Eyes in the Water Can Save the World for Life: A Device Which Remotely Measures Seawater Quality Below the Surface of the Water

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The aim of this work is to measure the parameters of sea water quality, their wireless transmission as well as their posting on the internet. The quantities that are measured are the temperature, the pH and the turbidity, while there is also the capability of using additional sensors. According to the literature, the values of temperature, turbidity and pH are inextricably linked to many phenomena in marine waters such as eutrophication, acidification, etc. The project is based on the arduino microcontroller and consists of two main parts; The first includes a circuit of those sensors which is can be sealed in a container below sea level for a long period of time. In order to know location of the circuit at all times a GPS module has been installed to display the exact geographical coordinates on a map. The sensor readings are transmitted wirelessly to the second circuit located on land collects, captures in graphs and posts on a web page the gathered values. The value of this construction lies in the fact that the monitoring of the measured parameters and especially their variation, evaluates the water quality but also makes it possible to timely identify hazards from phenomena such as eutrophication, possible pollution, etc. Finally, it is worth noting that this device can be used for the corresponding research in several other aquatic ecosystems such as rivers and lakes.