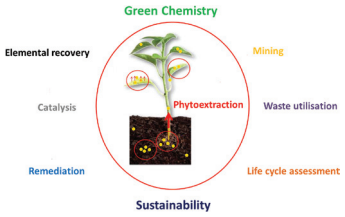
In this issue

Andrew J. Hunt, Christopher W.N. Anderson, Neil Bruce, Andrea Muñoz García, Thomas E. Graedel, Mark Hodson, John A. Meech, Nedal T. Nassar, Helen L. Parker, Elizabeth L. Rylott, Konastantina Sotiriou, Qing Zhang and James H. Clark
Phytoextraction as a tool for green chemistry

DOI 10.1515/gps-2013-0103
Green Process Synth 2014; 3: 3–22

Review: The subject of elemental recovery, sustainability and use is now a complex and global issue.

Keywords: elemental sustainability; green chemistry; life cycle assessment; metal recovery; phytoextraction.

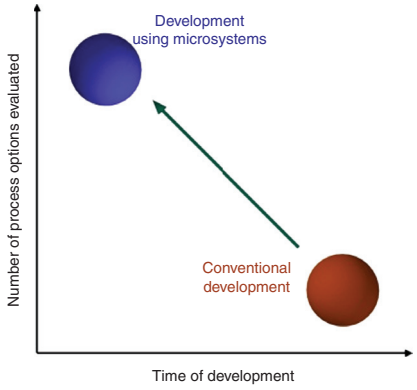


Ulrich Krühne, Søren Heintz, Rolf Ringborg, Inês P. Rosinha, Pär Tufvesson, Krist V. Gernaey and John M. Woodley
Biocatalytic process development using microfluidic miniaturized systems

DOI 10.1515/gps-2013-0089
Green Process Synth 2014; 3: 23–31

Review: Potential high throughput biocatalytic process development paradigm.

Keywords: biocatalysis; microfluidics; process development; transaminase.

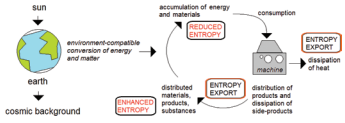


Johann Michael Köhler
The ecological time-scale violation by industrial society and the chemical challenges for transition to a sustainable global entropy export management

DOI 10.1515/gps-2013-0083
Green Process Synth 2014; 3: 33–45

Original article: The key issue for overcoming the drastic recent ecological time-scale violation and the development of a true sustainable chemical production is the complete connection of energy and material conversion with the permanently working natural global entropy export system.

Keywords: bridging technology; entropy export; sustainability; time-scale violation.



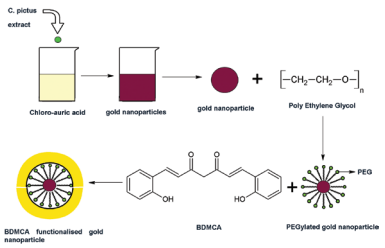
Rajagopal Aruna Devi, Arul Prakash Francis and Thiyagarajan Devasena

Green-synthesized gold nanocubes functionalized with bisdemethoxycurcumin analog as an ideal anticancer candidate

DOI 10.1515/gps-2013-0090
Green Process Synth 2014; 3: 47–61

Original article: Schematic representation of biosynthesis of gold nanoparticles, which also explains the functionalization of gold nanoparticle using bisdemethoxycurcumin analog.

Keywords: BDMCA; *Costus pictus*; cytotoxicity; gold nanocubes; green synthesis.



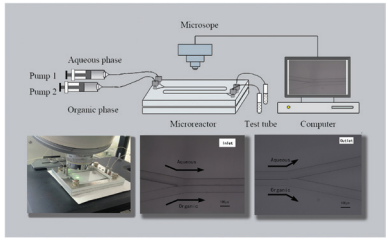
Shaohua Ju, Peng Peng, Yaqian Wei, Lei Xu, Shenghui Guo, Libo Zhang, Lihua Zhang and Linqing Dai

Solvent extraction of In^{3+} with microreactor from leachant containing Fe^{2+} and Zn^{2+}

DOI 10.1515/gps-2013-0048
Green Process Synth 2014; 3: 63–68

Original article: The solvent extraction in a microchip shows an extraction ratio of In^{3+} of 90.80%, with co-extraction of only 0.16% Fe^{2+} and 0.22% Zn^{2+} impurities.

Keywords: indium; mass transfer; microreactor; solvent extraction.



Srinivas Reddy Kamireddy, Evguenii I. Kozliak, Melvin Tucker, Yun Ji

Determining the kinetics of sunflower hulls using dilute acid pretreatment in the production of xylose and furfural

DOI 10.1515/gps-2013-0095
Green Process Synth 2014; 3: 69–75

Original article: The xylan hydrolysis kinetic model of sunflower hull pretreatment was investigated during biochemical conversion process.

Keywords: Arrhenius parameters; hemicellulose; kinetic model; pretreatment; sunflower hulls.