

sbi **SCIENTIFIC
BIOPROCESSING**



Our Sensors, Your Insights

Think about what you could learn from real-time pH and dissolved oxygen data.

Our non-invasive, optical sensors easily attach to your culture vessel, readers transmit the data to the software, and long-term cultures can be monitored for better experimental design decisions. The state-of-the-art fluorescence technology provides high resolution and unmatched accuracy data. Your sensor-enabled insights may challenge conventional cell culture protocols and paradigms and help you improve culture outcomes.

For example, Bambrick et al. (2011) question the widely-used practice of relying on incubator gas phase levels to control oxygen tension in cell cultures. Cells growing on dissolved oxygen sensors revealed pericellular oxygen levels lower than gas levels and a dependency on agitation, cell density and metabolism, highlighting the significance of these real-time sensor measurements.

Everything We Do is Bio

We're laser focused on bio applications:

- Cell Biology
- Tissue Engineering
- Regenerative Medicine
- Biotech
- Pharma



Our sensors are used in cell culture, tissue/organ-on-a-chip development in standard or custom bioreactors, tissue/organ-on-a-chip microfluidics systems, and for small- to large- scale therapeutics development.

The Technology



Our core technology is the brainchild of Professor Govind Rao and his collaborators, Professors Dan Kostov, Lea Tolosa and Xudong Ge, from the Center for Advanced Sensor Technology at the University of Maryland, Baltimore County. SBI acquired the technology in 2011 and expanded the product development roadmap to create products that meet the most urgent research and biomanufacturing needs.

We are passionate about sensor technologies and the insights they can provide. So we invest in technology development and partnerships with leading inventors to commercialize the best of the best.

Insights Are Everything

Intelligent Dynamic (ID) Products

The goal of our technologies is better experimental results. Our sensors are used for monitoring and control with closed loop feedback systems, and we provide agitation and environmental control products for better cell culture outcomes.



ID-DEVELOPER'S KIT

The most versatile product: it includes all the components a researcher needs to add real-time pH and dissolved oxygen sensing to a wide variety of culture systems. From T-flasks to petri dishes, shake flasks to tissue engineering bioreactors and everything in between, attach the ID-Sensors inside your vessel, position the ID-Reader on the outside, install the software on your laptop, and begin data acquisition.



SENSORS



MONITORING



AGITATION



ENVIRONMENT

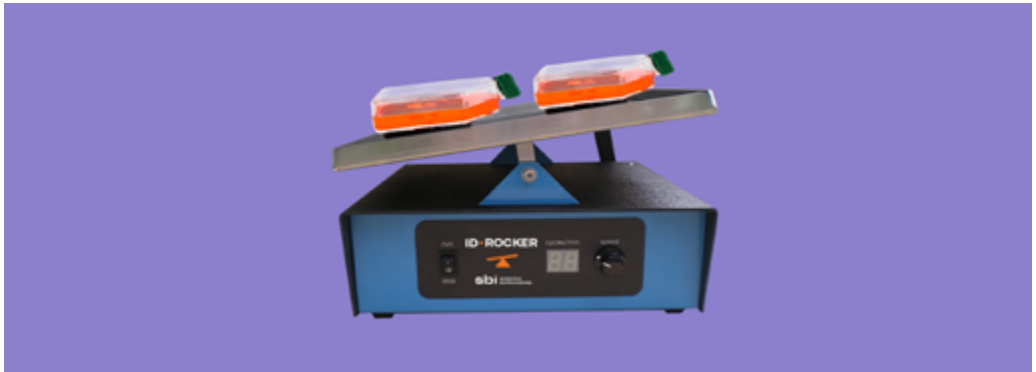


CONTROL



ID-SHAKER

Temperature control and agitation are added to real-time pH and dissolved oxygen sensing in shake flasks with the ID-Shaker. A combination of different-sized and shaped shake flasks from 100 ml to 2 L can be used on the platform with adjustable 35-300 rpm speed.



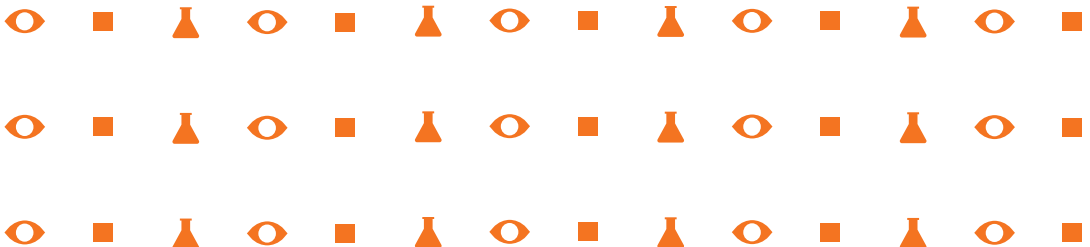
ID-ROCKER

Agitation plus real-time monitoring of pH and dissolved oxygen in tissue culture flasks can elevate your old cell culture protocols to new heights. The ID-Rocker can be placed inside a cell culture incubator for environmental control, and up to 4 fully-instrumented T-flasks, T-25s to T-150s, can be placed on the rocking platform.



Sensor Specifications

	pH	DO
MEASUREMENT RANGE	6-8	0-100%
ACCURACY	1.5% at pH 7	0.2% at full scale
RESOLUTION	±0.01 at pH 7	±0.1% at 21% O ₂
RESPONSE TIME	<15 sec	
TEMPERATURE RANGE	+5 to +50°C	
DRIFT	< or = 0.005 pH per day at 1 minute scan interval	
CALIBRATION	Pre-calibrated; recalibration is possible	
STERILIZATION	Autoclave, gamma irradiation; inquire about other methods	
SENSOR LIFE	45 days (continuous monitoring), several months (intermittent monitoring)	
SHELF LIFE	12 months	
SENSOR DIMENSIONS	10mm x 10mm x 0.3mm, Custom Dimensions Available	
SCAN INTERVAL	10 seconds or greater	
OPERATING SYSTEM	Windows 7/8/10	
WARRANTY	24 months	





It's Grow Time.

It might be fun to just get one of the products and start gathering data, but it's even more fun to discuss your research project together first so we can learn about the cool work that you do and set you up with what you need.

Our Application Questionnaire at scientificbio.com is quick to fill out and a great first step in connecting.

**For inquiries or to place an order,
email us at insights@scientificbio.com**

