

## UK Catalysis Hub Webinar Programme Joint Event with RSC Applied Catalysis Group 17<sup>th</sup> Sept 14:00-16:00 (Replaces one day physical event)

<https://ukcatalysishub.co.uk/webinars/>

Registration will be available via the above link in early September.

Details of the four speakers' topics are in the programme extract below:

The Applied Catalysis Group (ACG) & UK Catalysis Hub Meeting

Dr. Christopher Mitchell (Sabic), Dr. Robert Parry (SRP Catalysts),

Dr. Andrew Marr (QUB) & Dr. Katherine Wheelhouse (GSK)

**Dr. Christopher Mitchell (SABIC) 'Laboratory scale testing of formed catalyst particles'**

For many heterogeneously catalysed processes, the final commercial application requires the use of formed catalyst particles in order to manage pressure drop, heat and mass transfer etc. It is therefore imperative that the performance of catalysts in their final form is evaluated relatively early in the development cycle. The presentation will cover different approaches to the testing of formed catalysts at the lab scale, in particular the concept of a "pellet string" reactor.

**Dr. Robert Parry (SRP Catalysts) 'A look at Powder Hydrogenation Catalysts; Increasing the Catalyst performance'**

Many of the catalysts handled and used industrially, will be formed to a shape like extrusions, tablets, spheres etc for use in continuously operated reactors. However powdered catalysts used in batch, slurry reactors are also widely used particular for Fine and Specialty chemicals. This presentation looks at a snapshot of catalyst manufacture, some tips on mixing and usage, reactor types and separation and catalyst reuse for subsequent batches. The necessity for improved activity and selectivity to the desired product, improved mixing, gas distribution and the relation to process scale up from lab and pilot plants, leads to many difficult questions. This short presentation attempts to elucidate the whole trouble-shooting field even down to purity of process gases, reactor types and feedstock purity and cost versus its catalyst poison profile. Examples of 3 applications for powdered catalysts are discussed.

**Dr. Andrew Marr (QUB) 'Biocatalysis and Homogenous Catalysis: best kept apart, or stronger together?'**

The rapid growth of biocatalysis research has provided many new technologies, and solved significant problems in chemicals synthesis. Examples can be found for which biocatalytic methods are a significant improvement over traditional routes. However, it is unlikely that biocatalysts will provide a cost-effective alternative to chemocatalysts in every case. This means that the ideal synthesis of a valuable target is likely to comprise a mixture of biocatalytic and chemocatalytic steps. It is therefore timely to examine the similarities and differences, the compatibilities and incompatibilities of the two approaches. In this lecture the growing relationship between biocatalysis and homogeneous catalysis will be highlighted, and we will consider the question: should biocatalysis and homogenous catalysts be kept apart, or are they stronger together?

**Dr. Katherine Wheelhouse (GSK) 'Catalyst selection in pharmaceutical manufacture'**

The types of reaction typically performed in pharma, how catalysts are selected from a performance and availability perspectives and the additional consideration of residual metals in the product.