In this issue

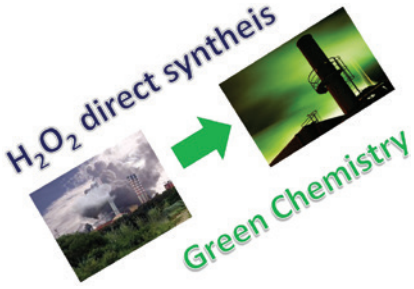
Irene Huerta, Pierdomenico Biasi, Juan García-Serna, Maria J. Cocero, Jyri-Pekka Mikkola and Tapio Salmi

Continuous H_2O_2 direct synthesis process: an analysis of the process conditions that make the difference

DOI 10.1515/gps-2016-0001
Green Process Synth 2016; 5: 341–351

Original article: Reaction conditions will help to enhance the understanding of the H_2O_2 direct synthesis mechanism.

Keywords: direct synthesis; heterogeneous catalysis; hydrogen peroxide; palladium on carbon; trickle bed reactor.



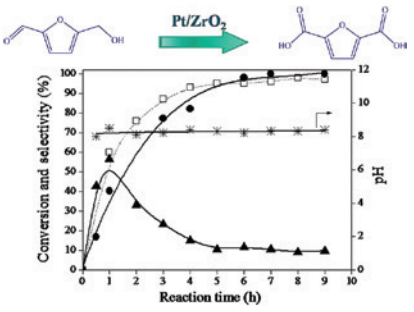
Erica Daniele da Silva, Wilma A. Gonzalez and Marco A. Fraga

Aqueous-phase oxidation of 5-hydroxymethylfurfural over Pt/ZrO_2 catalysts: exploiting the alkalinity of the reaction medium and catalyst basicity

DOI 10.1515/gps-2016-0010
Green Process Synth 2016; 5: 353–364

Original article: Low Mg loading solid solutions showed encouraging results to synthesize bifunctional catalysts, and it is shown that hosting Mg into ZrO_2 crystalline structure does not prevent leaching upon reaction in aqueous medium.

Keywords: aqueous-phase processing; biomass; FDCA; green chemistry; solid solution.



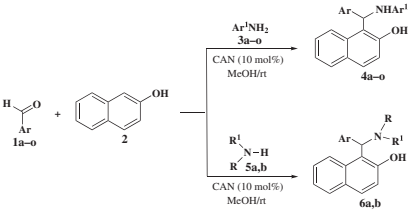
Ramadan Ahmed Mekheimer, Abdullah Mohamed Asiri, Afaf Mohamed Abdel Hameed, Reham R. Awed and Kamal Usef Sadek

An efficient multicomponent, one-pot synthesis of Betti bases catalyzed by cerium (IV) ammonium nitrate (CAN) at ambient temperature

DOI 10.1515/gps-2016-0012
Green Process Synth 2016; 5: 365–369

Original article: One-pot synthesis of Betti bases using cerium (IV) ammonium nitrate (CAN) as a Lewis acid catalyst at room temperature is reported.

Keywords: 2-naphthol; Betti base; cerium (IV) ammonium nitrate (CAN); one-pot synthesis.



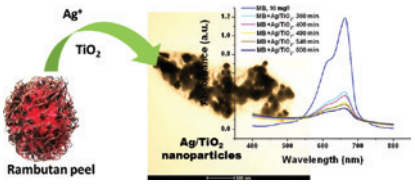
Brajesh Kumar, Kumari Smita, Yolanda Angulo and Luis Cumbal

Valorization of rambutan peel for the synthesis of silver-doped titanium dioxide (Ag/TiO_2) nanoparticles

DOI 10.1515/gps-2016-0003
Green Process Synth 2016; 5: 371–377

Original article: Environmentally benign method and valorization of discarded agricultural waste for the synthesis of Ag/TiO_2 nanoparticles are suggested.

Keywords: green synthesis; methylene blue; photocatalytic degradation; silver-doped TiO_2; TEM; XRD.



