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BIOMASS FAST PYROLYSIS

ABSTRACT

Bioenergy is now accepted as having the potential to provide the major part of the projected renewable energy provisions of the future. Fast pyrolysis is one of the three main thermal routes, with gasification and combustion, to providing a useful and valuable biofuel. It is one of the most recent renewable energy processes to have been introduced and offers the advantages of a liquid product - bio-oil - that can be readily stored and transported, and used as a fuel, an energy carrier and a source of chemicals. Fast pyrolysis has now achieved commercial success for production of some chemicals, liquid fuel and electricity. Bio-oils have been successfully tested in engines, turbines and boilers, and have been upgraded to high quality hydrocarbon fuels although at a presently unacceptable energetic and financial cost. This review concentrates on the technology of pyrolysis and applications for the liquid product. The basic pyrolysis process and the characteristics of the main liquid product - bio-oil - are first summarised followed by a review of applications for bio-oil. The main technical and non-technical barriers to implementation are identified.

KEYWORDS

[biomass](#), [pyrolysis](#), [bio-oil](#)

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