

OUR SERVICES

ARSOLux is an innovative, luminous water test, which detects arsenic in an environmentally friendly, economic and efficient way. The technology can assist millions of people to live healthier and better lives. ARSOLux is the first step in a sustainable arsenic mitigation process.

- Accurate, mobile and easy to perform technology
- Many parallel measurements
- No toxic components
- Integrated software

- International patents
- Expertise in some of the biggest markets for arsenic testing
- Extensive international networks and cooperations in the field of arsenic mitigation
- Backing from Germany´s largest scientific organization – the Helmholtz Association



ARSOLUX – YOUR ARSENIC DETECTION TOOL

ArsoLux is a technology that can be utilized in the process of accessing “safe and clean drinking water”, which was officially declared by the United Nations as a human right in July 2010. ARSOLux also assists in fulfilling the Millennium Development Goal to “halve, by 2015, the proportion of the population without sustainable access to safe drinking water”.

ARSOLux-Team

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ARSOLux-Inventors

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<http://www.arsolux.ufz.de/index.php?en=20706>

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ARSENIC CONTAMINATION

There is arsenic contamination in drinking water around the world. Arsenic occurrences are found naturally in sediments or they originate from industrial pollution, agriculture and mining. Skin lesions, an increased risk of cancer, amputations of limbs and even death are the consequences of drinking arsenic contaminated water on a regular basis.



ARSENIC BIOSENSOR

The arsenic resistance of the applied bacteria is used as a “bacterial switch”. The patented biosensor emits light when brought into contact with arsenic dissolved in water. The bioluminescence of the genetically modified, non-pathogenic bioreporter bacteria *E.coli* K12 is detected by a portable luminometer. The quantifiable light intensity directly correlates with the concentration of arsenic. This technology has been field tested and proven to be a suitable arsenic detection tool for tube wells. ARSOLux is a robust, precise and easy to handle water test kit. It is possible to detect the arsenic concentration directly in the field in a sustainable and simple procedure. ARSOLux is free of toxins, fast and an alternative to conventional, chemical arsenic test devices on the market.



An informative web documentation concerning ARSOLux’s activities can be found at:
<http://futurenow.dw-world.de/english/category/health/arsenic-in-the-water/>



FIELD TESTING

2005, VIETNAM MEASURING CAMPAIGN

In October 2005, the ARSOLux-inventors and their scientific staff evaluated the newly developed biosensor method in collaboration with scientists from the University of Hanoi (Vietnam) during several field tests. They analyzed about 194 water samples from wells in the Red River and Mekong deltas both by the biosensor in Vietnam and by atomic absorption spectrometer (AAS) in Switzerland. The results of the study showed that the accuracy of the biosensor measurements were similar to the much more expensive and complicated AAS laboratory method (Trang et al., 2005).

2010, BANGLADESH MEASURING CAMPAIGN

In February and October 2010, scientists of the Helmholtz Centre for Environmental Research - UFZ utilized the ARSOLux-biosensor to measure arsenic concentrations in well water in Bangladesh. The ARSOLux-team gathered knowledge about the usability of the biosensor considering geographic, geologic and climatic conditions as well as public acceptance. 450 samples in six villages were tested in the field. For several days during the campaign a team of *Deutsche Welle TV* accompanied as well as documented the ARSOLux-team and the use of the ARSOLux water test in Bangladesh (Siegfried et al., 2012).

2011, FIELD TESTS IN SAXONY, GERMANY

In October 2011, ARSOLux conducted field tests in the German state Saxony. These tests were designed to check the effects of the matrix properties of ground and surface water on the biosensor measurements. The ARSOLux-biosensor field test has been approved by the Federal Office of Consumer Protection and Food Safety (BVL) and the State Ministry of the Environment and Agriculture of Saxony (SMUL). During an inspection by Department 55 (Bio- and Genetic Engineering, Chemicals (SMUL)), the ARSOLux-team was able to ensure that the field test follows national standards and regulations.