In our recently accepted European patent application, we were able to develop new biofuels that solve most of the existing problems related to the usage of biodiesel as alternative and sustainable fuel. The black and red arrows of the above shown figure illustrate the current production and consumption cycle of biodiesel. The red arrows indicate the steps that harm the environment: the production of biodiesel by transesterification in refineries as well as the production of the byproduct glycerol. Since there are hardly any industrial applications for this byproduct, huge amounts of glycerol remain as waste. In the scope of a PhD-thesis, we distinctly improved this biodiesel cycle, which is indicated by the green arrows. We enabled the direct usage of vegetable oils as one of the main biofuel components, which logically reduces the amount of produced biodiesel. Further, we could implement glycerol derivatives to our biofuels that are produced by simple addition reactions. The obtained biofuels can be used in unmodified diesel engines and possess very similar ignition and combustion properties compared to common diesel. It is also worth mentioning that no soot emission could be detected during combustion. We are currently working on further optimisations to also solve the last problem that applies for every biodiesel containing biofuel: high NO\textsubscript{x}-emissions.