

# Build a Smarter Shake Flask, One Parameter at a Time

DOTS combines sensors and actuators with a powerful software to create bioreactor-like shake flasks with actionable insights into your bioprocess, when and where it matters most.

## Liquid Injection System (LIS)

Automated feeding of liquids into shake flask cultures. LIS enables bioreactor-like options in shake flasks: fed-batch, DO-based feeding, biomass-based feeding, automated promotor induction, and more.

## Multiparameter Sensor (MPS)

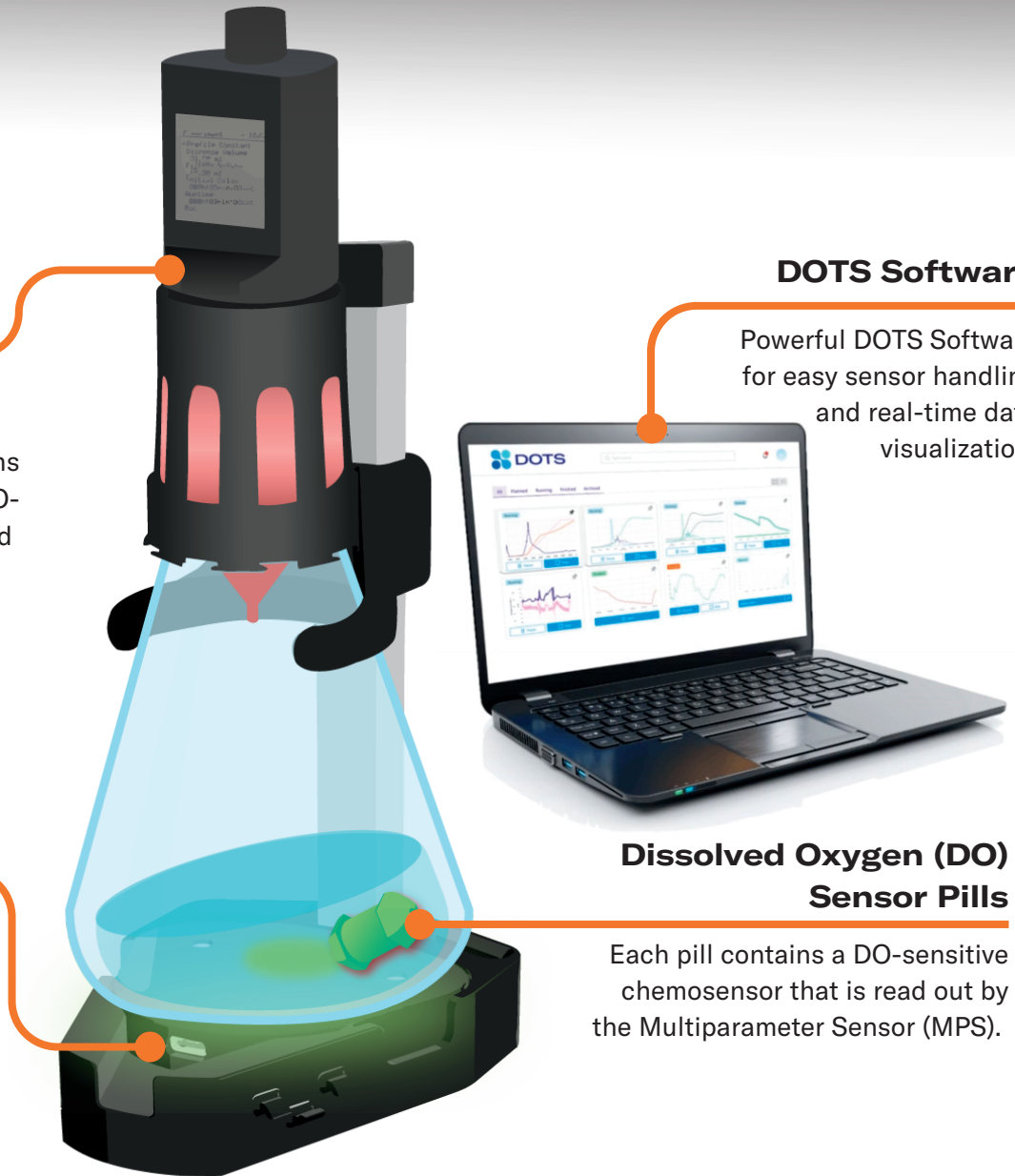
Optical and non-invasive monitoring of various process parameters like biomass, fluorescence, dissolved oxygen, and many more.

