

## PROJECT OVERVIEW REPORT

1. UTC Identifying Number  
69A3551847102
2. Center Identifying Number  
CAIT-UTC-REG41
3. Project Title  
Affordable On-Demand Testing of Water Contamination Using a Portable Nanoelectronic Lead Detector
4. Principal Investigator & Contact Information  
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7. Project Description  
Recent issues regarding lead in urban drinking water system have arisen. Specifically, the water distribution system in Newark N.J. has attracted a great deal of attention prompting the City and State DEP to conduct widespread testing and even distribution of water treatment devices and bottled water. The water distribution is aged and contains lead fittings that may impact water quality. The primary goal of this study is to develop and deploy a rapid, accurate lead sensing system for lead analysis in drinking water. In addition to accuracy, it is expected to demonstrate that the system can be used to sample a high volume of samples in a field setting with all of the difficulties that may come along with it.
8. Implementation of Research Outcomes (or why not implemented)  
The intended outcome of the project is a new portable electronic sensing platform for rapidly testing lead in water samples. The prototype developed during this research will be a potentially marketable product that will tap into a

global market for water testing and analysis instruments valued at \$3.5 billion in 2019. An on-site demonstration will be scheduled at the end of this project for various stakeholders to inform them of the availability and potential to this type of sensing system.

9. Impacts/Benefits of Implementation (actual, not anticipated)  
To Be Determined

10. Dates and Budget

Start date: 9/14/2020

End date: 3/31/2021

UTC (CAIT) Dollars: \$35,000

Cost Sharing: \$0.00

Total Dollars: \$35,000

11. Keywords

Lead, potable, novel, sensor, water testing

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/affordable-on-demand-testing-of-water-contamination-using-a-portable-nanoelectronic-lead-detector/>