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- Hydrodynamics, heat and mass transfer in separation equipment
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- Process design, operation and intensification
- Process equipment characterisation
- Process modelling, simulation and optimisation

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- Fluid flow and mixing in process equipment
- Reactive flow
- Turbulent flow
- Microfluidics
- Multiphase flow
• Computational fluid dynamics  
• Porous media flow  
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• Complex fluids  
• Non-Newtonian fluids  
• Flow visualization

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• Mechanisms of heat and mass transfer  
• Multicomponent mass transfer  
• Simulation of heat and mass transfer processes  
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• In-line measurement and control of material processes  
• Morphological development processes  
• Pre-processing, shaping, multi-layering and finishing of final product form  
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• Structure-function relationships in products and relevant systems  
• Tailoring chemical products and materials for end-use applications

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• Crystallisation and precipitation  
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• Formation and synthesis of particulates  
• Kinetics of particulate processes  
• Measurement and characterisation of particulate systems  
• Processing, handling and storage of powders and dispersions  
• Product formulation and rheology

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• Design, modelling, operation and control of pharmaceutical (bio)reactors, unit operators and process systems used in the production of (bio)pharmaceuticals  
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