



Isotron[®]
Advanced Polymer Composites

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EPA AWARDS CONTRACT TO ISOTRON TO ADVANCE WATER INFRASTRUCTURE SECURITY TECHNOLOGY

January 2007 (Seattle, WA) - Water security has become a national priority following the terrorist attacks of September 11, 2001. EPA has awarded Isotron a contract to develop a novel water treatment that will mitigate the threat of radionuclide contamination, such as that resulting from a terrorist release of radioactive material into the water supply. This technology is further expected to result in technology that is broadly applicable to other waterborne contaminants.

Isotron is presently developing a spiral wound electrochemical flow cell for the removal of radionuclides such as cesium-137 and strontium-90 from drinking water. The water decontamination cell will consist of a flexible electrode sandwich and a series of derivitized electrodes containing an “electrochemically switchable ion exchange” material (ESIX). The composite electrode, is rolled into a spiral wound cylinder for compactness, throughput, capacity, and ease of manufacture. Contaminated water is fed to one face of the cylinder while holding the potential of the cathode at the designated level to produce clean water at the other end of the rolled electrode. Unlike conventional ion exchange, the ESIX material can be regenerated without using a concentrated regenerant or replacing the ion exchange media.

The effort builds upon Isotron’s experience with microfluidic NiHCF electrodes, and aims to transition the technology from a microfluidic plate / frame architecture to a large-scale spiral wound form. The objectives include fabrication and demonstration of the electrochemical filter elements which matches conventional filters’ form factors while producing far less waste and operating far more efficiently than either conventional ion exchange or reverse osmosis.

Isotron Corporation is a small business specializing in advanced polymer materials for environmental remediation and disaster response. The company has been involved in large scale radionuclide decontamination as well as chemical and biological agent decontamination and protective equipment since its inception in 1986. Isotron is located in Seattle, Washington. For more information, please visit <http://www.isotron.net>.