

HEAVY ALCOHOLS AS A FUEL BLENDING AGENT FOR COMPRESSION IGNITION ENGINE APPLICATIONS

Sibendu Som, Douglas Longman, Anita Ramírez

Engine and Emissions Group (Energy Systems Division)

Argonne National Laboratory, Argonne, IL, 60439

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Phytol as a Diesel Blending Agent

- Desire to decrease dependency on petroleum-derived fuels. Second-generation biofuels are important to develop diverse sources of clean renewable energy
 - Feed-stock from non-edible biomass sources
- Strains were identified that can be produced in large quantities by photosynthetic bacteria eventually producing a heavy alcohol called Phytol ($C_{20}H_{40}O$)

Phytol ($C_{20}H_{40}O$)

tetramethyl-2-hexadecen-1-ol



- The physical and chemical properties such as density, cetane number and heat of combustion are close to that of diesel fuel and thus **compatible with current fuel infrastructure**
- P5, P10, P20 blends of Phytol and diesel were made (by volume) and compared against baseline diesel experiments and simulations.

