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Revalorization of agro-industrial waste as a catalyst source for obtaining biofuels.

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This work deals with the bio-waste valorization approach for the catalyst development, the use of products derived biomass as raw material and the obtaining of biofuels. In this research activated carbons were synthesized the orange peel using different synthesis conditions. With the activated carbons obtained with the best structure and texture, PtIr bimetallic catalysts were prepared. Carbon activation was carried out through a chemical process with phosphoric acid as an activating agent, varying the acid concentration, the ratio substrate/activating agent and time of contact between them. The best support was obtained using carbonization time of 1 h, temperature of carbonization of 470°C, phosphoric acid concentration of 50 wt.% and with BET area of 1429 m²/g. Subsequently, the metallic nanoparticles were deposited in the activated carbon to use the solid as a catalytic material for the hydrogenation of HMF to 2,5-DMF. The catalyst presented excellent performance for biofuels generation.

Keywords: biomass, waste management, biofuel

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