

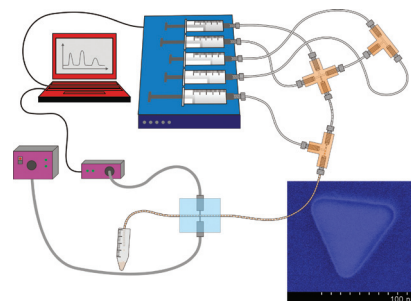
In this issue

Andrea Knauer and J. Michael Koehler
Screening of nanoparticle properties in microfluidic syntheses

DOI 10.1515/ntrev-2013-0018
 Nanotechnol Rev 2014; 3(1): 5–26

Review: This review article gives an overview of various nanomaterials that were preferably synthesized by microfluidic synthesis strategies; special focus is on parameter screening and tuning methods, which are conducted particularly well by means of microfluidics.

Keywords: micro-flow-through synthesis; nanomaterials; nanoparticles; nanoparticle screening; process parameter tuning.

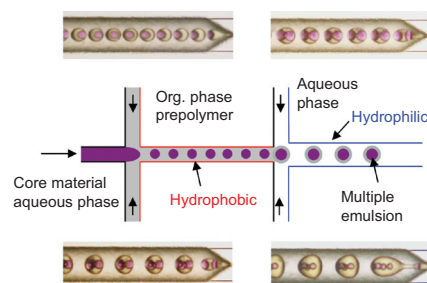


Dusan Boskovic and Stefan Loebbecke
Synthesis of polymer particles and capsules employing microfluidic techniques

DOI 10.1515/ntrev-2013-0014
 Nanotechnol Rev 2014; 3(1): 27–38

Review: This paper reviews the main strategies for microfluidic polymer particle and microcapsule synthesis and the main challenges that must be overcome in order to establish the techniques as a competitive alternative to conventional processes.

Keywords: droplet formation; microcapsules; microfluidics; numbering-up; polymer particles.

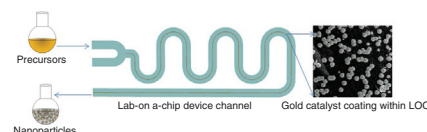


Chelliah V. Navin, Katla Sai Krishna, Chandra S. Theegala and Challa S.S.R. Kumar
Lab-on-a-chip devices for gold nanoparticle synthesis and their role as a catalyst support for continuous flow catalysis

DOI 10.1515/ntrev-2013-0028
 Nanotechnol Rev 2014; 3(1): 39–63

Review: We focus on the synthesis and catalysis applications of nanostructured gold using the lab-on-a-chip (LOC) systems and provide an up-to-date analysis.

Keywords: catalysis; gold; lab-on-a-chip systems.



Elnaz Shahbazali, Volker Hessel,
Timothy Noël and Qi Wang

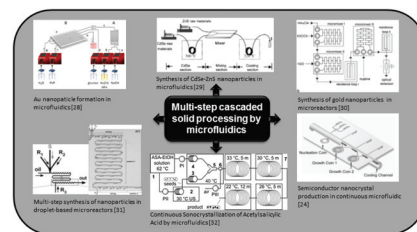
Metallic nanoparticles made in flow and their catalytic applications in organic synthesis

DOI 10.1515/ntrev-2013-0017

Nanotechnol Rev 2014; 3(1): 65–86

Review: This paper reviews recent developments on the synthesis of noble metal nanoparticles in micro and millifluidic devices and their catalytic application in organic flow synthesis.

Keywords: catalyst; flow chemistry; metal nanoparticles; synthesis.



Jens Baumgard, Marga-Martina Pohl,
Udo Kragl and Norbert Steinfeldt

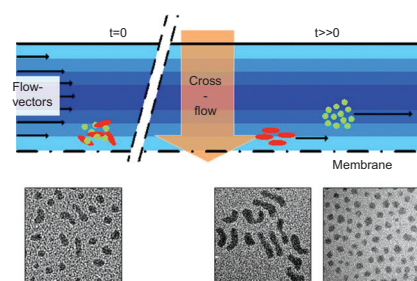
Preparation of tailor-made supported catalysts using asymmetric flow field flow fractionation and their application in hydrogenation

DOI 10.1515/ntrev-2012-0086

Nanotechnol Rev 2014; 3(1): 87–98

Research highlight: Here, it will be demonstrated that the asymmetric flow field flow fractionation is a suitable technique for the preparative size separation of real nanoparticle mixtures with particle sizes below 10 nm.

Keywords: asymmetric flow field flow fractionation; hydrogenation; nanoparticles; preparative size separation; supported catalyst.



Hannes Alex, Norbert Steinfeldt,
Klaus Jähnisch, Matthias Bauer and
Sandra Hübner

On the selective aerobic oxidation of benzyl alcohol with Pd/Au-nanoparticles in batch and flow

DOI 10.1515/ntrev-2012-0085

Nanotechnol Rev 2014; 3(1): 99–110

Research highlight: We report on the selective aerobic oxidation of benzyl alcohol catalyzed by unsupported Pd/Au and Pd nanoparticles (NPs) at atmospheric pressure in batch and flow as well as on *in situ* extended X-ray absorption fine structure (EXAFS) measurements, which were performed to get insight in the process during NP catalysis.

Keywords: aerobic oxidation; benzyl alcohol; EXAFS; microstructured reactors; nanoparticles.

