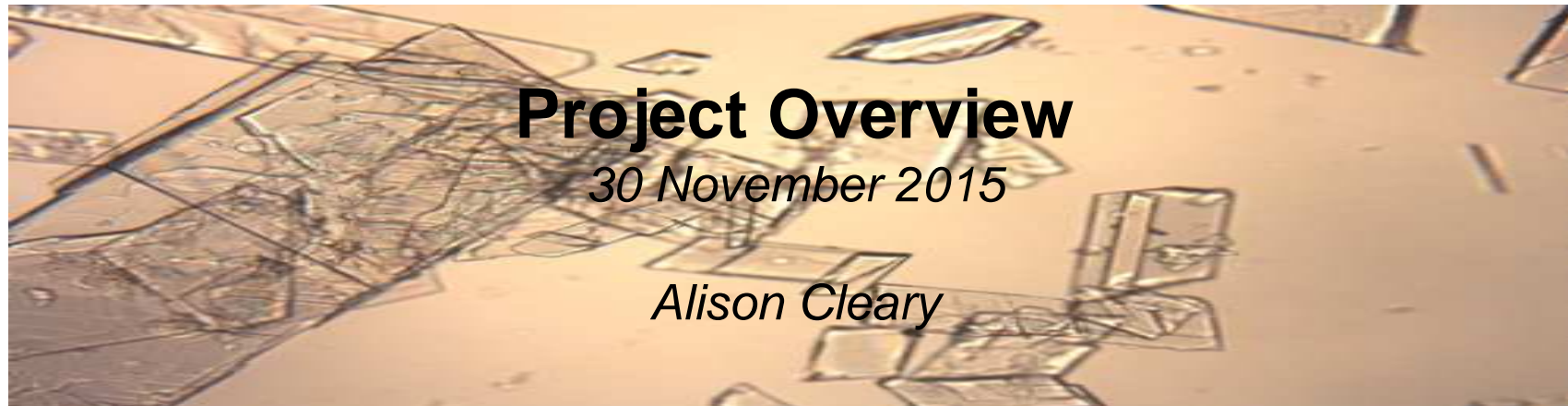


**Intelligent Decision Support and Control Technologies
for Continuous Manufacturing and Crystallisation of
Pharmaceuticals and Fine Chemicals
(ICT-CMAC)**



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Overview

- Outline; aims and objectives
- Impact; progress to date
- Future challenges and opportunities



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ICT-CMAC Vision

‘To assist the development of solutions that allow the migration from batch to continuous production of pharmaceutical products through real-time monitoring, extraction of quantitative particle attributes, intelligent decision support and control’

5-year project

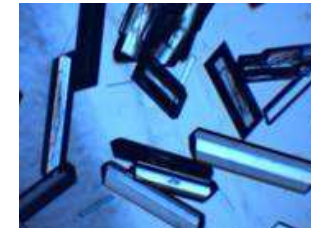
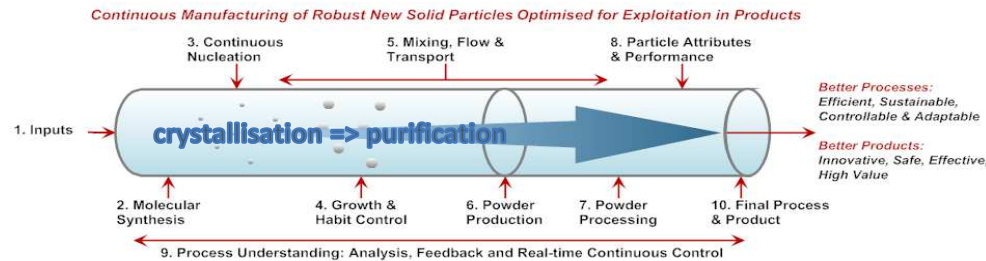
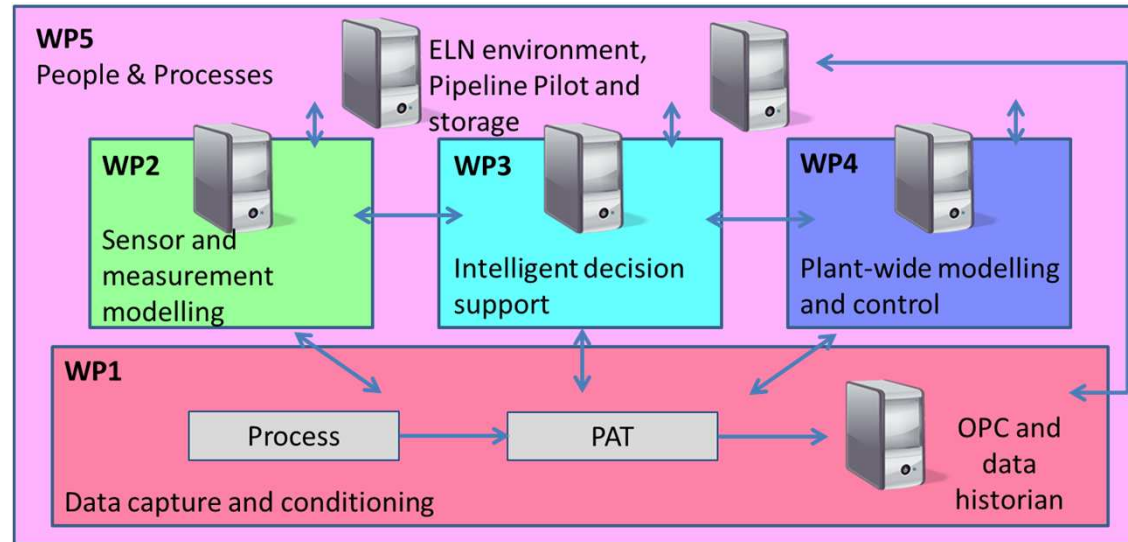


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Integrated Work Packages



Team

- Strathclyde

- Electronic and Electrical Engineering
- Chemical and Process Engineering
- Continuous Manufacturing and Crystallisation (CMAC)
- Mathematics and Statistics
- Mechanical and Aerospace Engineering
- Pure and Applied Chemistry

- Loughborough

- Chemical Engineering

- Industry

- AstraZeneca
- GSK
- Mettler Toledo
- Perceptive Engineering
- PSE (Process Systems Engineering)
- Siemens



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Impact

- Industry-relevant models
 - reflecting crystallisation processes in industry
- Integrated Electronic Laboratory Notebook (ELN) environment
 - comprising the complete continuous crystallisation workflow
- End-to-end integrated software solution



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Challenges and Opportunities

- Unique combination of expertise from different disciplines
- Opportunity to shape the way ELNs operate
 - standardisation of descriptors e.g. chemicals
- Cultural change in experimental procedures and recording



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