A NOVEL FACILITY FOR THE STUDY OF CATALYTIC ACTIVITY

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The study and development of novel catalytic materials is a crucial corner-stone of technology. We have recently constructed a novel facility for the screening of catalytic properties of materials under high pressure and high temperature. The main focus is the study of solid-state, heterogeneous catalysts, but the effects of homogeneous catalysts may be explored as well. The parameter space available ranges from ambient conditions to 500°C and 500 bar, thus enabling studies in the liquid, gaseous, near-critical or supercritical state.

The construction is based on chemically inert materials, making the reactor tolerant to a wide range of solvents and reactants. Standard product analysis may be performed with HPLC, GC, TOC and online gas-analysis, as required by experiment. The initial studies, which have recently begun, concern the catalytic conversion of wet biomass systems (including model compounds) to bio-oil.