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Zhao, Y, Blacker, J and Marsden, S (2014) Sustainable aromatics: Synthesis and hydrogenolysis of trisubstituted-1,3,5-triazines with lignin monomer compounds. In: 247th National Spring Meeting of the American-Chemical-Society (ACS), 16-20 Mar 2014, Dallas, TX.

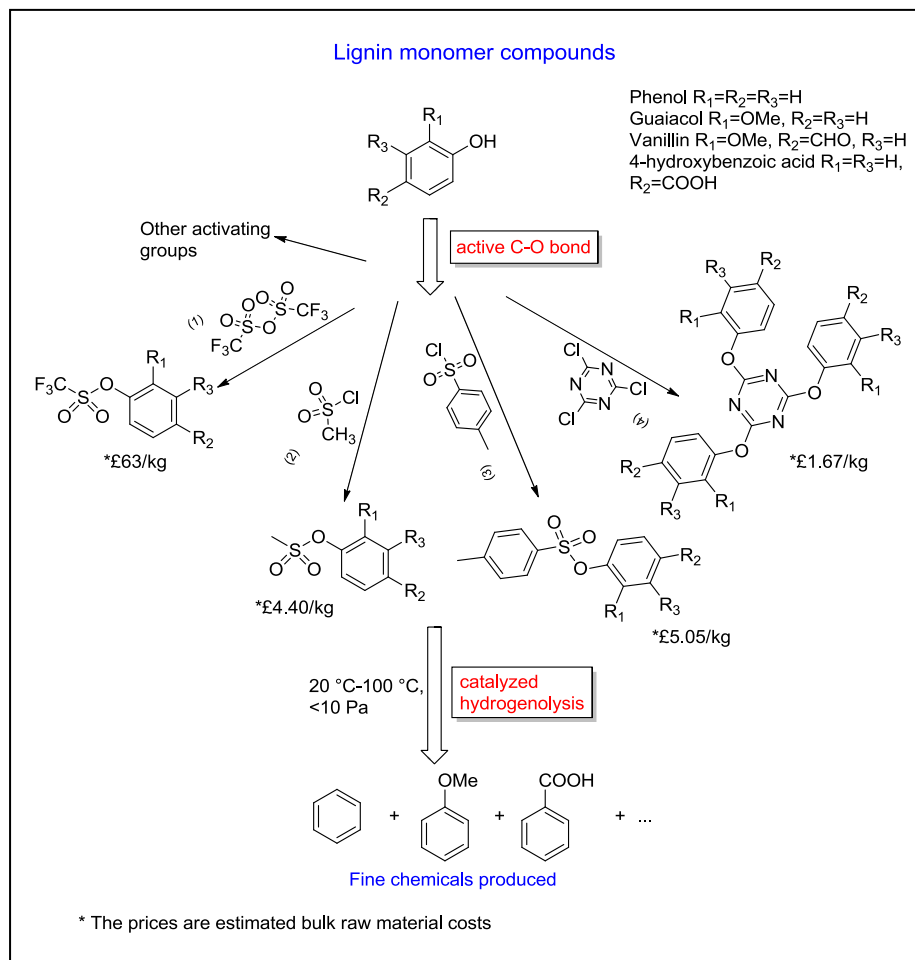
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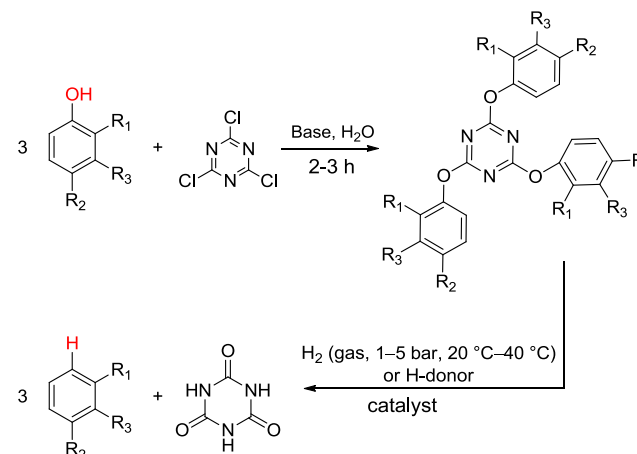
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For the increased demand of oil-derived chemicals, plant biomass is an ideal alternative source. Lignin constitutes *ca* 35% of dry woody biomass and is produced as a non-commercial waste by-product from the Kraft Pulp industry. The polyphenolic chemical 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.

