

THE PARTNERSHIP FOR INTERNATIONAL RESEARCH
AND EDUCATION AT THE UNIVERSITY OF CALIFORNIA
ELECTRON CHEMISTRY AND CATALYSIS AT INTERFACES



SEMINAR ANNOUNCEMENT

Catalytic ethanolysis of Kraft lignin with a Mo-based catalyst in supercritical ethanol

science crossing borders...

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Date: **Friday, May 9, 2014**

Place: **Eng-II 1519**

Time: **4:00PM**

ABSTRACT

We report the complete ethanolysis of Kraft lignin over an α -MoC_{1-x}/AC catalyst in pure ethanol at 280 oC to give high-valued chemicals of lower molecular weight. A maximum overall yield of 1.64 g/g lignin of the 25 most abundant liquid products (LP25) has achieved. The LP25 consists of C6 to C10 esters, alcohols, arenes, phenols and benzyl alcohols with an overall heating values of 36.5 MJ/kg. No oligomers and char are formed during this process. With our catalyst, ethanol is the only effective solvent for the reaction. Supercritical ethanol on its own degrades Kraft lignin into a mixture of small molecules and molecular fragments of intermediate size with molecular weight in the range 700 – 1400, differing in steps of 58 units, which is the weight of the branched chain linkage C₃H₆O in lignin. Hydrogen is found have a negative effect on the formation of the low molecular weight products. A predominance of the C6 alcohols and C8 esters, accounting for 82 wt% of the LP25, is observed.

Refreshments will be served before the seminar

An international Partnership sponsored by the National Science Foundation
Office of International Science and Education between

- The University of California
- The Dalian Institute of Chemical Physics
- The University of Science and Technology of China
- The Institute of Chemistry Chinese Academy of Science

