

Surface Treated Carbon Catalysts for Fatty Acids to Biodiesel Conversion

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Technology Summary

We have developed a method to convert tires into novel catalysts for the conversion of free fatty acids to biodiesel. Heterogeneous solid acid catalysts hold promise for converting feedstocks with high free fatty acid (FFA) content to usable biodiesel. For the production of biodiesel to become more cost-effective, the development of cheaper catalysts, those that efficiently convert cheap FFA-rich feedstocks to usable biodiesel, is needed. Carbon produced from tires are significantly cheaper than other carbon-based materials, and through a specialized method, the tire carbons maintain thiophenic groups. The catalyst efficiently converts FFAs to usable biodiesel without significant leaching of the catalytic sites, indicating that the sulfonated waste tire catalyst is reusable.

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