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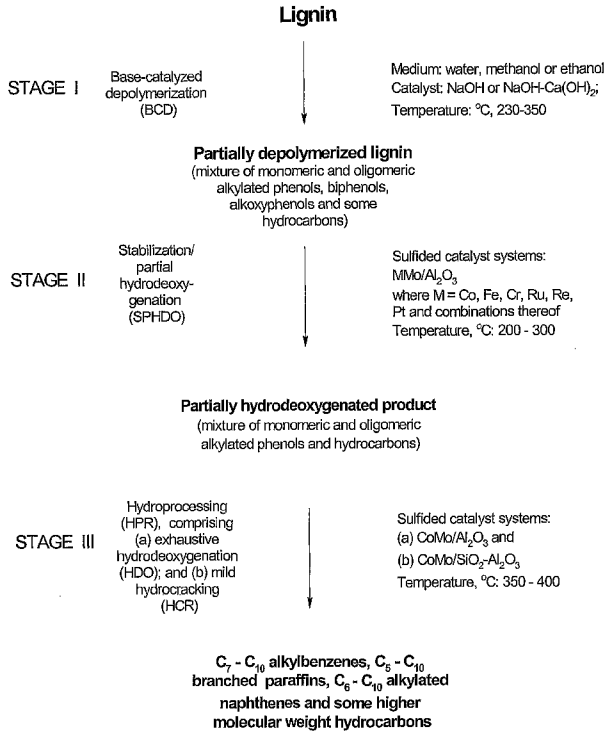
(54) Title: PROCESSES FOR CATALYTIC CONVERSION OF LIGNIN TO LIQUID BIO-FUELS



(57) Abstract: Processes for conversion of lignin to liquid products such as bio-fiiels and fuel additives are disclosed and described (Figure 1). A process for conversion of a lignin material to bio- fuels can include subjecting the lignin material to a base catalyzed depolymerization reaction (Stage I) to produce a partially depolymerized lignin. The partially depolymerized lignin can then be subjected to a stabilization/partial hydrodeoxygenation reaction (Stage II) to form a partially hydrodeoxygenated product. Following partial hydrodeoxygenation, the partially hydrodeoxygenated product can be reacted in a refining step (Stage TS) to form a bio-fuel. Each of these reaction steps can be performed in single or multiple steps, depending on the design of the process. The production of an intermediate partially hydrodeoxygenation product and subsequent reaction thereof can significantly reduce or eliminate reactor plugging and catalyst coking. A variety of useful bio-fuels such as fuels, fuel additives, and the like can be readily produced from renewable lignin materials in an improved conversion process.

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