

FUELS JOINT
RESEARCH GROUP



Band 4

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Lowering of the Boiling Curve of Biodiesel by Metathesis

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INTERDISCIPLINARY RESEARCH FOR FUTURE
MOBILITY

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The boiling line of diesel fuels is relevant for the combustion in modern engines. Biodiesel shows a boiling behavior that is very different to diesel fuel. To adapt the boiling line, metathesis reactions were carried out. Different products were obtained by varying the catalysts and the ratio of biodiesel to 1-hexene. As 20%-blends in diesel fuel some metathesis products were quite similar to the diesel fuel boiling line. The metathesis fuels were tested regarding interactions with other fuel components and engine oil. Additionally, the material compatibility was in focus. Corrosion effects on copper were within the specification for diesel fuel. Exhaust gas emissions from 20%-blends as well as mutagenicity showed no significant deviations versus diesel fuel.

In the result, no significant disadvantages for metathesis fuels were found. However, there production occurs currently only in lab-scale.



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