

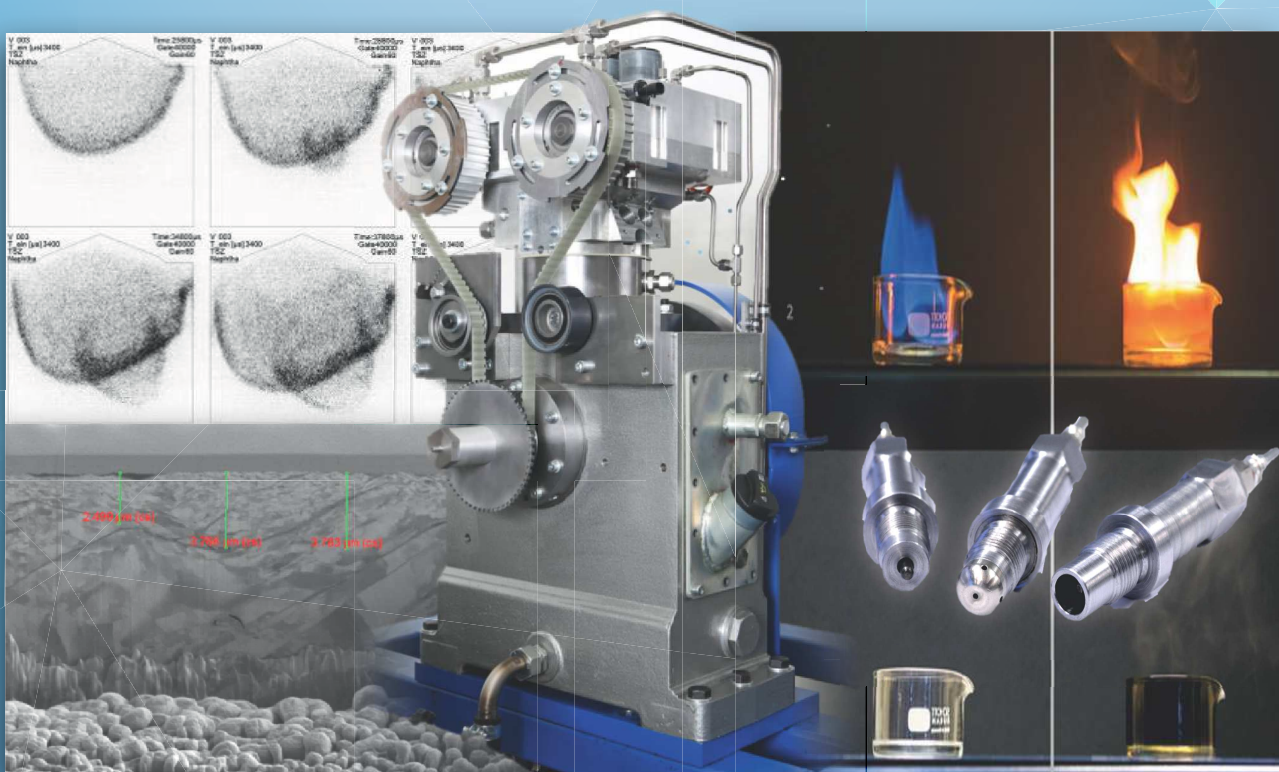


PROFILREGION

MOBILITÄTSSYSTEME
KARLSRUHE



DEVELOPMENT AND TEST OF AROMATIC-FREE REGENERATIVE FUELS



Vision for the future

Holistic development of an emission-neutral drive solution based on regeneratively produced, aromatic-free fuels, which makes a complete substitution of fossil drive sources possible.

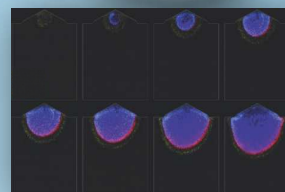
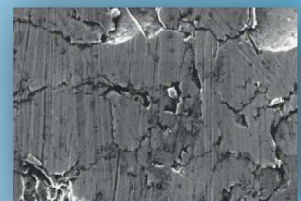
Motivation and objective

Pollutant-free and greenhouse gas-neutral mobility with the support of the combustion engine conversion of regeneratively produced fuels. In the pilot phase, suitable fuels were already selected by extensive candidate screening. These substances were tested with regard to their polymer seal compatibility and the effects on tribology with DLC layers on permanent exposure in the fuel system of conventional drive peripherals.

Finally, extensive investigations were performed on the flammability and flame core formation of various blends of the selected oxygenates with conventional super gasoline (RON 95 E5). In addition, gradations analogous to the introduction of the ethanol blend of existing fuel blends were selected (5–10–50 %).

This initial blend strategy represents a possible phase-in scenario for the application in the existing vehicle fleet.

The switch to regeneratively produced carbon-based fuels allows a parallel emission reduction through interlocking chemistry and combustion processes. The common design allows an efficient drive with minimal emissions despite the reduced calorific value.



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