

# IIT-Hyderabad develops a sensor to detect biomolecules

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*Suryanarayana Jammalamadaka and Dwipak Prasad Sahu showing the sensor to detect BSA.*

HYDERABAD: Researchers from the Indian Institute of Technology (IIT) Hyderabad have developed a sensor to detect biomolecules such as Bovine Serum Albumin (BSA), a protein of high interest in the field of research. This sensor, made from environmentally friendly, cheap and biocompatible material can be used to develop a sensitive, rapid and an inexpensive portable device for detecting protein, making diagnosis cheaper and faster.

A research paper on the study co-authored by Suryanarayana Jammalamadaka of the physics department at IIT Hyderabad was published recently in the journal *Scientific Reports*, for which they have also filed a patent. According to a media release by IIT Hyderabad, Human Serum Albumin (HSA) has been of great interest as the assessment of its levels in human blood and urine is important for diagnosis of a range of conditions such as malnutrition, kidney diseases and liver abnormalities.

Due to structural similarities between BSA and HSA, BSA has been used as a model protein in research.

Speaking about this research and its applications, Jammalamadaka said that several methods exist to assess the concentration of BSA but they are time-consuming and expensive, requiring skilled operators.

Jammalamadaka further said, “We have developed a memristor to detect BSA. The memristor or Resistive Random Access Memory (RRAM) is a device that can change its resistance state by changing the voltage. The switching from high resistance state to low resistance state with voltage is called SET switching and the reverse is RESET switching.” He added, “We have also tested our device for its durability and found that the device performed reliably continuously for 650 times.”

*Source: The New Indian Express*

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