Smart instruments
for smart people

From academic **know-how** to commercial products

Bioprocess Control Sweden AB was founded in 2005. With the company's co-founder and lead inventor Dr. Jing Liu as the CEO, Bioprocess Control has developed into a successful company that brings to market nearly 20 years of industry leading research in the area of smart analytical instruments.

Today, Bioprocess Control's portfolio include, among other things, their two flagship products: the Automatic Methane Potential Test System (AMPTS), which has become the preferred analytical instrument for conducting various anaerobic batch fermentation tests, as well as the Gas Endeavour; a novel analytical platform for bacteria respiration analysis and biological batch fermentation assays in both anaerobic and aerobic conditions.

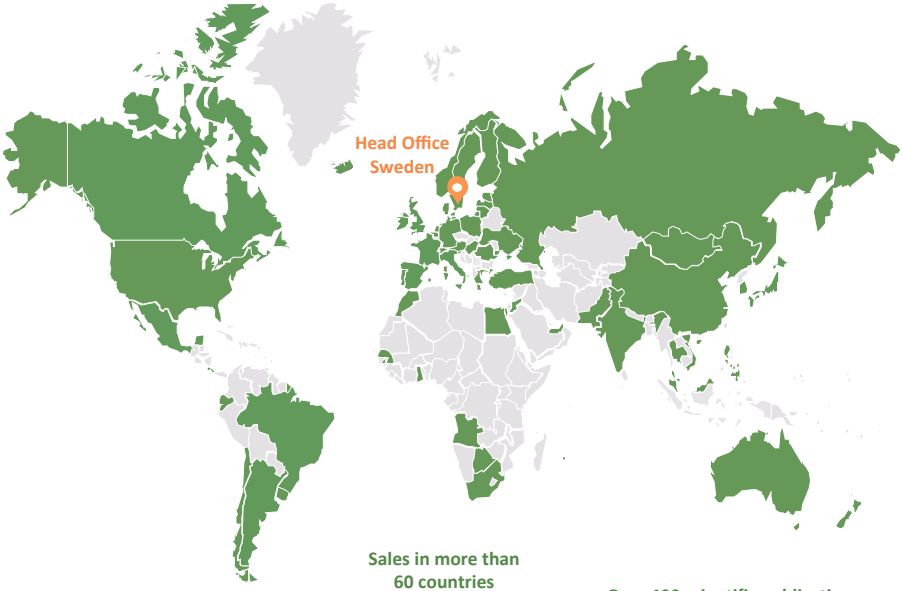
Providing a plethora of benefits, these automated analytical devices galvanise efficient, cost-effective operations, due to the reduction in time and labour. Extremely user-friendly and accessible remotely, the meticulously collected data can be reached whenever it is required. Moreover, these automated analytical devices provide standardised measurements, data and reports, delivering clear, comparable information on which evidence-based decisions can be made.

"We invest in innovation and the development of smart instruments, ensure the highest product quality throughout our portfolio, and focus on being service minded and always meeting the needs of our customers."

Dr. Jing Liu, co-founder of Bioprocess Control AB and Associate Professor in Environmental Biotechnology and Bioenergy at Lund University, Sweden.

What **we do**

Bioprocess Control brings to market analytical gas volume and flow instruments that allow for more efficient, reliable and high-quality research and analysis, leading to significant reductions in time and labour.



Partners in 16 countries

Sales in more than 60 countries

Over 400 scientific publications and more added each month

AMPTS II – a tool for anaerobic batch fermentation tests

The Automatic Methane Potential Test System (AMPTS) II is the analytical tool preferred by scientists and engineers for conducting various anaerobic batch fermentation tests. This includes performing, with up to 15 test vials, biochemical methane potential (BMP) tests, anaerobic biodegradability studies, specific methanogenic activity (SMA) assays as well as conducting residual gas potential (RGP) analyses on digested slurry. All of this is performed with easy access to sampling, analysis, recording and report generation; fully integrated and automated.

