IN THIS ISSUE:

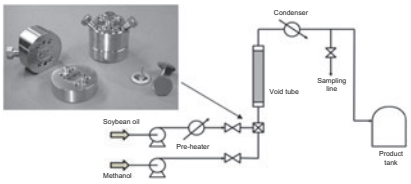
Elio Santacesaria, Rosa Turco, Miriam Tortorelli, Vincenzo Russo, Martino Di Serio and Riccardo Tesser

Biodiesel process intensification: the role of the liquid-liquid interface area in the achievement of a complete conversion in few seconds

DOI 10.1515/gps-2012-0001
Green Process Synth 1 (2012): 181–189

Original article: Biodiesel process intensification using a micro mixer device followed by a small void tube. By using this device, a nearly complete conversion can be obtained, at 60°C and atmospheric pressure, in less than 10 s thanks to the extremely efficient liquid-liquid micro-mixing effect.

Keywords: biodiesel; kinetics; micro-mixer; process intensification; transesterification.



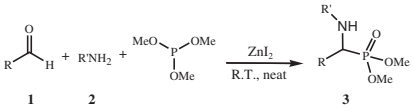
Zahed Karimi-Jaberi, Masoud Mardani and Mohammad Amiri

Green, one-pot synthesis of α-aminophosphonates catalyzed by ZnI_2 at room temperature

DOI 10.1515/gps-2011-0028
Green Process Synth 1 (2012): 191–193

Original article: An efficient, green and simple solvent-free method is described for the synthesis of α-aminophosphonates base on one-pot three-component condensation of trimethyl phosphite, aldehydes and amines in the presence of zinc iodide.

Keywords: α-aminophosphonates; room temperature; solvent-free; trimethylphosphite; zinc iodide.



Chi Wai Kan, Yin Ling Lam and Chun Wah Yuen

Fabric handle of plasma-treated cotton fabrics with flame-retardant finishing catalyzed by titanium dioxide

DOI 10.1515/gps-2011-0018
Green Process Synth 1 (2012): 195–204

Original article: This paper studied the fabric handle, measured in term of low stress mechanical properties, of plasma-treated cotton fabrics with flame-retardant finishing catalysed by titanium dioxide.

Keywords: flame-retardant; low stress mechanical properties; plasma; pre-treatment; titanium dioxide.

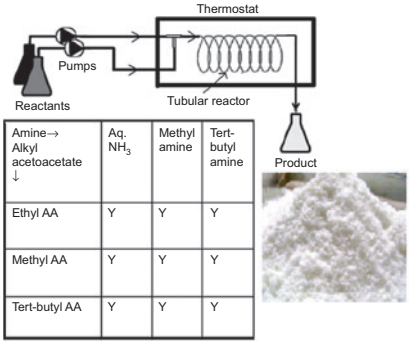
Ramesh A. Joshi, Rohini R. Joshi, Jagdish Tibhe, Nayana T. Nivangune and Amol A. Kulkarni

Continuous flow synthesis of β-amino α, β-unsaturated esters in aqueous medium

DOI 10.1515/gps-2011-0002
Green Process Synth 1 (2012): 205–210

Original article: A continuous flow scalable process is demonstrated for the synthesis of 9 different β-amino crotonates with emphasis on intensified process for synthesis of methyl amino crotonate.

Keywords: β-amino crotonate; continuous flow synthesis; Hantzsch synthesis; microreactor.



Amine→ Alkyl acetoacetate ↓	Aq. NH_3	Methyl amine	Tert-butyl amine
Ethyl AA	Y	Y	Y
Methyl AA	Y	Y	Y
Tert-butyl AA	Y	Y	Y

Dirk Ziegenbalg, Christoph Kompter, Friedhelm Schönfeld and Dana Kralisch

Evaluation of different micromixers by CFD simulations for the anionic polymerisation of styrene

DOI 10.1515/gps-2012-0004
Green Process Synth 1 (2012): 211–224

Original article: Semi-quantitative CFD calculations were used to determine the best suited micromixer out of a collection of different devices. As a result it could be shown that CFD calculations can beneficially be used to rank micromixing devices for specific process conditions and synthesis tasks.

Keywords: anionic polymerisation; micromixer; reaction control; simulation.