

Biomedical Engineering Seminar Series

1st Semester, Academic Year 2017



Date: September 26, 2017

Time: 11.00 AM - 12.00 PM

Room 6373, 3rd level, Building 3,
Department of Biomedical Engineering,
Faculty of Engineering, Mahidol University



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"Study on the degradation of lignin under oxygen and hydrogen peroxide oxidation treatments and its recent advances in Biomedical applications"

The β -O-4 type is the most abundant substructure in lignin. Thus, reaction of the β -O-4 bond mainly controls delignification behavior in various chemical reactions. The diastereomeric erythro (E) and threo (T) isomers exist in the side chain of β -O-4 substructure. It is widely known that reactivity of the E isomer is different from that of the T isomer in various chemical reactions. It was reported that β -O-4 substructure shows stereo-preferential degradation of the E isomer under alkaline pulping conditions and that the T isomer is stereo-preferentially oxidized by some oxidation systems while the reverse tendency or no stereo-preference is observed in other oxidation systems. Thus, it seems to be dependent on type of oxidizing reagent which of the E or T isomer is stereo-preferentially degraded in oxidation processes. In this study, stereo-preferential degradation of the E or T isomer of dimeric non-phenolic β -O-4 type lignin model compounds was investigated under oxygen and hydrogen peroxide bleaching conditions.

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