

## A Study on Extraction of Lignin from Black Liquor by Adding Citric Acid

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Plant biomass is an important resource for energy, food and useful chemicals due to its abundance in nature and its renewable character.

Especially, Lignin is an amorphous aromatic biopolymer that provides rigidity to plant fibers. Cellulose fibers mainly consist of cellulose microfibrils bound together by amorphous lignin matrix. Lignin is one of the principal constituents of wood (around 25%) and is the second most abundant natural polymer after cellulose. Also, black liquor are available in large amounts as kraft lignin from chemical pulping processes.

In this study, lignin was extracted from black liquor by Citric acid. Lignin extracted from this experiment were analyzed by GPC, TGA, NMR etc.