Mop Fan and Electrofilter: An innovative approach for cleaning product gases from biomass gasification (EMF-project)

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In the EMF-project, three partners (University of Nottingham - UNOTT, Berlin University of Technology - TUB, and Aerob-Beth Filtration GmbH - ABF) and a subcontractor (Eckrohrkessel GmbH - ERK) will jointly investigate, develop and evaluate a modular and adaptable product gas cleaning concept which consists of innovative and proven gas cleaning technologies, namely the mop fan and the electrofilter. The major objectives are:

- to investigate the performance of the mop fan with respect to the removal of particles, ammonia and additional water soluble gas contaminants by adapting the design of the mop fan to the application of cleaning of product gases from biomass fluidized bed gasifiers,
- to investigate the sensitivity of an electrofilter with respect to separation of different tar components from the product gas and to improve the design and possibly reduce investment costs of electrofilter,
- to explore the combination of mop fan and electrofilter for better product gas cleaning,
- to optimise the designs of mop fan and electrofilter so that they can be used to produce clean product gas suitable for direct application in internal combustion engines etc.
- to design and test high-efficiency compact heat exchangers with structured surface tubes for gas cooling to increase the overall efficiency of the gas cleaning concept

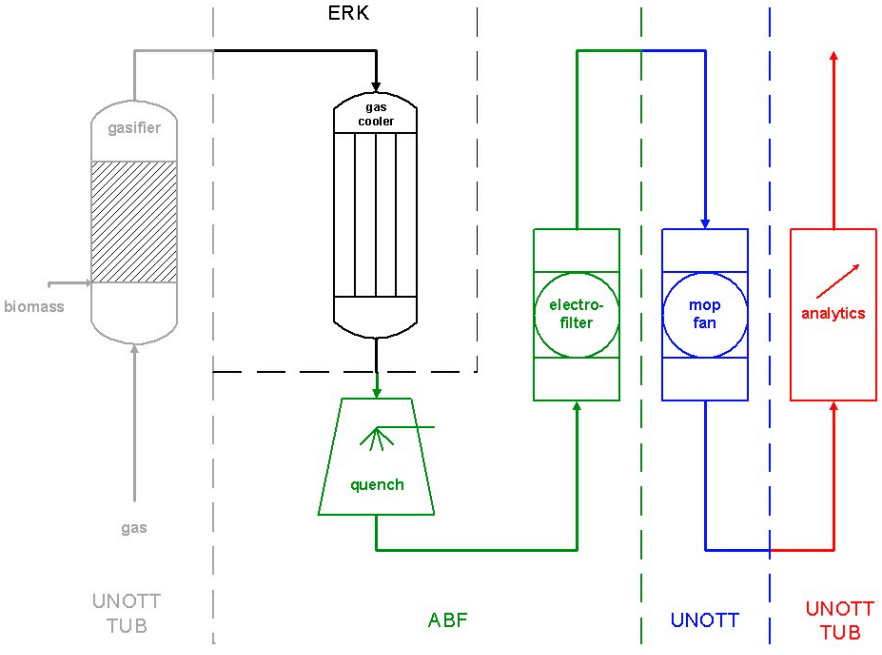

Figure 1: Flow sheet of the EMF-plant.

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