

**(Swiss) Innovations in selective heterogeneous hydrogenations –
from the 1950s to the present day.**

Jonathan Medlock

DSM Nutritional Products, Kaiseraugst, Switzerland
jonathan.medlock@dsm.com

Vitamins are essential for human and animal life and can have other applications e.g. as antioxidants. Since production quantities can exceed 10,000 t/a, even small improvements in production efficiency can yield high benefits. Selective hydrogenation reactions are crucial for the cost-effective production of vitamins.

In this presentation we will describe the development of selective hydrogenation reactions, in particular the reduction of alkynes to alkenes, for the synthesis of vitamins, carotenoids and aroma compounds. Starting from the well-known “Lindlar catalyst” we will highlight recent developments/improvements including our success in developing a lead-free, continuous semi-hydrogenation process using 3D-printed reactor technology.