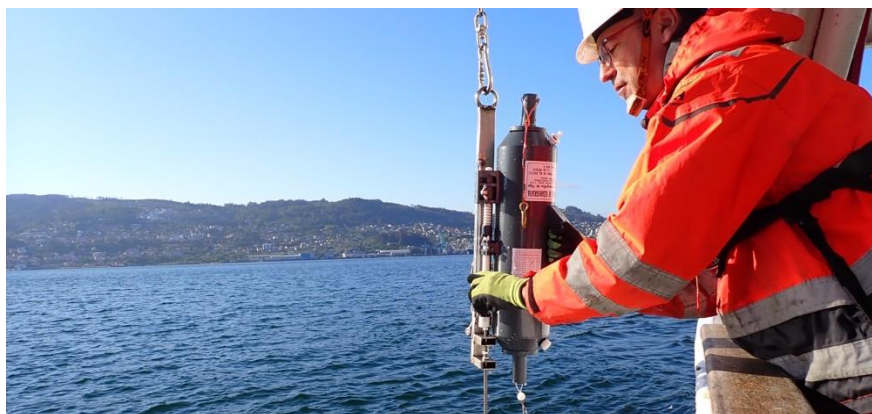


Technology Offer

CSIC/CJ/025

Precision water sampling device for near-seafloor environments



Mechanical device for oceanographic bottles that automatically triggers closure upon contact with the seabed. It enables water sampling close to the seafloor with greater precision and reproducibility, reducing sediment contamination.

Intellectual Property

Priority patent application filed.

Stage of development

Prototype validated in a relevant environment for oceanographic sampling (TRL 6).

Intended Collaboration

Licensing and/or co-development

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Market need

Sampling water close to the seafloor is essential for oceanographic studies, environmental monitoring, and impact assessments. However, current sampling systems present limitations when water must be collected very near the seabed. Conventional oceanographic bottles rely on messenger-based activation mechanisms, which introduce uncertainty in the actual closing depth and may affect sample representativeness. Therefore, there is a growing need for sampling systems that enable precise and reproducible water collection near the seafloor.



Proposed solution

A mechanical closure activation device for oceanographic bottles is presented, enabling water sampling at a predetermined distance from the seafloor. The system can be integrated into standard bottles such as Niskin or Go-Flo and automatically triggers the closing mechanism upon contact with the seabed. The device incorporates a guided rod with a weighted base that transmits the movement required to activate the bottle release. Interchangeable rod lengths allow precise adjustment of the sampling height above the seabed. The system is autonomous, robust, and does not require electronics or external activation mechanisms.

Competitive advantages

- Precise and reproducible sampling close to the seafloor.
- Reduces contamination caused by sediment resuspension.
- Compatible with standard oceanographic bottles (Niskin, Go-Flo).
- Automatic activation upon contact with the seabed.
- Robust mechanical system, no electronics required.
- Adjustable sampling height using interchangeable rods.