



Cal Poly Pomona 3rd Annual Creative Activities & Research Symposium
August 16, 2017
University Library

Oral and Poster Presentations from 9 to 11:15 am
Symposium Reception and Keynote from 11:15 am to 1 pm
Demo Day: Summer Bootcamp Pitches from 1:15 to 3 pm
Poetry Session from 1:15 to 3 pm

Author: Paula Marie Magat

Major: Chemical Engineering

Project Author(s): Paula Marie Magat

Faculty Mentor(s): Alex John

Presentation Type: Poster and Creative Works Showcase (i.e. Poster, Design Project, and/or Prototypes)

Project Title: Molybdenum-Catalyzed Oxidative Cleavage of Lignin

Abstract: Depleting fossil fuels has been an undergoing issue that calls for the attention of many scientists around the world, as the demand for it increases with the increasing population. Thus, various types of renewable energy sources are being studied and evaluated to determine which can accommodate the world's growing demand. For this particular study, biomass-derived substitute for aromatic compounds is being investigated, particularly biomass derived from lignin. Lignin, a complex organic polymer is one of the major components that makes up the structure of plants and wood. If broken down into simpler molecules, lignin could potentially provide a substitute for aromatic compounds, a major constituent of petroleum, which are used in variety of materials. In order to break down lignin into simpler compounds, a catalyst is essential. However, different catalysts break down lignin into different compounds, and another issue associated with biomass-derived materials is the presence of oxygen in the biomass-derived compounds. Whereas, fossil-derived compounds are mainly composed of hydrocarbons. Hence, the goal of the study is to determine whether a molybdenum catalyst can break down lignin into useful aromatics. Our findings along these lines will be discussed.