UK Fluids Network
Special Interest Group 10
**Fluid Mechanics of Cleaning and Decontamination**

# Summer 2018 Conference

29th-30th August 2018

Isaac Newton Institute

Clarkson Road

Cambridge CB3 0EH

# Programme

## Wednesday 29th August

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| 9:00 | Registration |
| 9:30 | Conference Opening |
| 9:45 | ***Plenary Lecture A***<br>Movement of contaminants through cities and buildings<br>*Prof. Paul Linden, University of Cambridge* |
| **10:40** | **MORNING BREAK** |
| 11:00 | Heat transfer in locally-heated falling liquid films<br>*Dr Alice Thompson, University of Manchester* |
| 11:20 | A combined experimental and theoretical study of cleaning in the pharmaceutical industry<br>*Dr Vincent Cregan, University of Limerick* |
| 11:40 | Liquid sprays used in batch cleaning<br>*Alistair Rodgers, University of Leeds* |
| 12:00 | Applications of water jetting in the nuclear industry<br>*Gareth Yates, Sellafield Ltd* |
| 12:20 | Laminar to turbulent transition in the flow field created by impinging liquid jets; effect on cleaning and heat transfer<br>*Rajesh Kumar Bhagat, University of Cambridge* |
| 12:40 | Recent results on the cleaning of a starch layer by a liquid jet and its prediction<br>*Matthias Joppa, Technische Universität Dresden* |
| **13:00** | **LUNCH** |
| 14:00 | ***Plenary Lecture B***<br>The use of bubble acoustics in cleaning and decontamination<br>*Prof. Timothy Leighton, University of Southampton* |
| 15:00 | Bubble propagation in Hele-Shaw channels with centred constrictions<br>*Prof. Anne Juel, University of Manchester* |
| 15:20 *P* | Cleaning patterns on curved walls<br>*Melissa Chee, University of Cambridge* |
| 15:25 *P* | Spreading of contaminant in the intermediate stages of decontamination<br>*Daniil Slavin, University of Cambridge* |
| 15:30 *P* | Monitoring the release of mobile oils from burnt food mixtures<br>*Nathan Ravoisin, University of Cambridge* |
| 15:35 *P* | Modelling of erosion of thin deposited soils by impinging liquid jets<br>*Prof. Ian Wilson, University of Cambridge* |
| **15:40** | **EXTENDED TEA BREAK AND POSTER SESSION** |

# Programme

## Wednesday 29th August

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|---|---|
| 16:20 | The development and initial testing of the ice pig cleaning method for nuclear reprocessing plants<br>*Alex Jenkins, Sellafield Ltd* |
| 16:40 | Experimental study of displacement of a Newtonian fluid by shear-thinning solutions<br>*Evangelina Roumpea, University College London* |
| 17:00 | Three-dimensional DNS of product changeover<br>*Dr Lyes Kahouadji, Imperial College London* |
| 17:20 | Using electrical resistance tomography (ERT) to monitor the removal of a non-Newtonian soil by water from a cleaning-in-place (CIP) circuit containing different pipe geometries<br>*Dr Peter Martin, University of Manchester* |
| 17:40 | Use of machine learning algorithms for prediction of cleaning efficiency of product changeover process<br>*Dr Aditya Karnik, Imperial College London* |
| **18:00** | **SUMMARY OF DAY** |
| **19:30** | **DRINKS RECEPTION AND CONFERENCE DINNER**<br>Main Hall, Jesus College |

Jesus College
Jesus Lane
Cambridge
CB5 8BL

# Programme

## Thursday 30th August

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| 9:00 | ***Plenary Lecture C***<br>What a fluid mechanistic needs to know about surfactants<br>*Prof. Stuart Clarke, University of Cambridge* |
| 10:00 | Methods of monitoring cleaning in situ<br>*Georgina Cuckston, University of Cambridge* |
| 10:20 | Experimental study of the removal of bulk contaminant droplets using an ionic liquid simulant<br>*Dr Merlin Etzold, University of Cambridge* |
| 10:40 | Drop dynamics on liquid infused surfaces<br>*Dr Halim Kusumaatmaja, Durham University* |
| **11:00** | **MORNING BREAK** |
| 11:20 | Experimental derivation of chemical evaporation rates from unclothed and clothed sebum-coated discs under various exposure conditions.<br>*Dr Hazem Matar, University of Hertfordshire* |
| 11:40 | The influence of the thermal properties of the system on the lifetime of an evaporating droplet<br>*Feargus Schofield, University of Strathclyde* |
| 12:00 | Numerical simulations of moving contact lines<br>*Dr Yi Sui, Queen Mary University of London* |
| 12:20 | Surface permeability and capillary transport<br>*Dr Alex Lukiyanov, University of Reading* |
| 12:40 | Gas nanofilms in drop impact and spreading<br>*Dr James Sprittles, University of Warwick* |
| **13:00** | **LUNCH** |
| 14:00 | Homogenisation of agents and cleansers interacting on a microscale<br>*Ellen Luckins, University of Oxford* |
| 14:20 | Decontamination in cracks and fractures<br>*Dr Julien Landel, University of Manchester* |
| 14:40 | Modelling unsaturated decontamination<br>*Oliver Whitehead, Univesity of Oxford* |
| 15:00 | Impinging water jet cleaning of a hydrophobic non-Newtonian soil on flat surfaces<br>*Rubens Rosario Fernandes, University of Cambridge* |
| **15:20** | **CONFERENCE CLOSE** |
| 15:45 | TOUR OF GK BATCHELOR LABORATORY |