

Pens with bio-inks can detect blood sugar levels

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In a new breakthrough, researchers at the University of California have determined that ballpoint pens filled with high-tech bio-inks can be used to detect blood sugar levels of patients. The study published in the journal *Advanced Healthcare Materials* elaborated that the team has developed high-tech bio-inks that react with several chemicals, including glucose.

Scientists envision that the new system can be used for personalized and inexpensive health monitoring. "Our new biocatalytic pen technology, based on novel enzymatic inks, holds considerable promise for a broad range of applications on site and in the field," said Mr Joseph Wang, the chairman of the Department of NanoEngineering.

As part of the study, the team pricked a subject's finger and put the blood sample on the sensor. The enzymatic ink reacted with glucose and the electrode recorded the measurement, which was transmitted to a glucose-measuring device.

The team estimates that one pen contained enough ink to draw the equivalent of 500 high-fidelity glucose sensor strips. Researchers also said that the sensors can be used to react with many pollutants, including heavy metals or pesticides.