

Conversions of waste high-density polyethylene plastic into renewable fuel using a CoCO_3 catalyst via a pyrolysis

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Abstract

Catalytic conversions of waste high-density polyethylene plastics into renewable fuel/petrochemicals were carried out using a cobalt carbonate (CoCO_3) catalysts by a pyrolysis-catalytic cracking process. Renewable fuel can be used as the different purpose of energy-source like petrol/diesel engines. Renewable hydrocarbons fuel were characterized by 2D-GC \times GC/TOFMS, FT-IR spectroscopy, ICP, ^1H NMR spectroscopy, CHNS/O analyzer and its results found absolutely good hydrocarbon compounds as (petrochemicals obtained from waste high-density polyethylene). Conversion rates of four experiments as waste high-density polyethylene into renewable hydrocarbons fuel was found 79%, 82%, 84%, 91 %, light gases 20.50%, 17.55%, 15.65%, 8.59%, residues 0.50%, 0.49%, 0.35%, 0.41.

Keywords:- Waste high-density polyethylene, Renewable Hydrocarbons Fuel, Pyrolysis process, CoCO_3 Catalyst.

Biography

Man Vir Singh is extrovert and innovative Assistant Professor (in Chemistry) with an aptitude for research and 8 years professional experience as an Assistant Professor/Lecturer (in Chemistry) at Science, Technology, and Universities in India. Possess profound subject knowledge and natural ability to impart education, using modern methods.



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