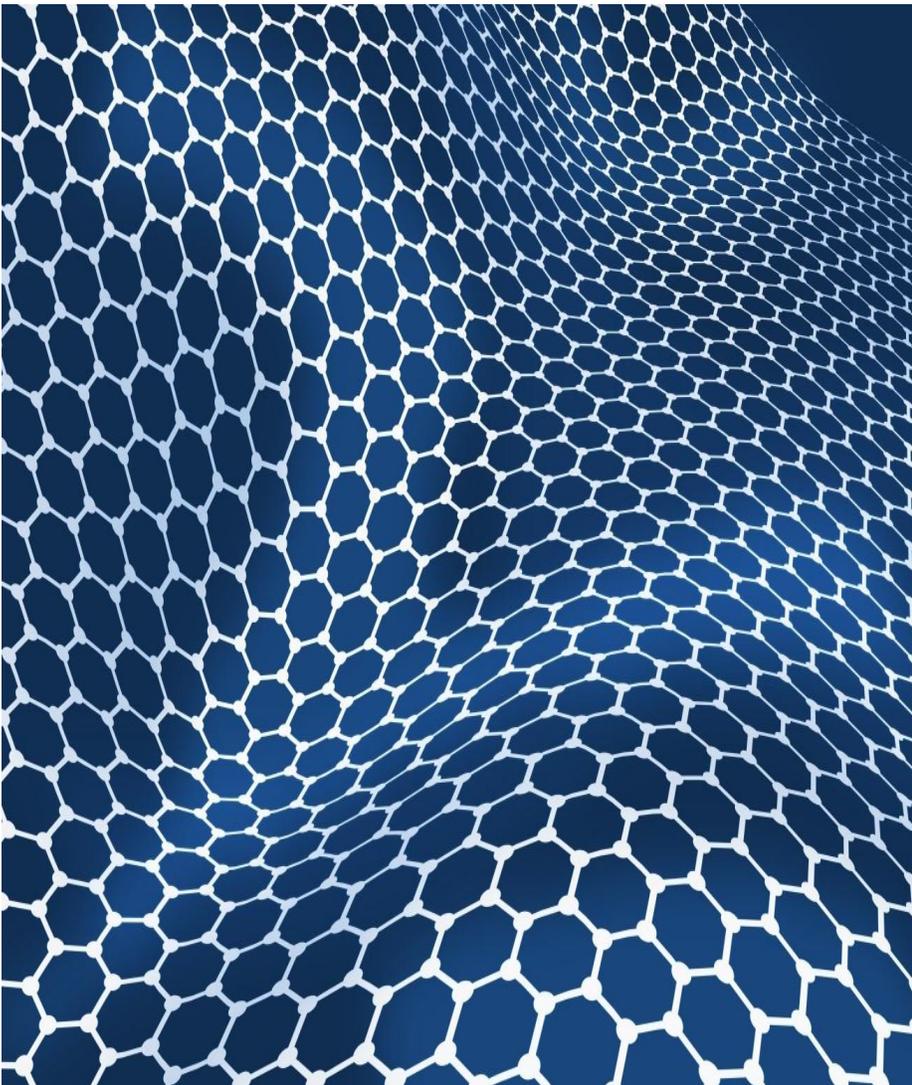


# NanoAffix Newsletter

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## NanoAffix Introduction

We are located in Milwaukee, Wisconsin near Lake Michigan which is part of the largest freshwater system in the entire world. Junhong Chen, our founder, is a leading expert in water quality. He is currently a Lead Water Strategist at Argonne National Laboratory, a U.S. Department of Energy multidisciplinary science and engineering research center, and a professor at the University of Chicago.



NanoAffix is developing a portable meter using graphene-based sensors used to test various contaminants such as lead, E-coli, and sulfur dioxide amongst others. We have a dedicated research team with decades of experience in sensor fabrication and characterization to lead NanoAffix on its way to success.

## Portable Testing Meter

Our portable handheld meter provides accurate, rapid, easy-to-use, onsite analysis of total and soluble lead quantities in drinking water taken directly from the point of use. The NanoAffix device utilizes our patented NanoAquaSense™ technology. The device is in the final stage of development with a national product launch planned in 2022.

