

Microwave, Acoustic & Plasma assisted Syntheses

Issue 1



Project Acronym: MAPSYN

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Welcome to the first issue of the MAPSYN Newsletter. This 6-monthly, fully accessible communication tool on the MAPSYN project will provide information on project progress, announces of important events and other up-to-date news addressed to the MAPSYN network, policy makers and the scientific community. Each issue will be available both in PDF and accessible HTML format via <http://mapsyn.eu>.

The MAPSYN project (Microwave, Acoustic and Plasma assisted SYNtheses) aims at nitrogen-fixation reactions intensified by plasma catalysis and selective hydrogenations intensified by microwaves, possibly assisted by ultrasound. Energy efficiency is the key motif of the project and the call of the European Union behind (NMP.2012.3.0-1; highly efficient chemical syntheses using alternative energy forms). The material (catalysis) and process innovations given in the literature for the two demonstration examples (of the project) are reviewed and added by the project's own ones derived from the latest state of the art. From there still a gap to industrialization needs to be closed which needs innovation as well on the level of process control and plant operation, finally opening gates to new business models (distributed production and modular plant-numbering up instead of scale-up). Such systemic solution shall be developed under the supervision of energy and cost analysis as well as life-cycle analysis to ensure following a holistic approach. This demands for a new science management not focusing only on the key innovation, but as well as on other assisting enabling technologies needed and for the systemic vision with plant view and process control – all centred around industrial reaction equipment.

MAPSYN kickoff meeting:

The MAPSYN Kick-off meeting took place on the 29th of January 2013 at C-Tech Innovation facilities in Chester where representatives from the twelve partners attended: Eindhoven University (TU/e), IMM, University of Hull, Evonik Industries, DSM, Coventry University, Syrris, Turin University, Alicante University, UWE and KPE. Also, the Project Officer from the European Commission attended. In this first meeting the objectives and first steps were presented, and the contents of each of the actions of the technical part of the project were detail. Next project meeting will be in Eindhoven University on June 4th 2013.

During the MAPSYN meeting, all partners presented their work corresponding to their respective WP activities. In addition, the project consortium was given a very interesting tour of the laboratory and workshop facilities at C-Tech Innovation.

Dissemination:

Various dissemination activities to publicise the MAPSYN project have already been published & are listed below.

Peer reviewed article:- Industrial Applications of Plasma, Microwave and Ultrasound Techniques: Nitrogen-Fixation and Hydrogenation Reactions. 11-FEB-2013 DOI information: 10.1016/j.cep.2013.02.002.

In review:- Energy, Catalyst and Reactor Considerations for (Near)-Industrial Plasma Processing and Learning for Nitrogen-Fixation Reactions

<http://mapsyn.eu>.

