PREPARATION METHOD FOR HYDROPYROLYSIS CATALYST WITH HIGHER DENSITY; BIOMASS HYDROPYROLYSIS PROCESS USING OBTAINED CATALYST

Field of the Invention

This invention relates to a method for the preparation of a hydropyrolysis catalyst.

Background of the invention

With increasing demand for liquid transportation fuels, decreasing reserves of 'easy oil' (crude petroleum oil that can be accessed and recovered easily) and increasing constraints on the carbon footprints of such fuels, it is becoming increasingly important to develop routes to produce liquid transportation fuels from alternative sources in an efficient manner.

Biomass offers a source of renewable carbon and refers to biological material derived from living or recently deceased organisms and includes lignocellulosic materials (e.g., wood), aquatic materials (e.g., algae, aquatic plants, and seaweed) and animal by-products and wastes (e.g., offal, fats, and sewage sludge). Liquid transportation fuels produced from biomass are sometimes referred to as biofuels. Therefore, when using such biofuels, it may be possible to achieve more sustainable CO_2 emissions over petroleum-derived fuels.

However, in the conventional pyrolysis of biomass, typically fast pyrolysis carried out in an inert atmosphere, a dense, acidic, reactive liquid bio-oil product is obtained, which contains water, oils and char formed during the process. The use of bio-oils produced via conventional pyrolysis is, therefore, subject to several drawbacks. These include increased chemical reactivity, water maiscibility, high oxygen content and low heating value of the product. Often these products are difficult to upgrade to fungible liquid hydrocarbon fuels.