The sensor platform technology for lead detection will be expanded to develop sensors for other toxic contaminants such as *E. Coli* and sulfur dioxide. The meter uses graphene-based sensors and can detect down to 1 part per billion (ppb) lead.

## Letter from the Founder

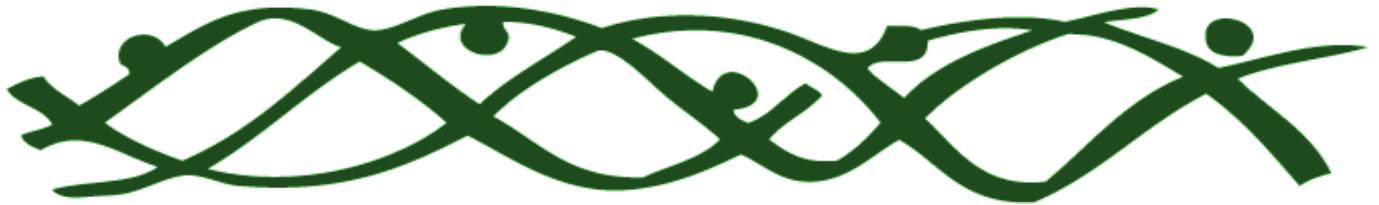
Welcome to the inaugural NanoAffix quarterly newsletter! We will strive to keep our readers updated on the latest developments at our company along with the latest in the water quality testing world. We have taken great strides in developing our sensor tests for lead, E. coli, and sulfur dioxide. This past year has been both challenging and rewarding for NanoAffix. We have brought more talent on board to drive the final product development process and launch readiness plans for 2022. We have also invested wisely in manufacturing equipment to improve our sensor production process. Additionally, we have made great strides in furthering our processes for E. coli and sulfur dioxide point-of-use detection platforms. I am pleased and excited to say that our device for testing lead in drinking water will be available in the new year. We are planning our biggest year ever for 2022 and have hopes for continued success.

Sincerely,

Dr. Junhong Chen  
CEO & Founder



# NANO AFFIX



## Mission

Our mission at NanoAffix Science is to invent the future of detecting contaminants in water, helping to ensure that everyone has access to cleaner and safer drinking water for the future.

In the short term we are launching a portable meter to detect lead in your drinking water.

Our long-term vision is to integrate this new platform technology within existing water infrastructure and equipment for continuous monitoring of a variety of contaminants found in water.



## Beta Testing Underway

The NanoAffix beta testing period is officially underway. This beta testing program gives you the opportunity to test your drinking water for FREE! This testing period also gives us the chance to make any final changes to the testing meter and sensors based on your feedback before our national product launch.

For participating in our beta testing program, you will receive a free lead test of your drinking water to confirm the results from our meter are accurate. You will have the chance to be first in line to purchase our meter at product launch while also receiving a discount coupon. Let us know if you are interested in this unique opportunity to become a beta tester!



# Future of Clean Drinking Water

Toxic contaminants are present in many drinking water sources around the world and current testing methods are either inaccurate or expensive. Lead pipe service lines are a pervasive problem with the water supply of many cities being transported through aging lead pipes that were constructed over a century ago. These aging lead service lines are relatively safe and stable until slight changes in water chemistry cause significant amounts of lead to be dislodged from the pipes. This occurred in Flint, Michigan starting in 2014 and took multiple years to resolve. People didn't know if, or how much, lead was present in their tap water.

The presence of lead in drinking water is a particularly insidious problem because very low concentrations of lead cause health issues, especially brain development issues in children. The current maximum contaminant level (MCL) determined by the Environmental Protection Agency (EPA) is 15 parts per billion (ppb). Water needs to be tested more frequently to ensure it is free of toxic contaminants and is safe to consume.

