



Extended Abstract

Bio-Fluxing Agent for Bitumen Road Based on Pyrolysis Bio-Oil [†]

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Bio-oil is the liquid fraction obtained from the pyrolysis process and is an important source of both energy and valuable commodity chemicals. The liquid is composed of a water phase (containing diverse oxygenated hydrocarbons) and an organic tar phase containing a complex mixture of several hundreds of organic compounds such as acids, alcohols, aldehydes, esters, ketones, and phenols [1].

The pyrolysis-derived bio-oils from different biomass have different compositions but the basic properties for bio-oil usage as fuel substitute are heating value, viscosity, density, and stability. The oxygen content of biomass bio-oils is higher than that of fossil oil and, consequently, they have higher reactivity and lower stability than fossil fuels and cannot be used in their present form as transportation fuels [2]. Thus, there is an urgent need to develop new approaches to utilize these oils as sources of fuel additives or extenders. In this context, creating blends of bio-oil with other transportation fuels could be a viable short-term alternative to utilize an important fraction of these oils [3].

The objectives of this research were (a) conditioning of blends from bio-oil and lipid fraction, and (b) evaluation of bio-oil/lipids blends in order to obtain components for fuels and/or ecological additives for road bitumen. The bio-oil used in this study was obtained from the slow pyrolysis of biogas solid digestate. The physical and chemical properties of the pyrolysis oil/lipids/diesel blends were evaluated in accordance with the corresponding specification. **Acknowledgments:** In this section you can acknowledge any support given which is not covered by the author contribution or funding sections. This may include administrative and technical support, or donations in kind (e.g., materials used for experiments).

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