

Arduino in Marine Sciences: building and controlling sensors for marine research projects

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Arduino is an easy-to-use hardware and software platform with endless possibilities on reading data captured with sensors and controlling connected instruments. Via hands-on training workshops students learn to implement this technology and get an understanding of the possibilities of the platform and the potential use in research.

A fit-for-purpose training kit was developed and guides trainees through a series of lessons. The first lessons make them acquainted with the Arduino platform and a range of sensors commonly used in a marine context. In further lessons small projects are developed which can be easily deployed in real scientific situations. For each of these projects example applications are provided.

In 2017 two training workshops have been organized which attracted a wide range of trainees (from industries to academia). A third workshop is planned in spring 2018.

Arduino in Marine Sciences is since academic year 2017-2018 also an integral part of the IMBRSea Master Programme - www.imbrsea.eu.

Potential implementations of Arduino in Marine Science are:

- Temperature loggers to use in the field or in an experimental aquarium setting
- Field station measuring temperature, salinity, air humidity, air pressure
- Controlling of camera in experiments studying the behaviour of Marine biota
- Controlling the tidal, temperature and light regime in an aquarium tanks to mimic field situations in order to study the behaviour of marine life
- Floating data logger which capture, store and transmit environmental parameters

Keywords: Arduino; sensors