BIOMASS AND OILS CO-HYDROPROCESSING IN SUPERCRITICAL CONDITIONS Stepacheva A.A., Markova M.E., Lugovoy Yu.V., Tiamina I.Yu., Sulman M.G., Matveeva V.G., Sulman E.M. a.a.stepacheva@mail.ru Supercritical fluids Co-processing hydrotreatment: - Water -Tetralin - Secondary alcohols Hydrotreatment Cracking - Light hydrocarbons Heavy oil Bio-oil Ru- 10 % Co-SiO2-MN-270 1 % Ru - 10 % Co -SiO2- MN-270 I % Ru - 10 % Ni -SiO2- MN-270 Conversion, Guaiacol Catalysts wt. % hydrocarbon content, Ru-Co-SiO₂-MN-270 wt. % yield, wt. % Ru-Ni-SiO₂-MN-270 100 90 15 100 93 Substrates: 30 100 97 Anthracene 98 Guaiacol 50 100 propanol-2 concentration, vol. % Solvents: 120 hexane 6 Ru - 10 % Co-SiO2-MN-270 •The addition guaiacol of % Ru - 10 % Co -SiO2- MN-270 ✓ Propanol-2 Parr Series 5000 Multiple H_3C increases the Reactor System antracene ĊН-ОН H₃C hydrocarbon yield up to 98 wt. % Conditions •The synergetic effect of C-C and C-Temperature – 270 °C. O bonds breaking during the process Nitrogen pressure – 3.0 MPa Total pressure – 7.5 - 9.5 MPa is observed. Catalyst weight – 0.1 g •Benzene and cyclohexane were Substrate concentration - 33.33 g/L GC-2010 gas chromatograph found to be main product GCMS-QP2010S mass-spectrometer propanol-2 concentration, vol. % propanol-2 concentration, vol. %

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