

# Bridging the gap between bio-inspired nanomaterial chemistry and sustainable manufacture

Bringing together stakeholders to drive the development of nanomaterials through discovery and scale-up.

Giving emphasis to the full scope of experimental and modelling interests, and to both translational and fundamental research.

Attendance and contributions from across academia, industry, government and the third sector are welcome.

Poster sessions and flash presentations included – ECR and PGR contributions particularly welcome.

Topics and sessions include:

- **Materials Inspired by Nature**
- **Nano-products Harnessed for Market**
- **Future Bioinspired Materials Enabled by Research**
- **Sandpit-style workshops and road mapping**

Bioinspired chemistry enables lab-scale preparation of commercially relevant (established and novel) nanomaterials. These methods offer superior control over nanomaterials properties and yet are far more sustainable and less wasteful than existing commercial routes. However, cost-effective, reproducible commercial-scale manufacturing remain elusive. One reason is that, in common with other nanomaterials, the correlation between the materials properties and production scale are not well understood, making scale-up unpredictable, risky and at times impossible.

The EPSRC funded [SynBIM](http://www.synbim.co.uk) project aims to bridge this gap and works on multiple length-scales integrating mechanistic understanding, materials discovery, and process optimisation. It provides responsive development, driving discovery and scale-up together through integrated working within academia and strategic collaboration beyond.

The event combines a one day showcase and half day development workshop. The former will include oral and poster contributions from academia and industry both within and beyond the SynBIM project: reporting on recent progress and exploring the wider vision. The workshop aims to engage funders and R&D specialists from industry and academia to explore future opportunities, new directions and building collaboration.

## Provisional Programme & Speakers

(NB indicates speaker topics – all titles to be confirmed)

### Day 1 – Wednesday 22 January

#### Inspired by Nature (1100-1300)

- Bio-nano interactions in designing materials  
[Marc Knecht](#) (University of Miami)
- Magnetic Nanoparticles – discovery and developmental chemistry (SynBIM Project Speaker)  
[Paul Southern](#) (Resonant Circuits)
- Magnetic Nanoparticles – products and market perspective  
[Paul Southern](#) (Resonant Circuits)
- Cluster formation pathways (SynBIM Project Speaker)  
[Miguel Jorge](#) (University of Strathclyde)
- Reactive modelling of self-assembly/clustering with inorganics  
[Miguel Jorge](#) (University of Strathclyde)

#### Lunch & Poster Session (1300-1400)

#### Harnessed for Market (1400-1600)

- Silica nanoparticles - markets, products, challenges and outlook  
[John Hanrahan](#) (Glantreo)
- The development of green silica (SynBIM Project Speaker)
- Fluid dynamics (SynBIM Project Speaker)
- Process design and scale-up – [Ian Houson](#) (University of Strathclyde)
- Environmental appraisal - [Stuart Coles](#) (University of Warwick)

#### Enabled by Research (1630-1730)

- Update on the Funding Landscape (Speakers tbc)
- Distillation of Challenges and Opportunities
- Discussion

#### Poster session + Networking Reception (1730-1830)

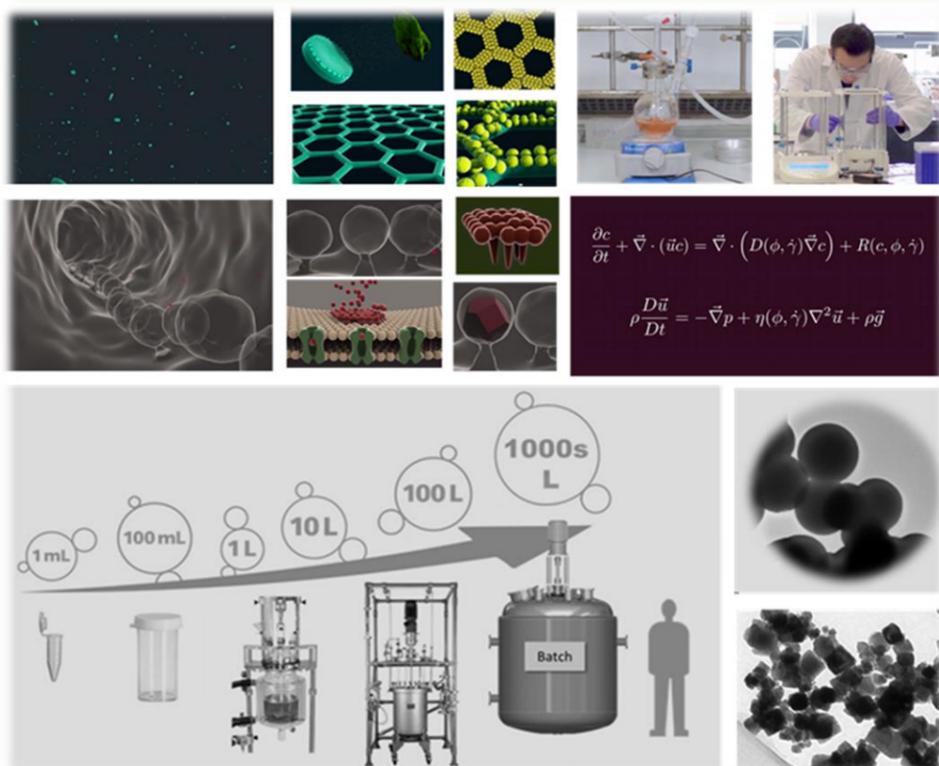
#### Symposium Dinner (evening)

### Day 2 - Thursday 23 January

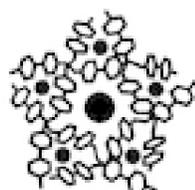
#### Workshop (0900-1230)

- Sandpit-style workshops and road mapping
- Near Term Challenges / Translational Research / Direct Impact
- Longer Term Challenges / Fundamental Research / Indirect impact

#### Lunch & Close (1230-1330)



## Event Partners and Sponsors



Directed Assembly Network  
BEYOND THE MOLECULE

**Innovate UK**  
Knowledge Transfer Network



**Multiphase Flow and Transport Processes**  
Special Interest Group, UK Fluids Network

**EPSRC**

Engineering and Physical Sciences  
Research Council

---

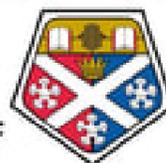
## Project Partners



THE UNIVERSITY  
*of* EDINBURGH



The  
University  
Of  
Sheffield.



University of  
**Strathclyde**



**MERCK**

