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Nationality: Portuguese

Orientation: Ocean Observation and Global Change
Specialization Area: Systems and Technologies for ocean observation
Research Area: 1.7 Equipment and sensors



PhD project: Lab-on-chip biosensor for chlorophyll analysis to classify phytoplankton

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Summary: Human society is expected to increasingly rely on marine ecosystem services, whether due to the increasing demand for food, energy or mineral resources, for innovative medical treatments based on novel bioactive agents, or simply because the oceans are seen as a privileged path for trading, transportation of goods and leisure. The marine ecosystems health depends on a wide number and type of variables, most of them still insufficiently monitored at the proper temporal and spatial scales. The acquisition of this information through long-term monitoring programs is vital for the assessment of ecosystem health, to assess the structure and function of the marine system and to achieve a more sustainable exploitation of resources. Allied to the necessity of efficient monitoring, this PhD project is based on cutting-edge technologies (lab-on-chip, MEMs, smart materials and underwater networks) broaden the type, frequency, temporal and spatial scales of variables and type of habitats to be monitored. To accomplish such challenging goal, one sensor for measuring physical oceanographic variables like photosynthetic phytoplankton pigments, to comply marine environment specifications and low-cost fabrication will be developed.

