

## Preparation of a Solid Catalyst by Sulfonation Superacids from Mesoporous Carbon Material

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### ABSTRACT

A new solid super acid catalyst was functionalized using H<sub>2</sub>SO<sub>4</sub> as catalyst supports a mesoporous carbon from tire rubber. The method of sulfonation in liquid phase was through direct immersion incipient coal 98.3 % concentrated H<sub>2</sub>SO<sub>4</sub> in a flask under reflux. The carbonization temperature of tire rubber pyrolysis was performed with a flow of N<sub>2</sub> at low temperature to obtain a mesoporous carbon and achieve effective sulfonation. The mesoporous carbon was functionalized with the group -SO<sub>3</sub>H, CMHL520 -SO<sub>3</sub>H, was characterized by XRD, SEM, EDS, IR and elemental analysis, indicating the presence of polycyclic disordered carbon plates in structure extremely high surface area and large pores that provided more acidic surface sites. The high catalytic activity and stability of this catalyst is related to the acid site density by -OH, Bronsted acid sites, hydrophobicity preventing hydration of hydrophilic -OH and -SO<sub>3</sub>H functional groups.

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**Keywords:** Solid super acid catalyst, mesoporous carbon, pyrolysis.



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