

Contract No: JOR3-CT95-0081

Title: Catalytic Pyrolysis of Biomass for Improved Liquid Fuel Quality

Duration: 01/01/1996 – 30/06/1998

Abstract

The main objective of this project was to explore a variety of ways of catalytically and chemically upgrading or modifying biomass pyrolysis liquids (bio-oils) to improve its properties and characteristics and thus make it more amenable to utilization. Subsidiary objectives included minimising the cost of improvement, modelling the pyrolysis process, recovering valuable components and testing the more promising results on a large scale.

In the framework of the whole effort to get a better knowledge of the characteristics of the pyrolysis oils and as a consequence of the potential of using these liquids for new applications, CHIMAR examined the possibility of use of such oils or at least their phenolic fraction as raw materials in the manufacture of wood-based panels. It was thus found that the pyrolysis oil can be used as such to replace up to 20% of the urea-formaldehyde and/or phenol-formaldehyde binder in composite board production with no significant impairment of the board strength properties, and that PF resins produced with up to 20% substitution of the phenol needed by pyrolysis oil have acceptable performance.