Due the foreseen scarcity of fossil fuels and the increase of greenhouse gases in the atmosphere renewable biofuels are in the focus of several current research projects. For a fuel design process for future combustors the description of the influence of functional groups on the ignition behaviour of fuels can be an important step. The present study presents new ignition delay time data at stoichiometric conditions for \( n \)-pentanol and \( n \)-hexanol which can be produced from renewable sources. Investigated pressures range from 9 to 30 bar. By using a shock tube and a rapid compression machine it was possible to investigate a wide range of temperatures between 640 K and 1200 K. A detailed comparison of the ignition behaviour of C4–C10 \( n \)-alkanes and C4–C6 \( n \)-alcohols show the general trends and influence of the alcohol group. While for the alcohol fuels the reactivity is increased at high temperatures it is decreased for low temperatures in comparison to the alkanes. Furthermore, the influence of the alcohol group at lower temperatures seems to decrease for longer carbon chains so that a negligible influence of the alcohol group can be expected for very long carbon chains.

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