## DOTS Software

Powerful DOTS Software for easy sensor handling and real-time data visualization.

## Dissolved Oxygen (DO) Sensor Pills

Each pill contains a DO-sensitive chemosensor that is read out by the Multiparameter Sensor (MPS).





## What Our Customers Say

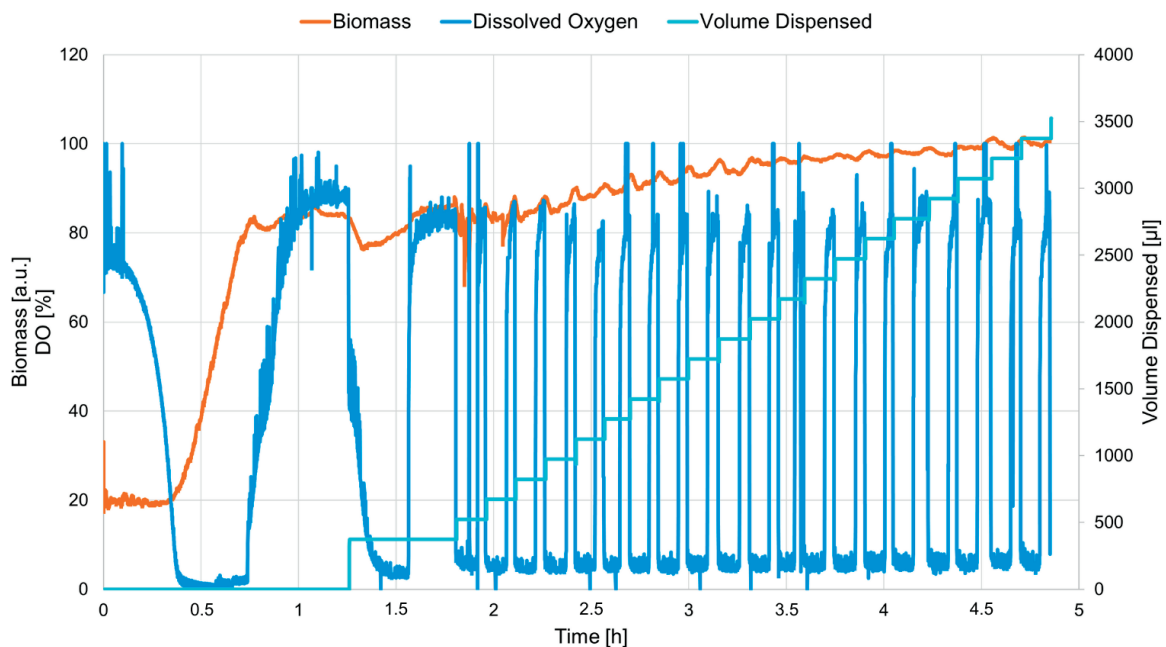
"With the DOTS Platform, I can combine sensors and actuators in a simple way to perform completely new applications like biomass-based feeding in shake flasks. My shake flasks can now operate similar to small-scale bioreactors, keeping the ease and cost-effectiveness of flasks but adding the sensor and control options of bioreactors."

- **Christoph Kutzner (Badische Peptide & Proteine, Heidelberg)**



## Exemplary Data : DO-based Methanol Feed

### Bioreactor-like Feedback Control for *Pichia pastoris* Cultivations in Shake Flasks



With a DOTS-integrated controller, the methanol feed (carried out with the Liquid Injection System) was adjusted to start repeatedly, always when the dissolved oxygen level (monitored via sbi's DO Sensor Pills) reached a preset threshold. By using this feature, methanol was always fed as soon as the cells recovered from the previous shot, enabling ideal cell viability while keeping promotor activity constant. Biomass was measured using the Multiparameter Sensor (MPS).



**Want to Turn Your Shake  
Flask into a Smart Bioreactor?**

[Contact Us](#)