

How we can utilize lignin

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Abstract:

Now, many scientists attention the lignin in japan because 66% of Japan's land is forests. Lignin is a main component in trees. In other words Japan have many lignin that have great potential but it's high molecular so hard to we utilize the lignin. We pay attention lignin too because until now, we did various SDGs activity's especially "how is the efficiency of woody biomass fuel" and "enlightenment of SDGs". Also we did experiment about "which tree is rich on lignin". We did quantitative experiment of lignin. As a consideration wood that contains a lot of lignin, it is easy to burn and it's can burn long time. We can understand why many scientists attention the lignin in Japan and we want to research about lignin more. Through the these activities we felt about limits of what students can do but if we can experiment with co-operator on biomass power generation from Black liquor, we can clear about new lignin's utilization method. We think if we can do this topic will become clearly, utilization of black liquor become easier also in particular that can contribute to the three goals of the SDGs. The three goals are 7. Affordable and clean energy, 12. Responsible consumption and production and 17, partnership for the goals.

Graphical Abstract:

talking session of Shimokawa-cho in environmental open space Sapporo and visit to Shimokawa-cho. → it was difficult to do a thing same in Sapporo that was that it was possible because Shimokawa-cho was a small town.

I keenly realize it when a fact and the It is RE100 to have paid its attention in a study of the renewable energy. I join the initiative that 164 companies advocate RE100 at the whole world as of February 16, 2019 and wrestle towards achievement of RE100.

We inspected it about a property of the lignin and tested it. As a result of having been based on such a test, I can say that lignin has Auxiliary combustion. And it is studied the black liquor to handle this time by Tsukuba University Professor Ikeda. We should pay your attention to a black liquor is that it is to a biomass fuel. We are able to serve it by 66% when I use lignin for biomass here, and the energy budget becomes the black that has about half energy of the coal per 1 kilogram

I stew sulfite sodium, sodium hydroxide by a digestion kiln of wood in the manufacturing process of the paper, and there is work breaking down fiber of the lignin into. The liquid which is given when I squeezed it is a black liquor. Therefore I thought whether we did not come to be able to utilize the black liquor of the state that sulfite sodium, sodium hydroxide were in as a biomass fuel. This is because time and money took when they let you miss with a onventional evaporator and worked

Partnership offer
The partner that we will cooperate
• The building which affects management and a power supply system
• The person who can ask for experiment cooperation about the biomass generation from the above-mentioned black liquor

"The energy use of the black liquor in the paper manufacture industry" (June 27, 2019 reading)
(https://www.istage.jst.go.jp/article/nig/49/5/49_324/_pdf/-char/ja)

"Quality of wood scientific experiment manual Japan Wood Research Society" by April 10, 2000

燃料	エネルギー消費率 (MJ/kg)	CO2排出率 (kg/kg)
トリス	25	45
スラフ	18.75	35
シラフ	12.5	25
パルプ	12.5	25
ニフヤラダ	12.5	25