- Highly precise and accurate data
- Significant reductions in time and labour
- Standardisation of measurement procedures, data interpretation and reports
- User-friendly operations with remote access

"AMPTS helped us minimising the differences in laboratory skills between different researchers by following the same procedure for BMP testing in which manual handling is minimised, while a huge number of data points are gathered…

By using the AMPTS apparatus we can achieve reproducible results even with students who perform the test for the first time. We now include the AMPTS as a standardised test in our regular curriculum practical work."

Prof. Jules van Lier, Delft University of Technology, the Netherlands

AMPTS II Light – simplify the selection & pricing of substrates

"We use the AMPTS for both sales process and technical process optimization. The biomethane potential test performed with the AMPTS II can provide useful data to demonstrate the benefits of Cambi thermal hydrolysis technology for sludge pre-treatment before anaerobic digestion. This allows our clients to evaluate the possible return of investment on implementing Cambi thermal hydrolysis treatment in wastewater treatment plants."

Mr. Stefan Sandbacka, Vice President of Business Development at Cambi Group, Norway

The AMPTS II Light is a sister product of the AMPTS II. It is the instrument of choice for process engineers and plant operators when selecting and pricing substrates in biogas plants. The instrument is used for analysing, with up to 6 test vials, biochemical methane potential (BMP), residual gas potential (RGP) as well as anaerobic biodegradability and specific methanogenic activity (SMA) assays. All of this is performed with easy access to sampling, analysis, recording and report generation fully integrated and automated.

- Highly precise and accurate data
- Significant reductions in time and labour
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µFlow – low gas flow measurements made easy

The µFlow is a compact standalone low gas flow meter with high precision and accuracy. With a detection range up to 4000 Nml/hour and a high linearity, it is a perfect flow meter for online, real-time monitoring of inert and slightly aggressive gases at laboratory scale.

- Suitable for both wet and dry gas flow measurements
- Unaffected by changes in gas composition
- Plug-and-play and easy to operate
- Standard analogue signal output
- Available for two different measuring resolutions

"...the automation of the test minimises human errors, makes data collection more frequent than manual methods, and reduces operator time allowing more time for performing alternate tasks."

Associate Prof. Bernadette McCabe,
University of Southern Queensland, Australia

Gas Endeavour – a tool for anaerobic and aerobic biodegradability assays

"...it saves time by enabling quick and automatic batch experiments with very little manual labour, and that it is "student proof", because the instrument does not require long experience or training before you start using it."

Mr. Aurelien Perrault, Project Manager, Sludge & Energy Innovation, Thames Water, UK

The Gas Endeavour is a novel platform for analysing low gas volume and flow whenever there is a demand for high accuracy and precise measurements. The instrument can be used for research and industrial applications relating to: animal nutrition, wastewater, ethanol fermentation, aerobic and anaerobic respiration, greenhouse gas emission, evaluation of microbial communities and more.

- Simultaneous measurement of gas volume, flow and major gas composition in real-time
- Fully integrated and automated system for sampling, recording, and report generation
- Flexible system configuration with two different measuring resolutions
- Modular design for easy upgrade and maintenance
- Network ready

Bioreactors – simulate continuous operation of anaerobic processes

The bioreactors have a modular design, built with high-quality materials and robustness in mind. Intended for anaerobic fermentation tests, both for continuous and batch mode operations, the flexible design and user-friendly functionality makes them the ideal experiment platform for simulating full-scale biogas production processes in laboratory- and pilot-scale.

