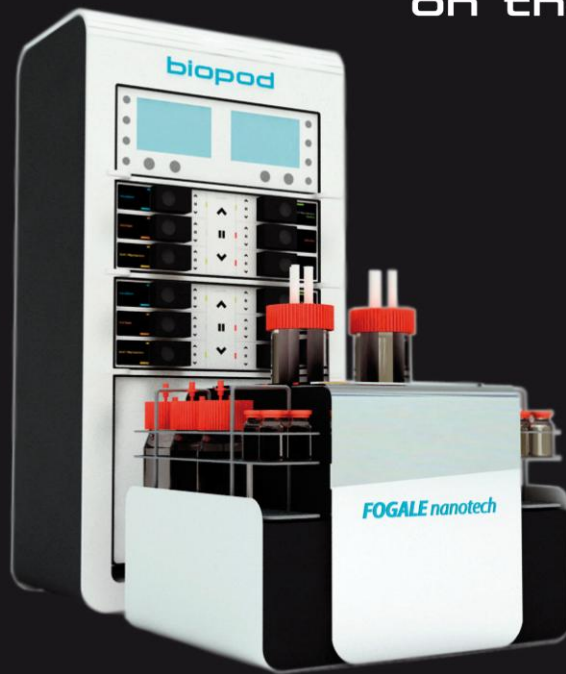


FOGALE *nanotech*

biopod *series*

the protein machine

on the bench



what makes the difference ?

Access Incredible Benefits with the biopod

The protein machine on the bench



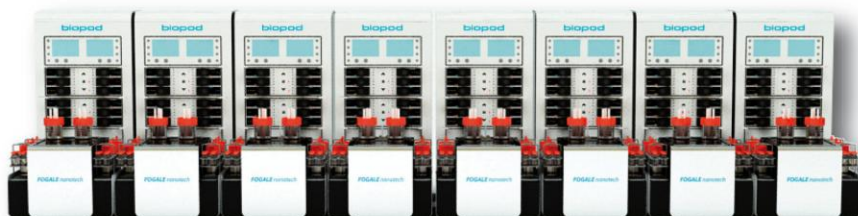
The biopod is a multi fermentor platform (POD) which enables multi-factorial fermentation runs, based on built-in biological recipes of culture for aerobic or anaerobic fermentation. The existing built-in recipes are capable of performing a fully automated batch, fed-batch or chemostat processes with pre-defined standard culture recipes, however also has the ability to customize recipes due to the modularity of the software platform.

Reduce and Optimize R&D and Process Development

Available in single, twin, triple and up to 32 units. The biopod design and philosophy is based on the use of an ergonomic modular construction, housing the local controller as well as additional gasing, pump and various modules. This result in considerable savings in benchtop space, a Quad system (8 fermentors) is occupying less than 1 square meter (10.7 sq. ft)

The local controller using biological recipes is pre-configured in a tower arrangement. It offers a comprehensive range of remote controlled strategies and up to 9 automated biological recipes. It also has a classic remote control cascaded PID control loops, x-stage cascade control for pO2, alarm monitoring, recipe control and password protection for critical system parameters.

Compact Modular Design



Proven Scalable Results

Scalability to conventional fermentor has been proved with similar sensors, parameter control ability and performance.

Batch results obtained in routine with e. coli compare to production with shake flask is a significant advantage: higher yield with reduced production time and less space on the bench.



The Advantages

Compare to traditional scale-up or scale-down operation in fermentation, the biopod platform is offering significant advantages:

- The fermentation is driven by a biological model automatically.
- A true scale up (using High Density Media) with e. coli.
- Insight and Improvement of the robustness of a process (for PAT and Quality by Design initiatives).
- Independent fermentor to study at same time different biological strategies to enhance the production of the target protein.
- New design of recipes are validated before use in routine conditions by the end user.
- Start, inoculation, growth phase and stop of each parallel fermentation is fully automatic.
- Cultures are started any time without an operator when fermentor is used in an automatic mode with a built-in recipe.

Expandable with No Compromise

Advanced Software

The software platform is designed to support biological models based on physical parameters to control automatically growth of cells.

Control of the culture is based on the defined recipes for protein production with e. coli, pichia pastoris, customized recipes or as a classic fermentor to design a specific recipe to become fully automated. This innovative and unique method of supervision, lead to a concept where cells are managing the process instead of using only the physical parameters as the way to manage and control a fermentation run.

Performance Achieved with Remote Biological Recipes

Culture type	Final OD	Time	Temp.
e. coli batch (complex High Density Media)	90	8h	37°C
e. coli fed batch (chemically defined media)	120-130	15h	37°C
pichia fed batch (chemically defined media)	300-350	72h	30°C

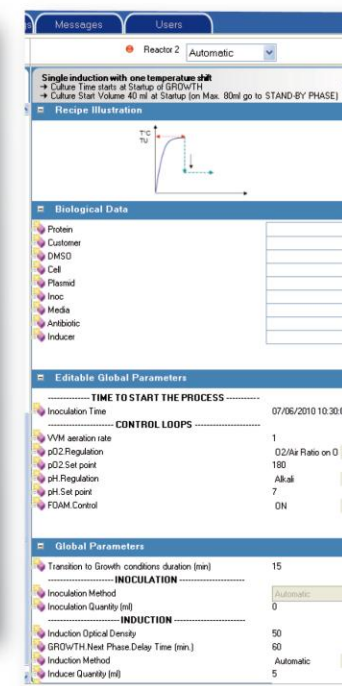
Remote Monitored Fermentations

The built-in recipes are:

- Recipe 1: Single chemical induction without temperature shift
- Recipe 2: Single chemical induction with one temperature shift
- Recipe 3: Single chemical induction with two temperature shifts
- Recipe 4: Periodic chemical induction without temperature shift
- Recipe 5: Periodic chemical induction with one temperature shift
- Recipe 6: Dual chemical inductions without temperature shift
- Recipe 7: Dual chemical inductions with two temperature shifts
- Recipe 8: Thermal induction with two temperature shifts
- Recipe 9: Single chemical induction in fed-batch process culture

In addition there are additional software modules available, like specific biological recipes custom made to the target protein to be expressed.

In combination with the built-in software, the biopod is a concept fully designed to change the way fermentor performance must be achieved with less running time and less complexity.



Do it all Faster and Better

Specifications

Control unit	Dimension (W/D/H) Weight Electrical supply Peristaltic pumps	365 x 230 x 730 mm 35 kg 110-230 VAC - 200W up to 6 per fermentor
Mainframe fermentor	Number of fermentor Sensors Dimensions (W/D/H) Weight IP classification Fluids	1 or 2 Temp., pH, O ₂ , biomass, foam 380 x 250 x 240 mm 12 kg IP65 1 bar nominal pressure for gases No water connection
Communication	Scada software	Integrated storage data Supervision of process Web server for remote control
Connections		Ethernet, USB 2.0, RS 485

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FOGALE nanotech, known as the worldwide reference for biomass monitoring based on capacitance, OD and provides specific standard & OEM solutions for pharmaceutical and biotech markets.

Wherever your business is located, our worldwide support provides the service you deserve and expect. Our team of experts will help you set up new project and will provide full-scope customer service.

Our sensors and fermentors, experience and knowledge our professionalism and commitment are the guarantee of your complete satisfaction.

For more information about our products, please call us or visit our website.

biopod

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