

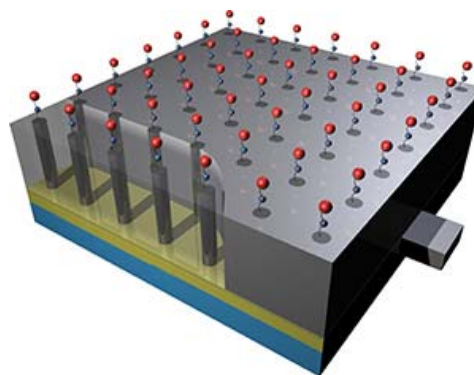
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EMSL In Brief

Environmental Molecular Sciences Laboratory

Paper on Glucose Sensor Built from Carbon Nanoelectrodes Highly Cited

Written by Environmental Molecular Sciences Laboratory users, an article on a new nanotechnology-based method for measuring blood glucose was selected as a highly cited paper by Thomson ISI's Essential Science Indicators. The article, "Glucose Biosensors Based on Carbon Nanotube Nanoelectrode Ensembles" [*Nano Letters* 4(2):191-195], was on the October 2007 citation list. The paper has been referenced 149 times since it was published in 2004. Highly cited articles are in the top 1 percent of the most-cited papers during the last decade.



An article on a nanotechnology that could provide more reliable and more affordable testing of diabetes was named a highly cited article by Thomson's ISI.

Using electrochemical detectors and other instrumentation in EMSL, Yuehe Lin and Fan Lu of Pacific Northwest National Laboratory and Yi Tu and Zhifeng Ren of Boston College describe a highly sensitive and selective sensor for measuring glucose in the presence of interfering chemicals, such as acetaminophen. The sensor is built by attaching glucose oxidase enzymes to the tips of nanotubes, which are about 10,000 times smaller in diameter than a single human hair. The nanotubes are grown on an electrode contact. When the tip of the nanotube encounters glucose in the sample, the enzymes catalyze a reaction, creating a current. The more current produced, the higher the sugar level.

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