

Biosyngas production and its advanced chemical and biochemical use: I. Syngas production from biomass

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The new bioliq® pilot plant at the KIT covers the complete process chain required for producing synthetic fuels and chemicals from dry lignocellulosic biomass. For energy densification of the biomass, fast pyrolysis is applied as pre-treatment step. The liquid pyrolysis oil and solid char obtained are further processed in the entrained flow-gasifier to tar-free, low-methane raw synthesis gas. Prior to chemically catalysed fuel synthesis a multistep cleaning of raw synthesis gases is performed by a hot gas cleaning system: particles, alkaline salts, and undesired trace gas components are removed to avoid catalyst poisoning during chemical catalysed fuel synthesis. Today, gasoline is produced in the pilot plant. However, R&D is dedicated to develop advanced high performance biofuel components such as oxymethylene ethers.