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POSTER

**DETERMINATION OF THE OXIDATION STABILITY IN BIODIESEL AND BLENDS
PROBLEMS AND SOLUTION**

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The oxidation stability is an important fuel property to describe the ageing behaviour of fuels. Effects of limit transgression in the case of bio-diesel are filter backfill, precipitation of polymers in diesel / bio-diesel mixtures throughout the fuel supply system. In the European EN 590 Standard the ageing behaviour of diesel is characterized by determining the polymer (sludge) content of artificially aged fuel (EN 12205 / ASTM D 2274). Test methods for measuring only the sludge forming potential are unsuitable and do not characterize the oxidation stability in a sufficient way.

This Poster shows a new valuable test method for evaluating the oxidation stability in determining the Induction Period with Petrotest new instrument PetroOxy. In a small sealed test chamber a sample of 5 ml and pure oxygen at 700 kPa is heated up to 140°C. This initiates a very fast oxidation process that is displayed at the end by a pressure drop of 10% in the system. It was found that the time consumption to the pressure drop is directly related to the oxidation stability of the fuel sample. Besides Biodiesel, the PetroOxy is also applicable for Diesel and diesel / biodiesel blends. Several test were made for biodiesel and biodiesel blends and the results are shown on the poster comparing with the existing Rancimat method (EN 14112). Additionally, the PetroOxy method has the advantage to measure quick and directly the oxidation stability and is an ideal tool for process and test bench control.