VALORISATION OF TEAK SAWDUST BY THE PRODUCTION OF ACTIVATED CARBON

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The valorisation of wood wastes by the production of added value materials is one of the possible strategies to expand the income sources and increase the economic activity. This approach is very important in particular for the developing countries like East Timor.

There are a quite number of studies regarding the preparation of activated carbons (ACs) from a diversity of precursors [1, 2]. However, there is scarce information concerning the production of ACs using teak sawdust as precursor.

In this work, the wood wastes of Tectona grandis tree (from East Timor) were used as a precursor to the ACs production by chemical activation, with potassium hydroxide, at 973 K and by physical activation, with carbon dioxide at different temperatures.

The influence of carbonization temperature and activation time were studied, which have a significant effect on the activated carbons porous structure.

A set of experimental technics like nitrogen adsorption at 77 K, Fourier transform-infrared spectroscopy, elemental analysis and determination of the point of zero charge were used to characterise all ACs.

The good results obtained allow us to state that teak sawdust is an excellent precursor for ACs production.

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