

MASTER-/DIPLOMA THESIS

Cultivation of acidophilic sulphur oxidizing bacteria for optimization of microbiological desulphurization

Biogas as energy carrier can be produced by anaerobic digestion from various substrates. Besides the main components methane and CO₂ the gas also contains traces of other components. One of these trace gases is H₂S which needs to be removed from biogas owing to its toxicity and corrosive nature. H₂S removal can be achieved either chemically by precipitation with iron salts or microbiologically, when H₂S is oxidized to sulphuric acid in a biotrickling filter.

The work will investigate the influence of various parameters (e.g. nutrient supply, immobilization, growth conditions) on the desulphurization efficiency of selected acidophilic sulphur oxidizing bacteria. Some strains have already been cultivated and pre-selected for further experiments. In addition, a lab-scale continuous desulphurization unit shall be monitored and optimized.

Your duties would include optimizing cultivation conditions for acidophilic sulphur oxidizing bacteria, carrying out chemical analysis, as well as monitoring and optimizing a lab-scale continuous desulphurization unit.

Basic information

Start date	now, May / June 2013
Duration	ca. 6 Monate financial support will be provided
Skills	background in microbiology / biotechnology / environmental science is desirable; ability to work independently is essential
Location	Tulln/Donau
Contact	Lydia Rachbauer, lydia.rachbauer@boku.ac.at , (+43) 2272 / 66280-535

