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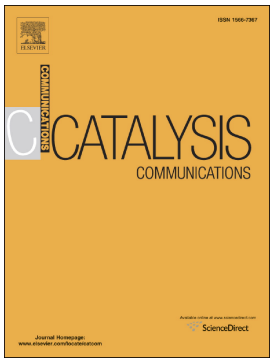

Preparation and application of a novel raney nickel catalyst for fix-bed reactions

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Preparation and Application of a Novel Raney Nickel Catalyst for Fix-bed Reactions

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A unique cage-like structured carbon-composed Raney Nickel catalyst reinforced with in-situ grown carbon nanotubes is reported in this paper. Phenol formaldehyde resin was selected as carbon precursor to prepare this catalyst. Ni-Al alloy powder (48 wt. % Ni) and powdery phenol formaldehyde resin were mixed firstly, and then the mixture was compressed, cured and carbonized, followed by alkaline leaching. The prepared carbon-composed catalyst possesses high stiffness, good hydrogen adsorption capacity, and perfect catalytic property. Hydrogenation of n-butyraldehyde to n-butanol was selected as a probe reaction. Compared with commercial catalyst, this cage-like carbon-composed Raney Nickel catalyst exhibits much higher selectivity and similar catalytic activity. It is believed that the use of carbon composing method will make a series of Raney metal catalysts, including but not limited to Raney nickel, Raney cobalt, and Raney copper, very important fix-bed catalysts for chemical industry.

Carbon, Raney Ni, fix-bed

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