

# **RSC Speciality Chemicals Symposium 2009: Catalysts for Change**

## **Catalysis within DSM: Enabling, Improving, and Changing Chemicals Manufacture**

**Paul L. Alsters  
DSM Pharmaceutical Products  
Innovative Synthesis & Catalysis, P.O. Box 18, NL-6060 MD Geleen, The  
Netherlands  
paul.alsters@dsm.com**

Catalytic processes are of vital importance to all business units of DSM: Nutrition, Pharma, Performance Materials and Industrial Chemicals. Catalysis enables chemical reactions that would not occur otherwise. Process improvement is often achieved by improving catalyst performance in terms of chemical and cost efficiency. New developments in the areas of homogeneous, heterogeneous, bio- or organocatalysis not only serve to achieve incremental process improvements, but also initiate step changes ultimately resulting in completely new production methods with lower cost and less waste.

Production processes within DSM Pharmaceutical Products differ from those in other business units in that they typically employ a great diversity of chemical reactions. This diversity is the combined effect of:

- Small production volumes but high prices of a typical pharmaceutical product (allowing technologies not technically and/or economically feasible in other markets)
- The short product lifecycle of many pharmaceutical products (calling for frequent process and technology switches)
- The complex molecular structure of a typical pharmaceutical compound (often requiring enantioselective processes/catalysis).

As a result, all above mentioned forms of catalysis are of interest for DSM Pharmaceutical Products. The lecture will demonstrate various uses of catalysis within DSM and the impact of catalysis on cost and waste reduction. The

relevance of catalyst recycling and various ways to achieve this will also be addressed.