

Catalysts are used in 80% of chemical processes, and in 90% of those processes a heterogeneous catalyst is used to make it easier to separate the catalyst from reactants and products. This talk will be in two parts, the first will be an introduction to the study of heterogeneous catalysis and the second will discuss a specific application for the chemical industry. The first part will give a quick overview of what a catalyst is, important properties of heterogeneous catalysts, reaction mechanisms, and characterization tools to understand how heterogeneous catalysts improve the reaction rates for chemical reactions. The second part will delve into the production of dimethyl ether, which is an important chemical intermediate and a potential molecule to use as an alternative fuel or hydrogen carrier.