PACKAGING FOR MARINE MICROSENSORS

In order to study the ocean, scientists must have data on a myriad of parameters such as salinity, currents, and temperature. The data must be obtained from sensors that are located at various places in the ocean and at various times. The sensors must be placed in the water by research vessels, which can only sense the desired parameter at one time. The more data that is needed, the more sensors are required. Also, the data is best collected at multiple times from each of many locations. The cost to gather such information, when the sensor data must be obtained from research vessels, is high, and when more data means more vessels, sometimes scientists must make do with less data.

While data can sometimes be collected from sensors on buoys or remotely, both of these methods have limitations. Also, current sensors are bulky – in the range of 2 to 3 feet in length and cost around $2,000 each. What is needed is a small, inexpensive, package that would be capable of housing a variety of different sensors and would be designed to be immersed in the marine environment for long periods of time.

A package for marine sensors has been invented that will meet the needs of scientists. The sensor is small and cone shaped, and measures about 2 inches in diameter and is about 2 inches high. The body of the sensor is made from synthetic resin and is designed to float. The sensor also carries an onboard piezoelectric shaker that vibrates the housing so that marine animal or plant life will not be able to attach to the sensor. The sensor also houses an intelligence module to monitor and control sensor performance and a battery based power supply. The cost of producing such sensor packages in large volumes is low, allowing scientists to use many of them in many locations and each of them can gather data over a period of time.

The technology is patent pending, and has been published as application number US 2007/0194663 A1. The University of Arkansas seeks partners to commercialize the invention.

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