A review of Lignin Oxidative Depolymerization

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In biomass utilization, lignin is an abundant source which can be depolymerized into valuable aromatic compounds. However, its high resistance towards degradation processes is the prime challenge for lignin valorization. Basically, depolymerization of lignin can be classified into hydrolysis, catalytic reduction, and catalytic oxidation reactions. While hydrolysis and reduction reactions tend to produce simpler phenols, oxidation reactions tend to produce more complex aromatic compounds. Aside from using oxidizing agent, approach of oxidative depolymerization also includes the use of molecular oxygen (O2) which is cheap and abundantly exists. In this poster, important factors that influence the oxidative depolymerization using O2 will be summarized.