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Jet Fuel Production by Kerosene Hydrotreating

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This paper presents a study regarding Jet fuel production from kerosene, which was obtained by atmospheric distillation of a naphthenic Romanian crude oil. Physicochemical characteristics of kerosene must be upgraded in order to achieve Jet fuel specifications (JET A-1). This objective was obtained using a dual catalytic system consisting of two layers of different catalysts. The first catalytic layer contains a zeolite (Erionite) with a good acidity for cracking and isomerization of long chain paraffins, and the second catalytic layer contains a Ni-Mo/Alumina catalyst to hydrogenate the olefins formed in the first step. The catalytic tests were performed in a stainless steel tubular reactor at different temperature of 225 - 320°C and a pressure of 15 bar. The final product has a better freezing point, lower sulphur content and the smoke point increases over 25 mm achieving JET A-1 specifications entirely.

Biography:

Dorin Stanica-Ezeanu was born in Vatra-Dornei (Suceava County, Romania) in 1958. He received a M.S. degree in Petroleum Processing and Petrochemistry from the Petroleum-Gas University of Ploiesti (Romania) in 1983 and a Ph.D. degree in Chemical Engineering from the same university in 1997. After 2 years as production engineer at Brazi refinery (Romania) and other 4 years as scientific researcher at Research Institute for Petroleum Refining and Petrochemistry of Ploiesti (Romania), he joined, in 1989, the Department of Petroleum Processing and Petrochemistry from Petroleum-Gas Institute of Ploiesti (Romania) as Assistant. In 1992 he became Lecturer, over 7 years, in 1999, he became Assistant Professor and in 2004 he became Professor in the same Department. Over the years, in 2012 he became the Head of the Department of Petroleum Processing and Environmental Protection. His current research interests include catalytic systems for hydrogen production by steam reforming of bioethanol, waste PET recycling by glycolysis and hydrolysis, pyrolysis of waste rubber and biofuels from waste oils recycling. Prof. Dorin Stanica-Ezeanu is a member of Romanian Chemical Society and Romanian Catalysis Society, and he received many awards of excellence (2013, 2015) for his contribution in research of biofuels and waste recycling.