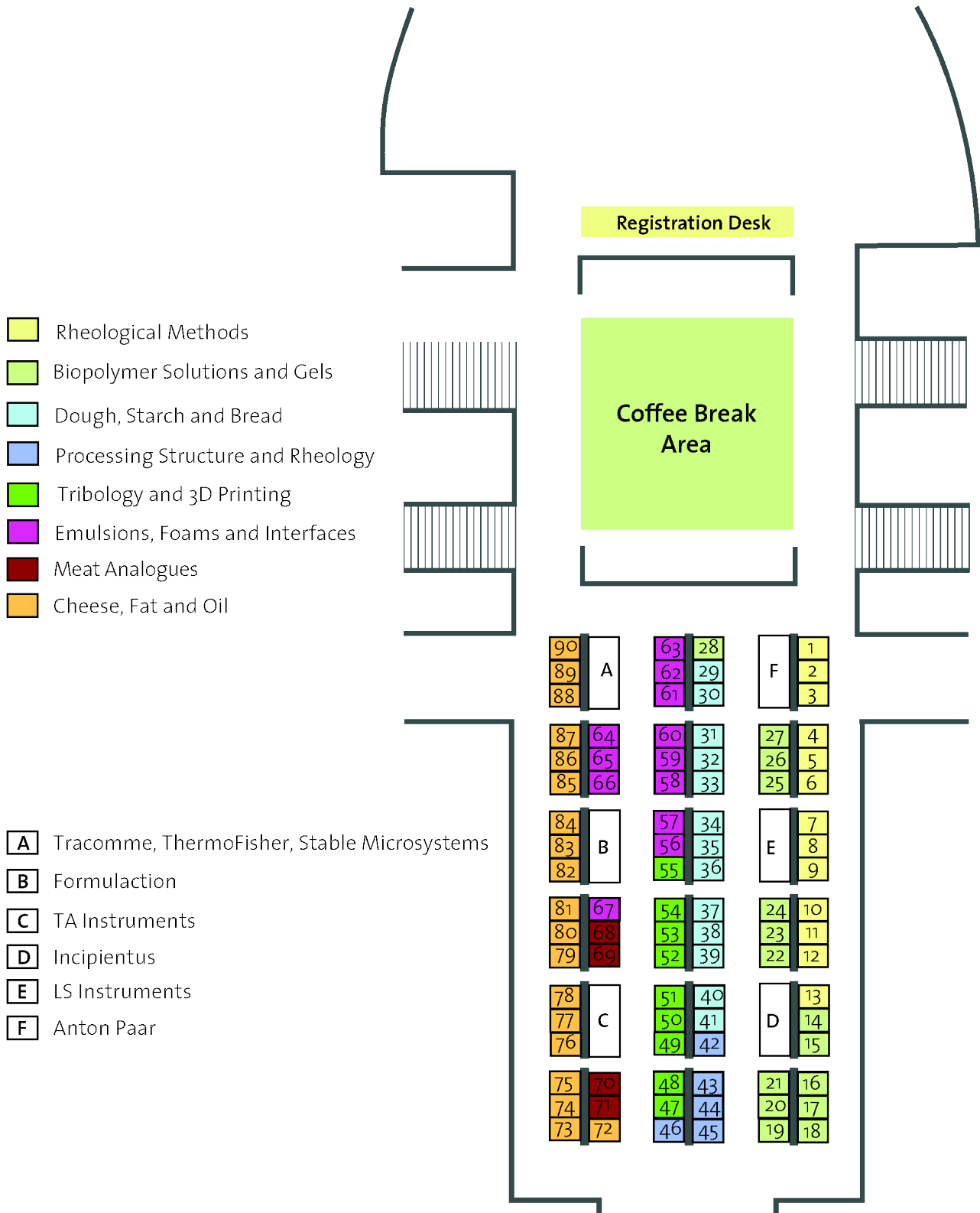
**11:20** Processing of novel plant protein and fibre by high mois-  
ture extrusion cooking  
Eric Stirnemann\*, Erich J. Windhab

**11:40** Structural transitions of wheat gluten protein dispersions  
at high pressure and temperature  
Cecile Richard, Roxane Pons, Guilherme De Oliveira Reis,  
Marie-Hélène Morel, Christian Sanchez, Patrick Pibarot\*

