

Disposable uranium ion detector developed

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U.S. scientists have developed a disposable sensor for detecting hazardous uranium ions with a sensitivity rivaling more sophisticated lab instruments.

University of Illinois researchers say their sensor provides a fast, on-site test for assessing uranium contamination in the environment and the effectiveness of remediation strategies.

"A unique feature of our uranium sensor is that it contains a small piece of DNA, the same basic building blocks of our genes," said chemistry Professor Yi Lu, senior author of the study. "Our sensor combines the high metal ion selectivity of catalytic DNA with the high sensitivity of fluorescence detection."

Lu, with collaborators at Oregon State University and Oak Ridge National Laboratory, assembled the uranium ion detector and tested it on soils containing varying amounts of uranium. With a sensitivity of 11 parts per trillion, the new sensor rivaled the performance of much more sophisticated laboratory instruments.

The study has been accepted for publication in the *Proceedings of the National Academy of Sciences* and is posted on the journal's Web site.

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