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Inexpensive Automated Water Sampling Device

The University of Florida is actively seeking companies to license an exciting technology to obtain water samples from natural systems, such as lakes and underground reservoirs. The quality of water is essential to all forms of life on Earth, and the analysis of water helps scientists to address many environmental issues. Until recently, water sampling in natural systems has been prohibitively complicated and expensive. Our researchers have developed a cost-effective water sampler that can be used in most natural systems.

Application

- Device to automatically collect water samples which can be used in most natural systems.

Advantages

- Provides automatic water sampling without the need for human supervision and operation minimizing labor costs
- Since the device is deployed directly in the water to be sampled it provides the collection of pure samples providing most accurate results
- Enables user to set multiple collection parameters, including sample size, number of samples, and frequency of sampling providing versatility to accommodate numerous applications
- Inexpensive to manufacture compared to commercially available water samplers providing broad user potential

Technology

The inexpensive submersible automatic water sampler is housed in a watertight plastic case and can be deployed far from shore and in deep underground water wells. The device is powered by a microprocessor that controls the sample collection dates and times, which are pre-set by the user. To obtain a sample, a valve on the device opens and water is collected using a syringe, which is then sealed. The device has the capacity to hold ten syringes, and several syringes can be triggered simultaneously to obtain a large sample. It is hoped that this device will facilitate water sampling in natural systems where prior methods have proven complicated and expensive.

Inventors

Dr. Jonathan Martin, Ph.D. is an Assistant Professor in University of Florida's Department of Geological Sciences. Dr. Martin's research interests include fluid

chemistry and hydrogeology, and submarine ground water discharge. Dr. Martin is involved with the Suwannee River Hydrologic Observatory and the Water Assessment Regional Network.

Mr. Ray Thomas is an Assistant in University of Florida's Department of Geological Sciences. Mr. Thomas' research interests involve the design and development of sample collection and data acquisition systems. Mr. Thomas serves as an editor for the *Journal of Earth Systems Science Education*.