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Characterization of carbon fibers from Thai horse manure via hydrothermal carbonization

Carbon fibers from biomass have been successfully prepared via hydrothermal-carbonization and activated in air atmosphere for catalyst supporter. In this research, we study the effect of temperature (160 -200 °C) and residence time (4-24 h) to pretreat the initial carbon precursor in terms of chemical properties (i.e. carbon content, surface functional group) including the physical properties such as porosity and total surface areas. Afterwards, carbonization was obtained at the temperature of 300 °C for 2h for developing the porosity and even removing the contaminants of hydrothermal char to reach the carbon fiber. Nevertheless, carbon fiber was characterized. Scanning electron microscopy (SEM) and Functional Transform Infrared spectroscopy (FTIR) were employed to characterize physical morphology and functional group on the surface, respectively.

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