

Incubated fermentation system

Description/Parameters

RITTER BATCH incubator fermentation system is a newly acquired apparatus designed for conducting batch or fed-batch biochemical tests with volumetric measurement of gas production.

The semi-automated anaerobic fermentation system consists of:

- 18× fermentation bioreactors (1 L)
- 18× absorption bottles (for >99% CO₂ absorption from biogas)
- 18× chamber-type mini gas meters (RITTER MilliGascounter) for biogas, CH₄, or H₂
- RITTER BBFS thermostatic chamber (5–55 °C) with control unit
- 100% gas-tight paddle stirrers (1–25 rpm) with magnetic coupling
- Data acquisition software (RIGAMO)

The system is supplied without a gas analysis module. Gas composition can be measured by taking a sample with a syringe and subsequently injecting it into a chromatograph (e.g., GC-MS Agilent 7890A), or by collecting the gas into a sampling bag and analyzing it using a portable analyzer (e.g., GEOTECH Biogas 5000).

A future upgrade of the system with modules containing gas concentration analyzers (sensors) is possible:

- CH₄: 0–100 vol.%
- CO₂: 0–100 vol.%
- H₂: 0–100 vol.% or 0–1000 ppmv
- O₂: 0–25 vol.%
- H₂S: 0–5000 ppmv

Utilization/Services

Primarily for biochemical gas production under moderately elevated temperatures, for example methane production via anaerobic digestion or hydrogen production via dark fermentation.

