



Developing catalysts using  
non-critical elements designed  
to unlock the potential of biomass

# JOIN OUR WEBINAR

## 27th May 2015 @ 9am

(10am CET and 5pm Japanese time)

**Overview:** This free webinar will take about 1 hour with a short introduction by the Novacam Project Leader (Professor Emiel Hensen, Technische Universiteit Eindhoven), 40 minutes lecture (Sankar Meenakshisundaram, Cardiff University) and 20 minutes for discussion of the questions collected from delegates during the lecture.

### Strategies to synthesis supported bimetallic catalysts for selective oxidation & direct synthesis of hydrogen peroxide reactions

Dr. M. Sankar

**Abstract:** *In this lecture, I will give an overview of the recent developments in the synthesis strategies of supported gold- based bimetallic nanoparticle catalysts. The catalytic efficiency of these supported bimetallic nanoparticles, similar to monometallic nanoparticles, depends on their structural characteristics, but with added complexities because of the presence of the second metal. I will discuss three major structural features of supported bimetallic nanoparticles, namely (a) size, (b) composition and (c) nanostructure, all of which play a crucial role in the resulting overall catalytic performances of the materials.*

*A specific objective of this lecture is to motivate researchers to characterize these supported nanoparticles more thoroughly to investigate their structural features in detail and design based on this knowledge suitable and innovative synthesis strategies to control these properties. In this lecture I will focus only on gold-palladium bimetallic nanoparticles; however the broader scientific message could be extended to other bimetallic catalyst compositions.*

#### References

1. P. Paalanan, B. M. Weckhuysen, M. Sankar, *Catal. Sci. Technol.*, 2013, 3, 2869–2880.
2. G. J. Hutchings and C. J. Kiely, *Acc. Chem. Res.*, 2013, 46 (8), pp 1759–1772.
3. M. Sankar, Q. He, M. Morad, J. Pritchard, S. J. Freakley, J. K. Edwards, S. H. Taylor, D. J. Morgan, A. F. Carley, D. W. Knight, C. J. Kiely, G. J. Hutchings, *ACS Nano* 2012, 6, 6600–6613



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