PROCESS FOR PRODUCING FUEL FROM PETROLEUM DERIVED AND RENEWABLE SOURCES

FIELD OF THE INVENTION

[0001] The present invention relates to the field of producing fuel from renewable sources and, in particular, to a process for producing kerosene and/or diesel from renewable sources.

BACKGROUND OF THE INVENTION

[0002] The increased demand for energy resulting from worldwide economic growth and development has contributed to an increase in concentration of greenhouse gases in the atmosphere. This has been regarded as one of the most important challenges facing mankind in the 21st century. To mitigate the effects of greenhouse gases, efforts have been made to reduce the global carbon footprint. The capacity of the earth's system to absorb greenhouse gas emissions is already exhausted. Accordingly, there is a target to reach net-zero emissions by 2050. To realize these reductions, the world is transitioning away from solely conventional carbon-based fossil fuel energy carriers. A timely implementation of the energy transition requires multiple approaches in parallel, including, for example, energy conservation, improvements in energy efficiency, electrification, and efforts to use renewable resources for the production of fuels and fuel components and/or chemical feedstocks.

[0003] Vegetable oils, oils obtained from algae, and animal fats are seen as renewable resources. Also, deconstructed materials, such as pyrolyzed recyclable materials or wood, are seen as potential resources.

[0004] Renewable materials may comprise materials such as triglycerides with very high molecular mass and high viscosity, which means that using them directly or as a mixture in fuel bases is problematic for modern engines. On the other hand, the hydrocarbon chains that constitute, for example, triglycerides are essentially linear and their length (in terms of number of carbon atoms) is compatible with the hydrocarbons used in/as fuels. Thus, it is attractive to transform triglyceride-comprising feeds in order to obtain good quality fuel components.

[0005] Petroleum-derived jet fuels inherently contain both paraffinic and aromatic hydrocarbons. In general, paraffinic hydrocarbons offer the most desirable combustion cleanliness characteristics for jet fuels. Challenges in using paraffinic hydrocarbons from renewable sources include higher boiling point, due to chain length, and higher freeze point.