University of Massachusetts Lowell

A Portable Heavy Metal Detector
Portable Heavy Metal Detector for Water, Soil and Sediments
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**Motivation**
Heavy metals in water, soil, and sediments present a major health risk.

**Existing Methods**

**Technology**
The electronic tongue (e-Tongue) is based on Square Wave Anodic Stripping Voltammetry. The e-Tongue is comprised of an electrochemical sensor array, data acquisition, and intelligent pattern recognition software to fill the unmet need for rapid, low cost, on-site characterization of toxic metals such as arsenic, cadmium, copper, lead, and mercury in water, soil, and sediments.

**The E-Tongue**

**Markets**
Environmental characterization, remote monitoring, industrial applications, water and soil testing.

**Summary**
The e-Tongue provides rapid, low cost, on-site characterization of toxic metals such as arsenic, cadmium, copper, lead, and mercury in water, soil, and sediments. The e-Tongue has the potential to be a low-cost alternative to traditional laboratory methods, enabling on-site monitoring of heavy metals in water, soil, and sediments.