Due to excessive use and insufficient recycling, plastic waste has become a global problem. Why can’t we just recycle it all? Unfortunately, traditional (i.e. mechanical recycling) produces plastics that are inferior in quality. We cant turn yoghurt cups into yoghurt cups. An alternative approach is to turn the plastic back into building blocks: Chemical recycling.[1] The simplest way to do this is to heat the plastic in the absence of oxygen in a process called pyrolysis. By adding a catalyst, we can reduce the required temperature significantly, and improve the selectivity to more valuable products. The process can then be called catalytic cracking or catalytic pyrolysis. In my work, I’m trying to understand the fundamentals of this process. For example, we showed that the key limiting factor in processing realistic plastics is the high viscosity of the melt.[2] In present work, we aim at understanding what makes a good plastic cracking catalyst using a combination of in-depth kinetics studies and catalyst characterization.