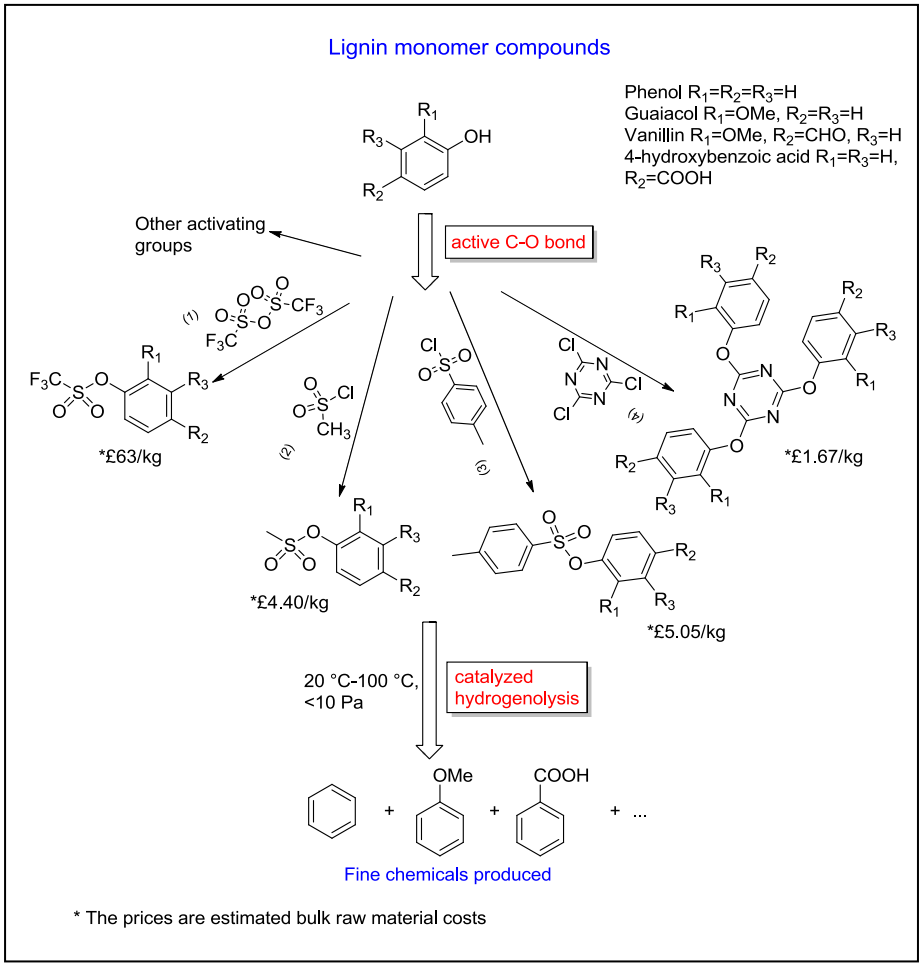
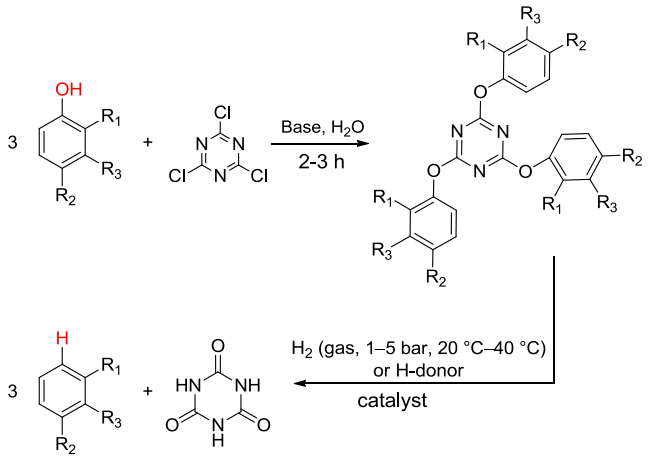
For the increased demand of oil-derived chemicals, plant biomass is an ideal alternative source. Lignin constitutes ca 35% of dry woody biomass and is produced as a non-commercial waste by-product from the Kraft Pulping industry. The polyphenolic chemical structures of lignin are built from guaiacolpropane linking with C-C bonds and ether C-O bonds, which resist the degradation of woody biomass. Guaiacol represents around 40% of the phenolic monomers within digested lignin. We have investigated commercially viable processes for the hydrogenolysis of poly–oxygenated aromatic compounds formed from digested lignin, to provide a selective and high yielding formation of the fine chemicals, e.g. benzene, anisole and benzoic acid etc.



Cyanuric chloride is a potentially cheaper and/or recyclable reagent for the activation/hydrogenolysis of lignin monomer compounds.



We are also investigating the flow hydrogenolysis process under cascade CSTR.