

Manufacture of Jet Fuels through the Hydro-Conversion of Fatty Acids and Vegetable Oils

Saima Khan*

Abstract: The present study focuses on the hydro-conversion of fatty acids and vegetable oils into jet fuels. The process involves the hydrogenation of the double bonds in the hydrocarbon chains of fatty acids and vegetable oils, followed by the removal of oxygen and sulfur. The resulting hydrocarbons are then refined to produce jet fuels that meet the required specifications. The study shows that the hydro-conversion process is a promising route for the production of sustainable jet fuels from renewable resources.

Keywords: Fatty acids; Hydro-conversion; Jet fuels; Vegetable oils

Introduction: The demand for jet fuels is increasing rapidly due to the growth of the aviation industry. However, the production of jet fuels from fossil fuels is not sustainable in the long run. Therefore, it is essential to develop alternative sources of jet fuels. Fatty acids and vegetable oils are promising candidates for this purpose. They are renewable resources and can be converted into jet fuels through hydro-conversion. This process involves the hydrogenation of the double bonds in the hydrocarbon chains of fatty acids and vegetable oils, followed by the removal of oxygen and sulfur. The resulting hydrocarbons are then refined to produce jet fuels that meet the required specifications. This study aims to investigate the hydro-conversion process and its potential for the production of sustainable jet fuels.

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ce [7], 2 e ce e eede e edf e e eabe
e f e a e a e a d de e a f ed
b e ec d e A cae acdc d c e /
e caa . Pa c a 2 e e d c e
W d Tade Ce e P /A 2O3 a d 0.5 W d Tade Ce e P /HY
SO2/A 2O3 a a e ea f a caa a e f e
e d a d a I/N a a e ea e e b a ed. I ab e
a add a e e ed a a a c d be e ed
d c e f e eabe , e HDO caa e ed f
e a d be deac aed, e et ea - e e d
a ed. e e c a d e fa ed c a a a c ed -
d e a GH a a [8]. Ve eabe d c e e
f e a add a cce c e abe ba da c
e NA a d Pd caa de ea e ea e a de e e
e e. ec f e d ec e c a d e b a ed
f e eabe e W d Tade Ce e NA /SAPO-11 a
400 C de ea ba e e e a ea e et Je
A-1, e ea e e W d Tade Ce e P /SAPO-11 a 450 C
de ea e ba e e e e c a d e fa ed c a
e ad a a a e a a cca a ea .
F a e c a d e fa ed f e eabe e W d
Tade Ce e NA /SAPO-11 e e CO, ee e a a d a . e
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9. Ö@^} *ÁRÉÁŠÁVÉÁP *æ} *ÁÜÉÁZ@ [~ÁRÉÁÖ^} ÁSÁÇGÉF IDÁU] c{ á: í) *Á&æææ] ~ •í•Á& [] ááá [] •Á to decrease aromatic hydrocarbons and increase alkanes for improving jet biofuel quality. Bioresour Technol 158: 378-382.
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