

Particle Formation Consultant report 2020

Jim Litster

Particle formation projects

- Predicting crystal shape (Doherty)
- Molecular self assembly (Wiesner)
- ~~Tunable agglomerates by 3-D printing (Hapgood)~~
- Spray nozzles (Ashgriz)
- Adhesion (Sinka)
- Process/Product design models (Smith)
- Crystalliser control (Nagy)

Formation Project Mix

Process	Existing projects
Crystallisation	2 (3)
Granulation	0 (1)
Spray drying	1
Compaction/adhesion	1
Extrusion	0
Product/characterisation	1
Additive manufacture	0
Coating/modification	0
Smart Particles	0

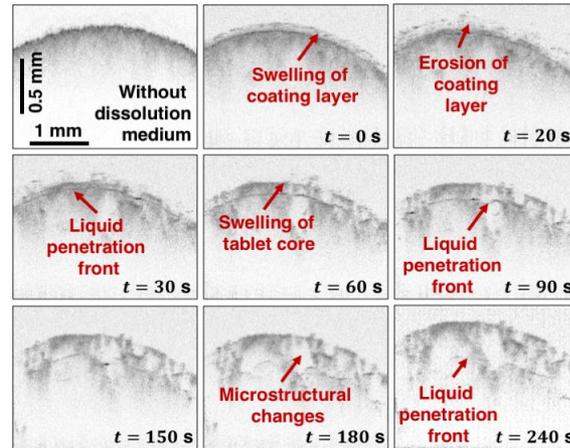
Future Areas?

- Particle coating following on from the Buck review
- Smart particles following Oxley review
- Additive manufacturing
- Insitu measurement of structure development (and destruction)

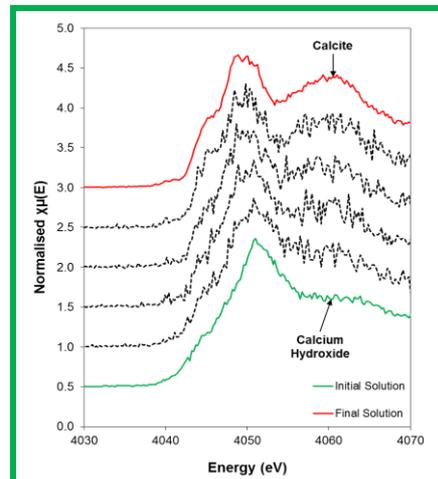
Workshops are very effective in generating good project ideas.

The UK Scene

- Daniel Markl (Strathclyde) – in situ characterisation



- Sven Schroder (Leeds)
- – in situ spectroscopy



The UK scene

- Ricky Wildman (Nottingham) – formulation for 3D printing
- Jonathan Reid (Bristol) – particle formation from aerocolloidal suspension
- Pablo Garcia-Trinanes – powder cohesion and flow

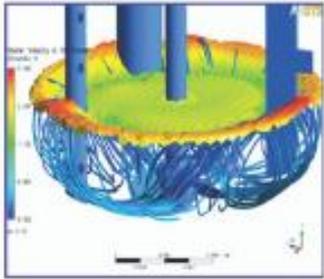


The UK Scene – major hubs

- CMAC <https://www.cmac.ac.uk/>
- MAPP <https://www.cmac.ac.uk/>
- Faraday <https://faraday.ac.uk/>

SSPC - Ireland

- <https://sspc.ie/>
 - Gavin Walker (Limerick) Manufacturing theme director



CFD



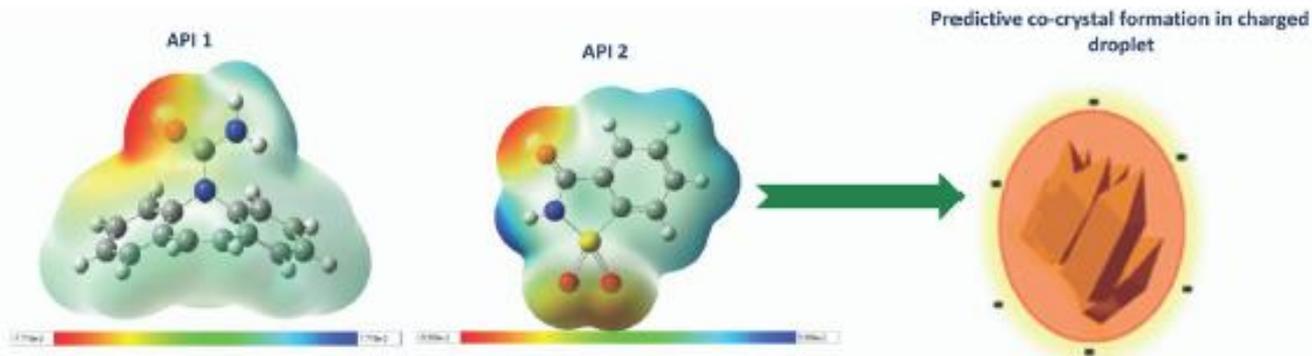
Modelling



DCS



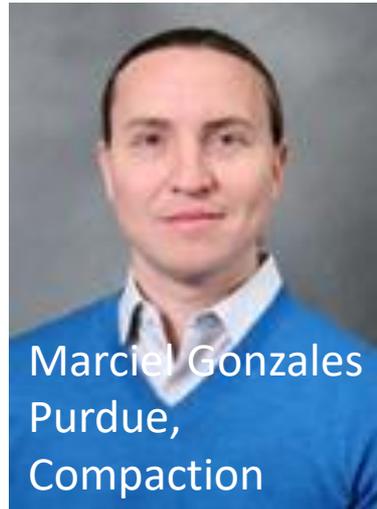
FPM



Other faces



Heather Emady
ASU, Granulation



Marciel Gonzales
Purdue,
Compaction



Tony Zhu
Purdue,
Aerosols



James Elliott
Cambridge
Compaction



Cordelia Selmoulya
UNSW
Encapsulation



Lynne Taylor
Purdue
Amorphous products

Diversity in the IFPRI program - contractors

- By gender:
 - Male 12 (2 to finish)
 - Female 5 (1 to finish)
- By geography
 - North America 6 (1 to finish)
 - Europe 8 (1 to finish)
 - Asia/Pacific 2 (1 to finish)
 - Africa 1