NanoAffix addresses this public health and safety problem through onsite real time water testing to detect toxic chemicals, such as lead, in drinking water. The development of point-of-use testing devices that provide rapid results at an affordable price is vital to increasing testing frequency. This product is able to detect lead in tap water, lakes, wells, homes, and municipal water distribution centers. It can generate results that reflect the concentration of total lead from water samples expressed in ppb. The test can be performed onsite and only requires about 1 minute, with the whole process taking no more than 10 minutes. This test would help individuals quickly identify consumption and monitor contamination levels. The NanoAffix handheld tester will provide customers with accurate affordable analysis of drinking water to help identify potential health issues caused by exposure to low levels of lead and other contaminants that could cause brain injury in young children.

## Graphene-Based Sensors

Graphene, a single layer of carbon atoms packed into a two-dimensional honeycomb lattice, is a promising electronic nanomaterial due to its unique structure and electronic properties. Intrinsic graphene is a zero-energy band gap semiconductor that has remarkably high electron mobility, making it attractive for sensitive, high-speed chemical/biological sensors due to its high sensitivity to electronic perturbations.

Due to the large specific surface area of graphene, it is an

ideal substrate for high density loading of target chemical probes, which promises both a low detection limit and a broad detection range for the sensor. Graphene can be obtained through various physical and chemical routes. A potential method to cost-effectively mass produce graphene-based devices is to first produce graphene oxide and then thermally reduce it to obtain reduced graphene oxide for device applications.



# The World of Sensors

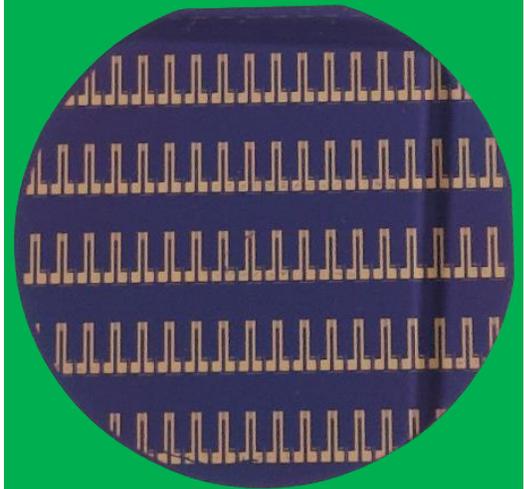
At the core of our NanoAquaSense™ water testing meter are the actual disposable sensors themselves. Sensor science and engineering is relevant to virtually all aspects of life including safety, security, surveillance, monitoring, and awareness in general. Sensors are central to industrial applications being used for process control, monitoring, and safety. The world of nanometer size sensors is rather new in the modern world of discovery and application of cutting-edge life changing technologies. Carbon nanotubes were first described about 30 years ago, and actual nano sensors have only been in development and use for a few decades. Many believe that nanotechnology and the subsequent use of nano sensors will become one of the most significant scientific and industrial transformations of the 21st century. Like electricity, automobiles, and computers, nanotechnology may change our economy and our jobs, our air and our water, our play and even our relationships.

What is most exciting in sensor research and development today? There are many significant innovations and inventions being made daily. Nanotechnology, novel materials, and smaller, smarter, and more effective electronic systems all play an important role in the future of sensors. Sensors can improve the world through diagnostics in medical applications; improved performance of energy sources like fuel cells and batteries and solar power; improved health and safety and security for people; sensors for exploring space and the known universe; and improved environmental monitoring. A vast array of technologies is currently being developed for long-term visions that include intelligent systems that are self-monitoring, self-correcting and repairing, and self-modifying or morphing. The ability for a system to see (photonic technology), feel (physical measurements), smell (electronic noses), hear (ultrasonics), communicate (smart electronics and wireless), and move (sensors integrated with actuators), is progressing rapidly. NanoAffix is proud to be part of the cutting-edge world of nano-sensors allowing us to monitor our most precious renewable resource, water.

## NanoAffix Employment

If you are interested in employment at NanoAffix, then feel free to reach out.

We are always looking for top talent to join our team!



## Preorder our Portable Meter

Be first in line and preorder our portable testing meter!

Email [sales@nanoaffix.com](mailto:sales@nanoaffix.com) for more information!

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