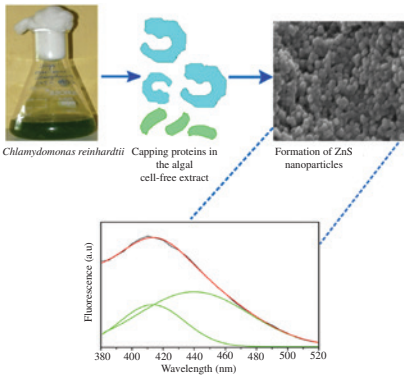
M. Divya Rao and Gautam Pennathur

Facile bio-inspired synthesis of zinc sulfide nanoparticles using *Chlamydomonas reinhardtii* cell free extract: optimization, characterization and optical properties

DOI 10.1515/gps-2016-0008
Green Process Synth 2016; 5: 379–388

Original article: This work deals with the biogenic synthesis of semiconductor zinc sulfide nanoparticles using cell free extract of *Chlamydomonas reinhardtii*, their optimization and unique optical properties.

Keywords: *Chlamydomonas reinhardtii*; DLS; green synthesis; photoluminescence spectroscopy; zinc sulfide nanoparticles.



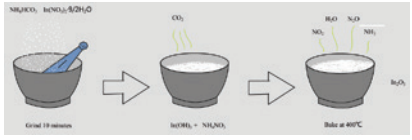
Guilin Chen and Jianmin Li

Synthesis of In_2O_3 nanoparticles via a green and solvent-free method

DOI 10.1515/gps-2016-0019
Green Process Synth 2016; 5: 389–394

Original article: The structure, optical properties and morphology of green, solvent-free solid state reaction derived In_2O_3 nanoparticles have been investigated.

Keywords: In_2O_3 nanoparticles; optical properties; solvent-free synthesis; structure.



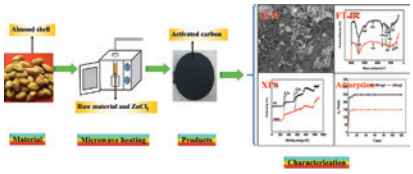
Chunfeng Du, Hongbing Yang, Zhansheng Wu, Xinyu Ge, Giancarlo Cravotto, Bang-Ce Ye and Imdad Kaleem

Microwave-assisted preparation of almond shell-based activated carbon for methylene blue adsorption

DOI 10.1515/gps-2016-0032
Green Process Synth 2016; 5: 395–406

Original article: Preparation of almond shell-based activated carbon and its characterization are reported.

Keywords: activated carbon; almond shell; methylene blue; microwave; response surface methodology.



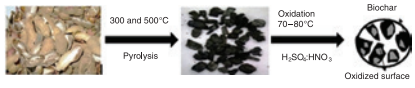
Abdul Ghaffar and Ghulam Abbas

Adsorption of phthalic acid esters (PAEs) on chemically aged biochars

DOI 10.1515/gps-2016-0014
Green Process Synth 2016; 5: 407–417

Original article: The aging of biochars was simulated by chemical oxidation process with H_2SO_4/HNO_3 mixture.

Keywords: adsorption; aging process; chemical oxidation; oxidized biochar; phthalic acid esters (PAEs).



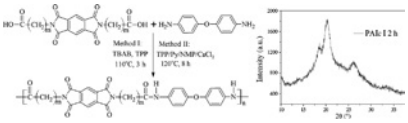
Jinhui Feng, Fuyan He, Zhizhou Yang and Jinshui Yao

Synthesis and characterization of polyamide-imides based on the different chain length of amino acids in molten TBAB as a green media

DOI 10.1515/gps-2016-0033
Green Process Synth 2016; 5: 419–425

Original article: Compared to conventional polycondensation, polyamide-imides synthesized using ionic liquid had higher molecular weight, viscosity, and yields and better heat resistance, mechanical properties, and crystallinity after annealing treatment as a result of their excellent regular arrangement of segments.

Keywords: amino acids; conventional polycondensation; crystallinity; ionic liquid; polyamide-imides.



Peng Cen, Wenyuan Wu and Xue Bian

A novel process for recovery of rare earth and fluorine from bastnaesite concentrates. Part I: calcification roasting decomposition

DOI 10.1515/gps-2016-0031
Green Process Synth 2016; 5: 427–434

Original article: Bastnaesite can be sufficiently decomposed at lower temperature with calcium hydroxide added, and the fluorine in the ores can be fixed in the form of calcium fluoride, which makes it possible for resource utilization and environmental protection.

Keywords: bastnaesite; calcification roasting; calcium fluoride; fluorine; rare earth.