

9<sup>th</sup> World Congress on

# Green Chemistry and Technology

September 17-19, 2018 | Amsterdam, Netherlands

## Extraction and characterization of lignin from herbaceous biomass of Korea via organosolv and alkaline process

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The aim of the present study was to investigate the effect of extraction conditions on the molecular structure of alkaline and organosolv lignins extracted from Korea native herbaceous (Miscanthus and Kenaf). The lignin fractions obtained were then characterized by EA, ICP-AES, TGA, GPC, FT-IR, NMR, Py-GC/MS, and sugar analysis. The structural characterization of lignin will be improving the understanding of complex lignocellulosic biomass pretreatment which is vital for the production of biofuels and phenolic compounds. Comparing the two pretreatment methods, it was found that Mn, Mw and polydispersity of the lignin extracted with ethanol solutions was lower than lignin extracted with alkaline solutions. Elemental composition of Lignins increased in carbon content, and the oxygen content, as expected, decreased. FTIR analysis of pretreated solid residues revealed reduction in p-hydroxyphenyl (H), guaiacyl (G) and syringyl (S) lignin, FTIR and p-NMR of these lignins showed S, H and G units. The lignin's physical and chemical behavior was seen different with respect to the extraction method used.

### Biography

Ga Hee Kim has completed Master's degree in Biomolecular and Chemical Engineering from the Catalyst & Material Laboratory of Hankyong National University in South Korean in 2015. In 2016, Kim was chosen as a Ph.D course in Biomolecular and Chemical Engineering from Hankyong National University. Kim studies continusly on energy conversion from lignocellulosic biomass.

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