

Fuels are used around us and by us every day: in heating and lighting our homes and work, making us goods, and transporting us to where we need to go. Many efforts have been made to find more sustainable alternatives to one of the most common types of fuel, gasoline. This poster presents the work done to identify, synthesize, and test various catalysts for the conversion of the common fuel additive ethanol into the more energy dense *n*-butanol. To connect this conversion to ethanol feedstocks the catalysts tested must be able to perform under 100° C and in aqueous solution. All catalyst performance was compared to the previously promising Jones catalyst. Eleven distinct ruthenium and iridium catalysts were synthesized to be tested. Most of the catalysts were unsuccessful under the chosen conditions, however a few of the catalysts were competitive with the Jones catalyst and are promising candidates for ethanol to *n*-butanol conversion given further optimization.