TECHNOLOGY OFFER

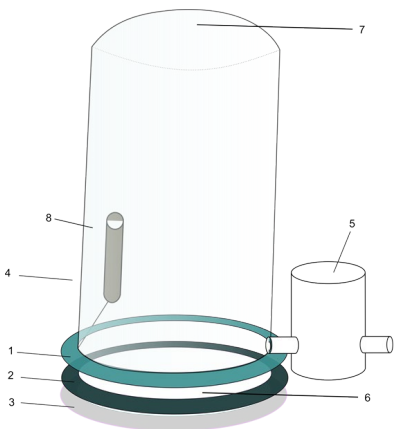
UNDERWATER METABOLIC CHAMBER

Background

Metabolic studies in underwater environments are crucial for understanding ecological dynamics and health of aquatic ecosystems, namely from marine communities. Accurate in situ measurements of rates of productivity and respiration are hard to obtain, with several impediments the current equipment's used.

Technology

The technology provides a portable in situ underwater metabolic chamber capable of measuring metabolic parameters, including primary productivity, respiration rates, oxygen flux, in situ incubation, carbon cycling, and climate change.
The measurements can be accurately obtained across various conditions and marine communities without disturbing them, directly within the natural habitat.



(1) top basal frame;
(2) bottom basal frame;
(3) sealer frame (foam joint);
(4) flexible incubation bag;
(5) flushing system;
(6) open bottom of the flexible incubation bag;
(7) closed top of the flexible incubation bag;
(8) sensor inside the flexible incubation bag.

Underwater Metabolic Chamber Scheme

Advantages

- Non-invasive device with accurate in situ measurements;
- Repeatedly deployable, without requiring special technical knowledge;
- Low-cost modular system adaptable to different communities (benthic & pelagic);
- Flushing system for long-duration incubations;
- Flexible chamber walls that provide transmission of wave energy into the chamber;
- Custom chamber size.

PATENT STATUS

European Patent Application
EP4520813
Priority date: 29.06.2023
Pending in Europe

DEVELOPMENT STAGE

TRL 5 – Technology validated in relevant environment

APPLICATIONS

Metabolic studies underwater for marine communities.

COOPERATION

Technical Cooperation Agreement;
Licensing Agreement;
Manufacturing Agreement.

KEYWORDS

Ocean Metabolic Chamber
Benthic Metabolism

DEVELOPED BY

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