

## A REVIEW ON LIGNOCELLULOSIC BIOMASS CONVERSION TO DIESEL COMPATIBLE AND USEFUL PLATFORM CHEMICALS

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### ABSTRACT

*Energy demand is ever increasing, fossil fuels are depleting at faster rate and emission of green house gases by fossil fuels are increasing, this scenario forced the researchers to investigate alternate fuel. Biomass energy is a viable option as an alternative due to reduced CO<sub>2</sub> emissions. Biomass from food crops not a good option due to demand of food. Lignocellulosic feed stocks are residues of food crop and forestry waste. This makes researchers to focus on the conversion of feed stock to useful green fuels and other flat form chemicals. This present paper briefly reviews the conversion of lignocellulosic material conversion to furfural and furfuryl alcohol by hydrolysis process*

**Key words:** Lignocellulose biomass, biofuel, furfural, catalyst, hydrogenation

**Cite this Article:** Tulasi Tirupati, Kursam Krishana, K Rajanikanth and J Durga Prasad Reddy, A Review on Lignocellulosic Biomass Conversion to Diesel Compatible and Useful Platform Chemicals. *International Journal of Mechanical Engineering and Technology* 10(7), 2019, pp. 22-28.  
<http://www.iaeme.com/IJMET/issues.asp?jType=IJMET&vType=10&iType=7>

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### 1. INTRODUCTION

Biomass, a renewable source of energy is a viable alternative for energy production. The present researches concentrated on conversion of biomass to fossil fuels which produces energy for automobile sector. It received attention due to the fast depletion of fossil fuels due to their increased consumption. Another factor is the emission of green house gases by the combustion of these fossil fuels.

Biomass can be vegetable i.e. from plants or animal parts which are utilized for energy production. Biomass derived from plants i.e. feedstocks for the fuel production can be categorized in to three classes: starch including sugar, triglyceride and lignocellulosic matter. The fig.1 shows the chemical structure and typical sources of these biomass resources, reproduced from [1]. Starch is white powder consisting polysaccharide in which glucose monomers linked in  $\alpha$  1,4 chains [2]. It is prepared in all green plants and used as a food preservative for plants. The starch produced in a commercial manner from corn, beats, sugar cane etc. Chemical structure of triglycerides made of linkage of glycerol to three fatty acid molecules and thus these are known as triesters. Triglycerides are present in

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