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Intellectual Property

Status:

Patent Pending

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Methods and Systems for Ultra-trace Analysis of Environmental Waters

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Invention Description

Many sites with ground and/or surface water pollution have been identified across the United States. For site characterization, exposure and risk assessment as well as remediation monitoring, it is important to analyze the environment for toxic contaminants at trace levels. However, this sensing is often expensive, especially when attempting to detect ultra-trace contaminants.

A researcher at the Biodesign Institute of Arizona State University has developed a field-deployable sampling device for long-term, cost-effective monitoring of ground and surface waters. It can be used in space-restricted environments such as groundwater monitoring wells, and through its process of concentrating contaminants from large volumes of aqueous samples, it is able to detect contaminants at ultra-trace concentrations not previously attainable.

This device can be used for cost-effective environmental monitoring, tracking the progress and success of hazardous waste remediation, and for risk and exposure assessment.

Potential Applications

- environmental monitoring
- early-warning surveillance
- tracking the progress/success of hazardous waste remediation
- risk and exposure assessment
- ground and/or surface water pollution
- ultra-trace contaminants

Benefits and Advantages

- cost-effective
- detects contaminants at ultra-trace concentrations not previously attainable
- field-deployable to even space-restricted environments
- produced time-weighted average concentrations