# Poster Session and Exhibition

Tuesday, 18.6.2019, 15:50 onwards

Main Building E-Floor



## Poster Session

Tuesday, 18.6.2019, 15:50 onwards

### Main Building E-Floor

- |    |  |    |   |
|----|--|----|---|
| 1  | <b>Rheological and inner structural assessments for complex materials using ultrasonic spinning rheometry</b><br>Taiki Yoshida*, Yuji Tasaka, Yuichi Murai   | 12 | <b>Application of high-resolution ultrasonic spectroscopy for real-time monitoring of enzymatic hydrolysis of globular and non-globular proteins</b><br>Rian Lynch*, Georgios Papoutsidakis, Mark Dizon, Vitaly Buckin                        |
| 2  | <b>High throughput size distribution analysis using an image processing tool based on template matching</b><br>Annika Völpe*, Norbert Willenbacher   | 13 | <b>Effect of high-pressure processing on the micro-structure and rheological properties of bean flours</b><br>Cristina Fernández-Fraguas*, Tiantian Lin   |
| 3  | <b>Rheo-microscope tool in the food research</b><br>Carlos Gracia Fernández*, Rajaram Bharath  | 14 | <b>Reconstituted aloe vera hydrogel formation and its applications in high methoxy pectin mix gel formation</b><br>Kiran Patruni*, Srinivasa Rao Pavuluri   |
| 4  | <b>Screening of textural properties of starters and proteins during yogurt preparation</b><br>Roland Ramsch, Yassine Nagazi, Giovanni Brambilla, Gérard Meunier, Loubnah Belahcen, Cristel Couderc, Magali Peter, Hélène Tormo, Pascal Da Costa*                                     | 15 | <b>Effects of nanoclay on some structural properties of starch-based biopolymers in presence of combination of plasticizers</b><br>Mohammad Mousavi*  |
| 5  | <b>Development and application of micro-computed tomography and proton NMR to determine the structural changes of cooked noodles</b><br>Sungmin Jeong*, Jae Pil Roh, Imkyung Oh, Suyong Lee  | 16 | <b>Wine viscosity: Which compound influences the most the viscosity</b><br>Thanina Amiar, Ranchon Hubert, Brambilla Giovanni, Meunier Gérard, Pascal Da Costa*  |
| 6  | <b>Is the use of a structural parameter necessary in describing the behaviour of rheologically-unstable fluids?</b><br>Mirosław Grzesik*   | 17 | <b>Complex coacervation of food grade cationic surfactant lauric arginate with anionic algal polysaccharide lambda carrageenan</b><br>Trivikram Nallamilli*, Markus Ketomaeki, Thomas Vilgis  |
| 7  | <b>Modelling heat-induced viscosity of milk protein concentrate using kinetic data</b><br>Quang Tri Ho*, Kevin Murphy, Kamil Drapala, Mark Fenelon, James OMahony, John Tobin, Noel McCarthy   | 18 | <b>Synergistic gelation mechanism of xanthan gum with galacto- and glucomannan and their interaction with salt</b><br>Marta Ghebremedhin*, Christine Schreiber, Birgitta Zielbauer, Natalie Dietz, Thomas Vilgis                              |
| 8  | <b>Rheological characterization of sugar inhibited CO<sub>2</sub> hydrate slurries</b><br>Zuzana Sediva*, Erich Windhab  | 19 | <b>Rapid temperature screening of protein solutions</b><br>Roland Ramsch, Yassine Nagazi, Giovanni Brambilla, Gérard Meunier, Pascal Da Costa*  |
| 9  | <b>Rheology of Swiss cheese fondue</b><br>Pascal Bertsch, Laura Savorani, Peter Fischer  | 20 | <b>Bambara groundnut protein gels: A rheological and microstructural characterisation</b><br>Claudine Diedericks*, Paul Venema, Victoria Jideani, Erik van der Linden   |
| 10 | <b>Correlating crystallization kinetics and rheological properties of polyethylene using a newly developed low-field Rheo-NMR combination for interpretation of the behavior of semi-crystalline food</b><br>M. Begüm Özen*, Karl-Friedrich Ratzsch, Volker Rätzsch, Manfred Wilhelm | 21 | <b>How does the composition in fat and interfacial proteins of the droplets influence the structure and texture of high-fat stirred yogurts?</b><br>Marine Moussier*, Delphine Huc-Mathis, Camille Michon, Cyril Chaudemanche, Véronique Bosc |
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