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Influence of Pulverization Followed by Acid Treatment on the Properties of Nickel-Loaded Wood Charcoal

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Abstract: Nickel-loaded wood charcoal obtained by catalytic carbonization at 900°C was subjected to pulverization followed by acid-soaking to examine the crystallinity of the carbon and the pore structure, in addition to the content of the metal. Obtained results showed enhancement of the quality or performance of the resulting char as electro-conductive carbon and liquid phase adsorbent for macromolecules, with about 99% removal of the metal. This aspect explains that incorporation of such post-treatments into the manufacturing process of carbon products is greatly advantageous. Furthermore, useful information on the fine structure of this charcoal, particularly the mesopore structure, could be drawn from the relevant analyses.

Keywords: nickel-loaded wood charcoal, electro-conductivity, liquid phase adsorption, mesoporous structure, TEM observation

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