SiGa-Tech
Sludge & biogas systems

H_2S removal plant

Biothrix

Structure:
This process is realized outside of digester/ fermenter/anaerobic reactor.
Reactor chamber with biotrickling column is prepared as GFK vertical tank.
All process pipelines and devices are blocked with main reactor.

Process:
The biogas passes through reactor with internal liquid process tank and plastic packing column with big process surface area..
The main part - column, is installed in reaction tower and providing growth area for the sulfur oxidizing bacteria.
The air flow is controlled by the gas flow and O_2 concentration.
The nutrient solution is sprayed on the top of reaction tower and if necessary - modyfied by control system.
The sulfur being produced drop down into the process liquid tank and is removed out from reactor together with excess liquid.

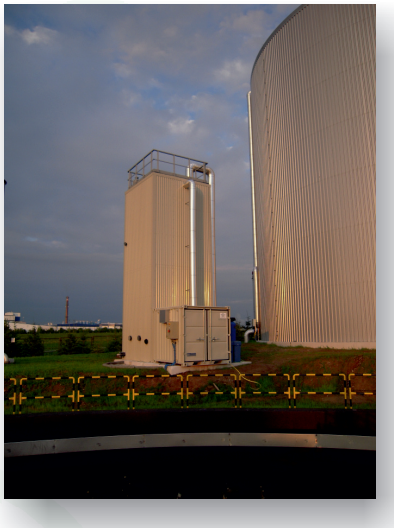
The following chemical reaction equations describe process of desulfurization by sulfur-oxidizing bacteria in presence of oxygen:

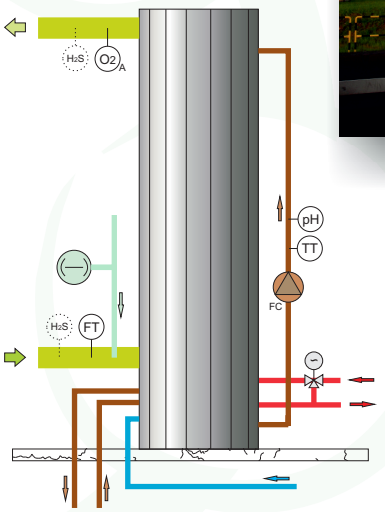
$$2\ H_2S + O_2 \rightarrow 2\ S + 2\ H_2O$$

$$2\ H_2S + 3\ O_2 \rightarrow 2\ H_2SO_3$$

Biothrix required high safety, that why all process connections are equiped with syphones or/ and check valves, air flow is strictly correlated with biogas flow and outlet oxygen concentration,
SRP system is equipped additionally with advanced control system which automatically stops air pumping, switch off power supply during emergency situations.

- microbiological process;
- reactor with biotrickling column;
- biological oxidation, air injection;
- external or internal nutrients source;
- H_2S concentration < 10000 ppm;
- biogas flow up to 3500m^3/h.





Basic equipment:
- insulated GFK reactor with internal tank and trickling column, heating unit, manually and/ or electrically operated valves set,
air pumping system, nutrient solution & washing water distribution system with nozzles,
biogas flow, temperature, pH & Redox measuring,
air compressor with regulation valve,
O_2 conc. measurement, local PLC unit,
electrical switch box.

Options:
- inlet/outlet H_2S measurement system,
- motor operated biogas valves..

More options are available on request

Microbiological SiGa system

SiGa-Tech
Maszków 147
32-095 Iwanowice
POLAND
tel.: +48 (12) 413 62 88
e-mail: sigatech@sigatech.pl
www.sigatech.pl