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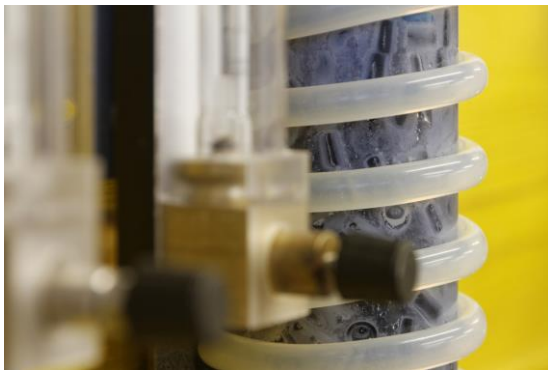
„Optimization of a bio-trickling system for the removal of H₂S from biogas“

During anaerobic degradation of protein rich substances, high concentration of hydrogen sulphide (H₂S) gas occurs. Due to its corrosive characteristics, H₂S has to be removed before further use e.g. in a gas engine.

A very efficient method to remove H₂S from biogas is the bio-trickling system based on sulphur oxidizing bacteria (SOB). The final product consists of a mixture of sulphuric acid/ elementary sulphur/ bacterial biomass, which is removed continuously to a final storage tank.

The removed “wastewater” is replaced by aqueous nutrient solution. The big disadvantage of the trickling system is the high demand of process water, increasing the amount of digestate of about 25%, which significantly affects the cost of distribution and/or digestate post-treatment processes.

In the industry-financed project, an optimization of a lab-scale bio-trickling system with respect to the process water consumption is planned. Several strategies will be studied; the results will be the basis for a possible implementation in a large scale industrial plant.



Requirements: interest and curiousness in scientific working

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