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Bioenergy Research
Volume 13, Issue 1, 1 March 2020

A Review : Role of Fatty Acids Composition in Characterizing Potential Feedstock for Sustainable Green Lubricants by Advance Transesterification Process and its Global as Well as Pakistani Prospective (Review)

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Abstract

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High demand for crop oils is anticipated in the lubricant industry because of their renewable, non-toxic, environment-friendly nature. Crop oils typically offer high viscosities, viscosity indexes, and flashpoints. The unique structure of crop oils provides good lubrication, high flammability, and anti-corrosion ability. In contrast, petroleum-based lubricants face a difficult future because of declining petroleum reservoirs that will increase their prices. This paper reviews green - lubricant feedstock requirements, the effect of fatty acids composition to improve physicochemical properties, chemical modifications of green lubricants by applying transesterification to find suitable environmentally -friendly and cheaper feedstock to replace petroleum lubricants. Moreover, global and Pakistani indigenous crop oils are also analyzed for their potential use in green lubricants by comparing their fatty acid compositions, characteristics and reaction conditions according to applications and standards. This review discovers that cottonseed oil has great potential as a new sustainable and cheaper feedstock for the global and Pakistani green - lubricant markets. Green lubricant production rate can be enhanced significantly after upgrading the conventional production method. It is believed that this review paper will provide useful information to engineers, researchers, chemists, industrialists, and policymakers, who are interested in green - lubricants synthesis. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.

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Topic: Biolubricant | Base Stock | Trimethylolpropane

Prominence percentile: 95.080 ⓘ

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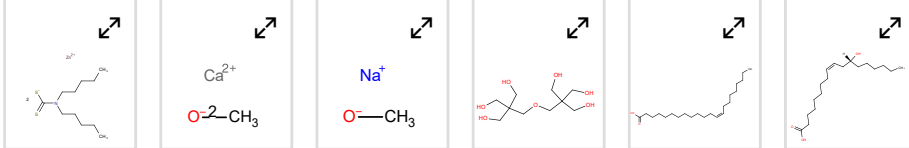
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Chemical modification Corrosion Cottonseed oil Crops Fatty acids Feedstocks Gasoline Oilseeds Petroleum reservoir engineering Petroleum reservoirs Physicochemical properties Synthesis (chemical) Transesterification Viscosity

Engineering uncontrolled terms

Green lubricants Microwave assisted transesterification Physico-chemical characterization Seed oil Trimethylolpropane

Engineering main heading:

Lubricants

Funding details

Funding sponsor	Funding number	Acronym
Chief Scientist Office See opportunities by CSO		CSO

Funding text

Authors would like to thank all the members of CFES, especially Md.Nur Ashraf bin Yusoff a , M. Hanul Harith, Faculty of Engineering, University of Malaya, Malaysia, for their cooperation. PCRET Pakistan Council of Renewable Energy Technologies AEDB Alternate Energy Development Board OPEC Organization of Petroleum Exporting Countries APLMA Pakistan Lubricant Manufacturers Association NPG Neopentyl glycol TMP Trimethylolpropane PE Pentaerythritol CSO Crop seed Oil FFA Free Fatty Acids ME Methyl Ester CSOME Crop seed oil methyl ester

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ISSN: 19391234

Source Type: Journal

Original language: English

DOI: 10.1007/s12155-019-10040-7

Document Type: Review

Publisher: Springer

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