Petrochemistry-2013

OMICS Group Conferences
Accelerating Scientific Discovery

World Congress on
Petrochemistry and Chemical Engineering

November 18-20, 2013 Hilton San Antonio Airport, USA

The recuperation of petroleum equivalent products from biomass and their mixtures with plastics via catalytic thermochemical conversion process

Bahattin Aydinli and Atila Caglar
Kastamonu University Education Faculty, Turkey

Abstract

The increasing energy demands and the impact of fossil fuel usage on environment, make searching alternative routes for both energy technologies and living style. These studies are mainly on reduction of emission of hazardous gasses, elimination of solid wastes and searching alternative sources of energy and chemicals. The pyrolysis is the outstanding process in which the raw solid materials such as biomass, plastic and its wastes, and municipal solid wastes which are organic based are converted into precious solid, liquid and gas materials. The variables in pyrolysis process are temperature programming, pyrolysis atmosphere, residence time, reactor design and additives mainly catalysts. Pyrolysis of mono-constituent materials either biomass or polymeric materials in the presence of various catalysts was studied extensively. However, the pyrolysis of mixtures and effect of the catalysts on them have been rarely investigated probably due to need of high labor. The co-pyrolysis of biomass and plastics is really compulsory study. The diversity of biomass and plastic material, and their permutational probability of co-existence make the situation more troublesome and exciting. The plastics and their possible mixtures or produced materials with biomass with the consideration of catalysts or in general additives (pigments, dyes, stabilizers, filling materials etc.) should also be concentrated on their physical and structural nature along with their chemical properties for possible recycling technologies for acquisition of valuable substances. And these studies are inevitably based on trial and error method, due to improbability of simulation of such a high temperature pyrolysis medium theoretically.

Biography

Bahattin AYDINLI took PhD degree in the chemistry department at Middle East Technical University (METU) in 1999, Turkey. The topic was namely "Preparation and Characterization of Hydrophobic and Hydrophilic Polymeric Foams from UHMWPE and some Water-soluble Monomers" After PhD, He joined Kastamonu Education Faculty as an assistant professor and he is still working there under the new title Kastamonu University.

Currently, He is working on energy, environment, and recycling, and also their educational dimensions especially, recycling of mixtures like plastics, biomass and inorganic matters for recuperation of energy and precious chemicals via pyrolysis process. He has published more than 10 papers in reputed journals.

Atila CAGLAR took PhD degree in the department of Science Education at Black Sea Technical University in 2000, Turkey. The subject was acquisition of Hydrogen Rich Gas from pyrolysis of Several Biomass. After PhD, He joined Kastamonu Education Faculty as an assistant professor and he is still working there under the new title Kastamonu University.

Currently, He is working on energy, environment, and recycling, and also their educational dimensions especially, recycling of mixtures like plastics, biomass and inorganic matters for recuperation of energy and precious chemicals via pyrolysis process. He has published more than 20 papers in reputed journals.