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Maximilian Hempel
Funding activities by the German Federal Environmental Foundation (Deutsche Bundesstiftung Umwelt) in the field of sustainable chemistry

DOI 10.1515/gps-2012-0024
Green Process Synth 1 (2012): 253–259

Review: A brief overview about the promoting activities of the Deutsche Bundesstiftung Umwelt in the field of green and sustainable chemistry is given.

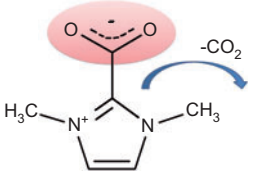
Keywords: chemical leasing; chemical processing; novel process windows; solvent-free; sustainable chemistry.

Denis Breuch and Holger Löwe
Heterogenously catalyzed one-step alkylation and carboxylation of *N*-methylimidazole with dimethyl carbonate in continuous flow

DOI 10.1515/gps-2012-0031
Green Process Synth 1 (2012): 261–267

Original article: The continuous flow alkylation of *N*-methylimidazole with dimethylcarbonate at 200°C gives nearly quantitative yield of the solid zwitterion *N,N'*-dimethylimidazolium-2-carboxylate, a versatile precursor for manufacturing of non-halide containing ionic liquids.

Keywords: alkylation; carboxylation; ionic liquid; *N*-methylimidazole.

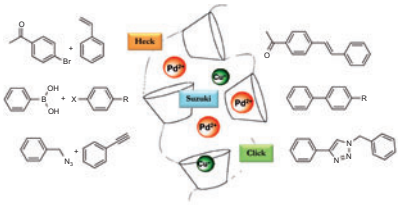


Giancarlo Cravotto, Emanuela Calcio Gaudino, Silvia Tagliapietra, Diego Carnaroglio and Antonio Procopio
A green approach to heterogeneous catalysis using ligand-free, metal-loaded cross-linked cyclodextrins

DOI 10.1515/gps-2012-0029
Green Process Synth 1 (2012): 269–273

Original article: $Pd^{(II)}$ or $Cu^{(I)}$-loaded /β-polycyclodextrin catalysts, was effectually applied in C-C couplings (Heck and Suzuki) and Alkyne/azide [3+2] cycloadditions under microwave irradiation.

Keywords: click chemistry; cross-linked cyclodextrins; Heck and Suzuki reactions; heterogeneous catalysis; $Pd^{(II)}/Cu^{(I)}$ catalysts.

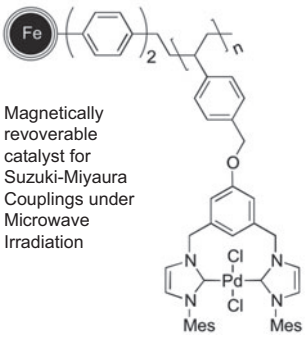


Sebastian Wittmann, Jean-Pierre Majoral, Robert N. Grass, Wendelin J. Stark and Oliver Reiser
Carbon coated magnetic nanoparticles as supports in microwave-assisted palladium catalyzed Suzuki-Miyaura couplings

DOI 10.1515/gps-2012-0036
Green Process Synth 1 (2012): 275–279

Original article: Polystyrene-modified carbon coated iron nanoparticles as magnetically recyclable support for a palladium-NHC complex in Suzuki Miyaura coupling reactions.

Keywords: magnetic nanoparticles; microwave irradiation; palladium-*N*-heterocyclic carbene catalysts; recyclable catalyst; Suzuki-Miyaura coupling.



Magnetically revoverable catalyst for Suzuki-Miyaura Couplings under Microwave Irradiation

Roman Morschhäuser, Matthias Krull, Christoph Kayser, Cornelia Boberski, Ralf Bierbaum, Peter A. Püschner, Toma N. Glasnov and C. Oliver Kappe

Microwave-assisted continuous flow synthesis on industrial scale

DOI 10.1515/gps-2012-0032
Green Process Synth 1 (2012): 281–290

Original article: A continuous flow microwave reactor for large scale synthesis is described. A throughput of 20 l/h in a high-T/p process window (310°C, 60 bar) can be realized in an energy efficient manner.

Keywords: continuous flow chemistry; high-temperature/high-pressure process windows; microwave chemistry; process intensification.