

Bio Processing Technology | Technology Offer

„Selectively Permeable Biogas Container“

Application

The innovative biogas container increases the energy content of biogas in a very simple way and should find application as biogas fermenter, biogas storage container, postfermenter or digestate storage and could also become part of a biogas plant.

Current Technology and its Shortcomings

- Biogas that is not further processed contains in addition to the desirable flammable methane also up to 50% non-flammable gases, in particular CO₂. The energy content is therefore less than optimal and the CO₂ that is not useful is necessarily stored in the biogas container, so that the storage volume has to be greater than necessary.
- The further processing of biogas involves lowering the CO₂ content. To that end, a range of specific technical processes may be used like pressure swing absorption (PSA), pressure water scrubbing, and chemical and physical absorption processes, as well as in some cases low pressure membrane processes. To allow biogas to be fed into the natural gas infrastructure, its methane content must be at least more than 96%.

It would therefore be advantageous to have a simple and effective (additional) option to increase the energy density of biogas in both of the above-mentioned situations.

Innovation

Researchers at the University Hohenheim, Germany, are investigating membrane materials which at room temperature and at normal pressure exhibit a high diffusion coefficient for CO₂ and at the same time retain methane securely.

The selectively permeable materials can also be used at higher temperatures and pressures and with different humidity contents, so that depending on the length of the storage period the CO₂ content can be lowered continuously.

Your Advantages/Benefits at a Glance:

- ✓ Higher heating value through reduction of the CO₂ content
- ✓ Reduced storage volume required
- ✓ No additional processing steps and pumps or similar equipment required
- ✓ Operates already at room temperature and normal pressure
- ✓ Inexpensive materials
- ✓ Can for example replace the usual foil cover; usual assembly can be used.

Patent Portfolio

A German patent application has been lodged.

The Technologie-Lizenz-Büro GmbH is charged with the commercialisation of this technology and now offers companies an opportunity to enter into a cooperation and/or licensing arrangement.

For further information regarding this technology, please contact:

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