I prefer: POSTER presentation-Adv. Materials Science 2021|

Biofuel production using ordered mesoporous carbons with modified carbonaceous structure

B. Ledesma[1] and A. Beltramone[2]

1Centro de Investigación en Nanociencia y Nanotecnología (NANOTEC), Facultad Regional Córdoba, Universidad Tecnológica Nacional, Córdoba, Argentina.
E-mail: bledesma@frc.utn.edu.ar

Abstract

Monometallic and bimetallic supported catalysts were developed to produce 2,5-dimethylfuran (DMF) trough hydrogenolysis of 5-(hydroxymethyl)furfural (HMF). Detailed physicochemical characterization was done in order to understand structure-activity correlation. Through a series of experiments and comparatives tests, the synergistic effect among Pt, Ir, and Ti incorporated in the support was investigated. Results revealed that using the titanium contained ordered mesoporous carbon, synthesized by a novel technique, high selectivity to DMF was achieved. In the case of the best catalyst PtIr-TiC, the good activity and excellent selectivity to the desired product DMF (98% yield) was related to the high hydrogenating capacity of the bimetallic sites, the acid support characteristics and the high metal nanoparticles dispersion achieved on the mesoporous titanium modified carbon support.

Keywords

Titanium; platinum; iridium; modified mesoporous carbon; 5-hydroximethylfurfural; 2,5-dimethylfuran provide

Recent Publications:

Ledesma Brenda C., Juarez Juliana M., Mazarío Jaime, Domine Marcelo, Beltramone Andrea R., Bimetallic platinum/iridium modified mesoporous catalysts applied in the hydrogenation of HMF. CATALYSIS TODAY. Amsterdam: 2019. http://dx.doi.org/10.1016/j.cattod.2019.06.037.

Robinson Dinamarca, Verónica Valles, Brenda C. Ledesma, Cristian H. Campos, Gina Pecchi, Andrea Beltramone. Magnetic Fe3O4@SiO2Pt and Fe3O4@SiO2Pt@SiO2 Structures for HDN of Indole. Materials. Basel: MDPI St. Alban-Anlage 66 CH-4052 Basel Switzerland. 2019. http://dx.doi.org/10.3390/ma12233878.

Iridium-supported SBA-15 modified with Ga and Al as a highly active catalyst in the hydrodenitrogenation of quinoline. CATALYSIS TODAY. Ledesma, Brenda C. Martínez, María L. Beltramone, Andrea R. http://dx.doi.org/10.1016/j.cattod.2018.04.061.

Novel and simple one-pot method for the synthesis of TiO2 modified-CMK-3 applied in oxidative desulfurization of refractory organosulfur compounds. FUEL. Rivoira, Lorena P. Ledesma, Brenda C. Juárez, Juliana M. Beltramone, Andrea R. http://dx.doi.org/10.1016/j.fuel.2018.04.054.

Short time synthesis of titania modified-CMK-3 carbon mesostructure as support for Ir-catalyst applied in catalytic hydrotreating. Brenda C Ledesma; Juliana M Juarez; Andrea R

Beltramone. Catalysis Today. ISSN: 0920-5861. 2018.http://dx.doi.org/10.1016/j.cattod.2018.04.012

Biography

As a researcher, I have worked for the last 8 years, developing catalytic systems to obtain clean fuels and biofuels from biomass. I have successfully produced 14 reports that were published in international magazines. I participated in the coordination and management of national projects. Previously, I worked 5 years as a process engineer in large oil companies such as Exxon-Mobil and Halliburton.

Presenting Author Details and Photo

Full Name: Brenda Cecilia Soledad Ledesma
Email ID: bledesma@frc.utn.edu.ar
Phone No: 54-351-7685357
Recent Photograph: