

MULTIPARAMETER SENSOR (MPS)

Optical Sensing Technology for the Monitoring of Multiple Parameters in Shake Flasks



Shake Flask Challenges

No Monitoring

- Black-box shake flasks with limited bioprocess understanding

Manual Sampling

- Low data density
- Extensive hands-on time needed
- Process interruptions & loss of culture volume

Parameter-specific sensors

- insufficient process monitoring leads to gaps in process optimization and development



Exemplary Data

The fluorescent protein shifts colors from green to red over time. Green fluorescence indicates promoter activity (more protein is synthesized) but when fully matured the protein fluoresces red light, indicating the amount of accumulated, active protein.

- Biomass
- Green Fluorescence: Emission at 525 nm
- Red Fluorescence: Emission at 590 nm

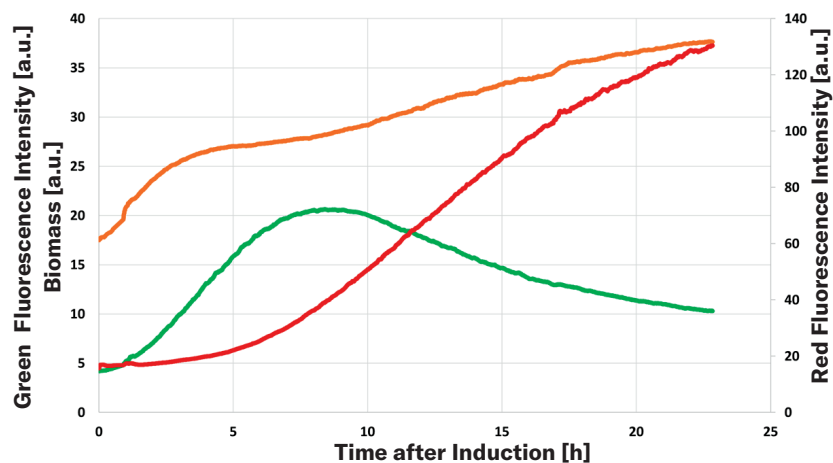
Key Features

- Most versatile shake flask sensor on the market
- Monitor a broad range of parameters:
 - Biomass
 - Fluorescence
 - Dissolved Oxygen
 - And more!
- Easy to install under each shake flask

Benefits

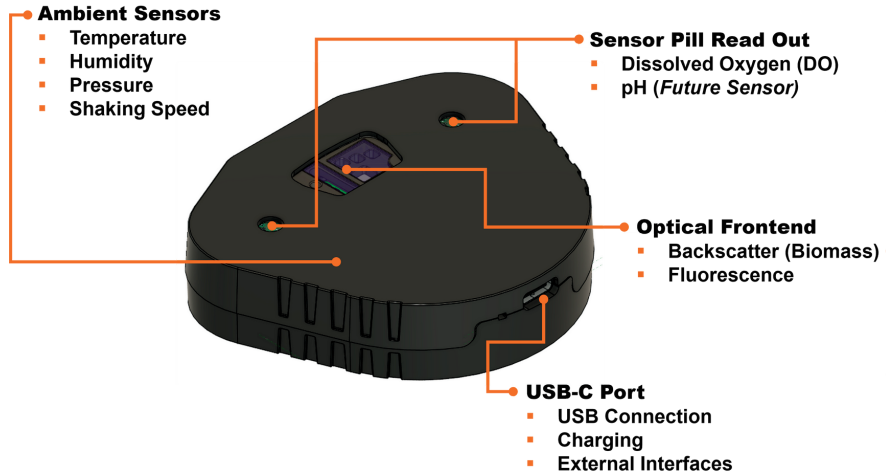
- Turn your shake flasks into low-cost, high-throughput mini bioreactors
- Say goodbye to manual sampling
- Use with any shake flask for reduced operating costs
- Save time with automated, online monitoring of many shake flasks in parallel
- Real-time, actionable insights from all your shake flasks

E.coli Expression of a Photoswitch Protein



How it Works

Our Multiparameter Sensor (MPS) enables dissolved oxygen, backscatter (biomass), and fluorescence monitoring in shake flasks. The platform-type sensor is built to accommodate additional sensor parameters as they are developed by the sbi team, ensuring scientists will have the latest technology.



Compatible With Your...

Bioprocess

- ✓ For a broad range of organisms
- ✓ For most media compositions

Lab Infrastructure

- ✓ For different shake flask sizes
 - From 100 mL - 2000 mL
- ✓ Compatible with every shaking incubator
 - Clamps and Sticky Mats

Applications

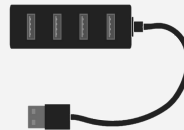
- ✓ Bioprocess characterization
- ✓ Collect critical process parameters for an informed upscaling process
- ✓ Optimize process conditions with parameter-based feeding

Components



Multiparameter Sensor & Adapter

Each MPS is positioned in the specialized adapter under the shake flask and measures non-invasively through the vessel wall.



USB Hub

Several sensor plates can be connected to a single hub. The hub bundles the data from all monitored flasks and sends it to the DOTS Software.



DOTS Software

The powerful software allows for easy sensor handling and real-time data visualization.



Want to Smarten Your Shake Flask? Check Out the DOTS Platform!

[Contact Us](#)