

FROM BIOMASS TO VALUABLE CHEMICALS AND FUELS.

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ABSTRACT: Nowadays, the transformation of biomass into valuable chemicals and fuels through thermochemical, biochemical or even mixed technologies, is becoming increasingly popular and challenging. The paper presents some of the results obtained so far by using advanced catalysis for the conversion of biomass-derived syngas to fuels and chemicals, in a two-stage process. The first stage dealt with catalysts and catalysis for the conversion of biogas, obtained through anaerobic digestion, into syngas. So far, a series of Ni catalysts, with increased nickel loading from 4 to 29wt% , were prepared by impregnation onto mesoporous SBA-15 support and then, characterized exhaustively using physical techniques. The second stage dealt with the catalytic conversion of the syngas into long chain hydrocarbons, or synthetic naphtha. Similarly, cobalt catalysts, with different cobalt loadings, were prepared by wet impregnation onto the mesoporous SBA-15 support and characterized. A modified sol-gel method was used to prepare the support, which proved to have a high BET surface area of 800 m²/g, a very well-ordered mesoporous structure and narrow pore size distribution around 7.8 nm.