



AVVISO DI SEMINARIO

Il giorno venerdì 15 novembre 2013 alle ore 10,30

presso l'Area della Ricerca di Pisa

Aula 44, primo piano, Edificio "A"

Il Dr. José Gonzalez

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terrà un seminario sul tema:

Heterogeneous catalytic reaction of microcrystalline cellulose in hydrothermal microwave-assisted decomposition

Zeolite Beta, modified with some salts of alkali and alkaline earth metals (K, Zn, Sn), were tested in the hydrothermal heterogeneous catalytic decomposition of microcrystalline cellulose. The reactions were microwave-assisted, where the microwaves were issued by an in-situ coaxial applicator. Zeolites were submitted to an ion-exchange process. The interaction between zeolites and microwaves was studied. The catalytic activity of the different systems on the cellulose decomposition was studied. The most active catalyst was the acid zeolite Beta and the identified product distribution under the investigated conditions was (mol yield %): Levulinic acid (22.3), Glucose (12.1), Lactic acid (4.1), Formic acid (6.6), 5-(Hydroxymethyl) furfural (14.6), Acetic acid (15.2) and Furfuraldehyde (3.1). The effect of temperature, time and the heterogeneous catalyst recycling (H-Beta) on the yields of different products was investigated. The use of MW radiation with coaxial applicator instead of conventional heating gave clear advantages in the decrease of the reaction time (45 min) and in terms of yield enhancement (78.6% in the best conditions).

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