Physics in Food Manufacturing Conference

Programme

Wednesday 9 January
09:00 Registration
10:00-10:15 Welcome
Mr John Bows, PepsiCo, UK. Chair, IOP Physics in Food Manufacturing Group
10:15-10:30 Introduction to Campden BRI
Professor Steven Walker, CEO, Campden BRI, UK

Session: Fats, lipids and nutrition
Chair: Dr Beccy Smith MInstP, Mondelez, UK
10:30 (Invited) Good fat, bad fat – how bad is bad?
Dr Kevin Smith, Fat Science Consulting, UK
11:00 New nanostructural insights into triacylglycerols in the molten state
Michael Rappolt, School of Food Science and Nutrition (UoL), UK
11:20 Structuring edible oils using sterol oleogelators
Stephen Euston, Heriot-Watt University, UK
11:40 Applications of ultrasound in food science – novel control of fat crystallization and structuring
Megan Povey, University of Leeds, UK
12:00 (Invited) Entropy, the second law of thermodynamics and why ‘a calorie may not be a calorie’
Andrew Preece, QinetiQ Group plc, UK
12:30 Lunch and Posters
Exhibition and catering room

Session: Physics of Food Microstructure
Chair: Megan Povey, University of Leeds, UK
13:30 (Invited) Cereals and physics: windows on fundamental realities
Professor Grant Campbell, University of Huddersfield, UK
14:00 Effect of storage temperature and relative humidity on reconstitutable freeze-dried oil-in-water emulsion stabilised by hydrophobically modified starch
Mingduo Mu, University of Leeds, UK
14:20 Wetting, dispersion and dissolution of food powders at different length scales
Marco Ramaioli, University of Surrey, UK
14:40 Fragmented proteins as steric stabilisers and emulsifiers in food colloid formulations
Rammile Ettelaie, University of Leeds, UK
(Invited) Structure and dynamics of lipid assemblies
Dr Arwen Tyler, University of Leeds, UK

Coffee break and Posters
Exhibition and catering room

Exhibitors presentations
16:00 Renishaw
16:05 Oxford Instruments Magnetic Resonance
16:10 Pro-lite Technology Ltd
16:15 COMSOL Ltd
16:20 Camlin Photonics

Careers Panel
Chair: John Melrose, Jacobs Douwe Egberts, UK

Panel:
Dr Beccy Smith, Mondelēz, UK
Bertrand Emond, Campden BRI, UK
Dr Arwen Tyler, University of Leeds, UK

Conference Dinner
Cotswold House Hotel
Thursday 10 January
09:00 Registration

Physical Measurement of Foods
Chair: Mr John Bows, PepsiCo, UK. Chair, Physics in Food Manufacturing Group
09:30 (Invited) Lighting up the world of food security with raman spectroscopy
Professor Roy Goodacre, University of Manchester, UK
10:00 Raman imaging of chocolate and other confectionary
Luen Yan Wong, Renishaw plc, UK
10:20 Investigation of the reconstitution, structure and formation of dairy systems and gels: use of super-resolution microscopy and ultrasound spectroscopy
Zachary Glover, University of Southern Denmark, Denmark
10:40 Hyperspectral Imaging: machine vision and ai for use in food sorting applications
John Gilchrist, Camlin Photonics, UK
11:00 (Invited) mapping food composition by hyperspectral imaging
Dr Martin Whitworth, Campden BRI, UK
11:30 Coffee break, posters and tours of Campden BRI facilities
Exhibition and catering room
12:30 Lunch
Exhibition and catering room

Physical and data modelling of foods
Chair: Dr Robert Farr, Jacobs Douwe Egberts, Coffee Scientist
13:30 (Invited) Getting the most out of physics based modelling in the food industry
Dr Ritchie Parker, Nestlé, Switzerland
14:00 Outdoor 3D imaging of wheat for phenotyping
Imran Mohamed, National Physical Laboratory, UK
14:20 Modelling molecular release during coffee brewing
Dr John Melrose, University of Nottingham, UK
14:40 Electronic inspection of the inner pressure of bottled & canned food or beverages. How convex sets theory defines its limits
Roberto Alfano, University of Derby, UK
15:00 (Invited) Meso-scale modelling and applications in foods
Professor Julia Yeomans, University of Oxford, UK
15:30 Closing remarks and presentation of student poster and presentation prizes
Mr John Bows, PepsiCo, UK. Chair, Physics in Food Manufacturing Group
Physics in Food Manufacturing Conference

16:00 Refreshments and close
Exhibition and catering room

Poster programme

P1. Ultrasound assisted extraction of rice bran protein and its functional properties
Bipro Nath Dubey, Sheffield Hallam University, UK

P2. Ultrasound spectroscopy techniques for the characterization of edible oleofoams
Lorenzo Metilli, University of Leeds, UK

P3. Quantifying the effect of natural antimicrobials and ultrasonic treatment on the stress adaptation and antimicrobial resistance of Listeria in viscoelastic gels
Katherine Costello, University of Surrey, UK

P4. Biotransformation of wastes of agrifood industries for animal feeding
Dounia Lakhal, University Hassan II, Morocco

P5. Lay’s shapes has created exciting products to deliver Lay’s branded snacks to consumers in emerging markets, via soft matter physics & material science tools
John Bows, PepsiCo, UK

P6. Effect of melt temperature on cocoa butter lipolysis
Louise Sim, University of Leeds, UK

P7. Modelling moisture loss in roasting coffee beans
John Melrose, University of Oxford, UK

P8. The modelling of coffee bew yield
John Melrose, Jacobs Douwe Egberts R&D, UK

Marco Marconati, University of Surrey, UK