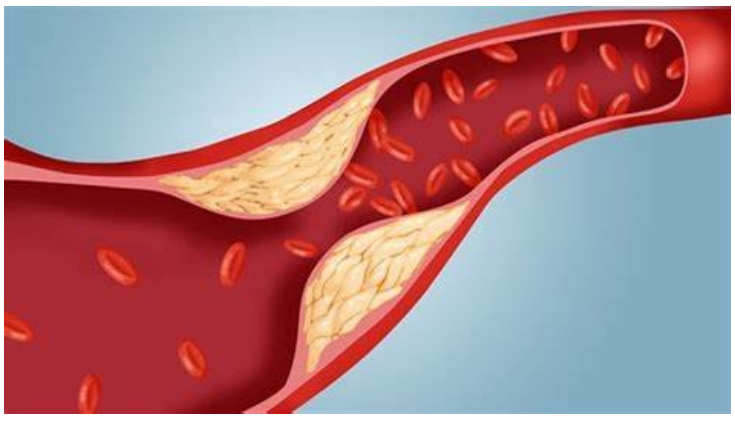
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IASST develops optical sensing platform for detecting cholesterol

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Detecting fatal diseases at their earliest symptoms is essential, as abnormal biochemical markers may sometimes accompany such disorders



A team of interdisciplinary researchers at the Institute of Advanced Study in Science and Technology (IASST) in Guwahati, an autonomous institute under the Department of Science and Technology (DST, has developed an optical sensing platform for cholesterol detection based on silk fibre functionalised using phosphorene quantum dots.

A point-of-care (POC) device has been developed in the laboratory scale for detecting cholesterol using this. It can sense cholesterol in trace amounts, even below the preferred range. It can be an efficient tool for routine monitoring of cholesterol levels in the human body.

The synthesised sensors were highly sensitive as well as selective for cholesterol detection. Furthermore, the electrical sensing platform generates no e-waste, a key advantage of the fabricated device. Both sensing platforms respond similarly to real-world media such as human blood serum, experimental rat blood serum, and milk.

A highly sensitive, eco-friendly and cost-effective optical sensing platform developed for cholesterol detection can help identify early symptoms of diseases like atherosclerosis, venous thrombosis, cardiovascular diseases, heart disease, myocardial infarction, hypertension, and cancer.