- Resistant to leakage and corrosion
- Flexible and modular design
- Easy to operate and maintain
- Available in CSTR, UASB, EGSB and IC configurations and three different sizes

"We bought six CSTR-5S reactors, six µflow gas flow meters and one data logger for our pilot-scale experiments on anaerobic digestion of biowaste... All instruments are very easy to handle. We can easily set up an automatic feeding and discharging system which minimises the labour-demand for the experiment follow-up… The design of gas, liquid and solid in/outlets are suitable for our experimental needs. No blockage issue has ever been experienced. We are fully satisfied by Bioprocess Control's pilot scale solution, it earns us some envious looks from colleagues :-)"

Laëtitia Cardona and Olivier Chapleur,
Researchers, Microbial Ecology of Anaerobic Digestion, IRSTEA, France

BioReactor Simulator – continuous fermentation made easy

"There are many instruments and methods on the market, but none are standardised the way the BioReactor Simulator and the other products from Bioprocess Control are. They provide market unique standardised systems and methods, which makes it easy to compare results."

Mr. Bjarne Uller, Senior Technology Specialist, Dong Energy, Denmark

The BioReactor Simulator (BRS) is a universal platform for simulating anaerobic fermentation processes in a continuous mode of operation. The system is controlled by a web-based software running on a remote cloud solution. The high quality of the data obtained from the BioReactor Simulator allows users to gain deeper knowledge for determining the suitability of a potential feedstock for biogas production, defining the suitable organic loading rate or retention time for a given feedstock, designing suitable feeding schedules and assessing handling or disposal conditions for digested residues.

- A simple and intuitive experiment setup and follow-up
- Standardisation of data registration and presentation
- Secure and reliable data logging and storage
- Compatible with bioreactors in different configuration and sizes

Training course

Bioprocess Control provides more than analytical tools; we transfer know-how too and with the value we add through our expertise in the biogas field and application of ICA (instrumentation control and automation) on various fermentation processes.

As an important part of transferring know how, Bioprocess Control offers all customers a training course where they meet experts in the field, learn to better understand different applications of the instruments and learn how to get the most out of the equipment.

- Two days of knowledge transfer
- Learn how the instrument and analysis works
- Get inspired
- See the products live and get hands-on practice

"...thank you all for the training course I attended this week. It was an extremely informative, well organised, and interesting two days. I have returned to UK with lots of new ideas about how I can improve the efficiency in using of our AMPTS analysers. It was also great to meet all of you in person, and the other users of your products. I loved visiting Lund. What a beautiful part of the world, I think I will definitely be planning my next holiday in Sweden!"

Mr. John Hunt, Rothamsted Research, UK

Our **team**

"We had the privilege of attending the AMPTS II Training Course in Lund, at the end of August 2016. This training course was designed to aid usages of the biogas testing equipment and also gave attendees a chance to pick the brains of the experts on techniques and experiences using the technology. This was a great course for CREST to be a part of and was an excellent opportunity for widening our knowledge and clearing up any queries. At CREST we feel it is important that our knowledge is up to date and current, so that we can provide the best support to the businesses that utilise us every day. Not only did it expand knowledge, but also gave us the opportunity to meet experts in the field and other interested people from Finland, Sweden and other parts of the UK."

Shane McBrien and Gary Logue, CREST, South West College, UK

Our technical products are underpinned by our expert team who are friendly, approachable and have a genuine desire to help. Their professional backgrounds and direct involvement with the products mean they can always address customers' enquiries, their commitment and expertise go far beyond a typical business exchange.

Bioprocess Control has an international team who are committed to delivering quality products and services. Our team provides technical support covering product enquiries, questions, maintenance and applications. You are most welcome to visit our website and contact us.

Product enquiries:
sales@bioprocesscontrol.com

General and technical enquiries:
support@bioprocesscontrol.com

Bioprocess Control

– flow rate measuring instruments

Bioprocess Control is a market leader in the area of low gas volume and flow analytical instruments for biotechnology related applications. We invest in innovation and development of smart instruments that allow for more efficient, reliable and higher quality of research and analysis, leading to significant reductions in time and labour and more efficient utilisation of manpower resources. We ensure the highest product quality throughout our portfolio, and focus on being service minded and always meeting the needs of our customers.

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