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IIT-K inks technology transfer agreement with Sensa Core for analysis of bilirubin in human blood

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Non-enzymatic electrochemical sensing strip can simultaneously detect the direct and total bilirubin in a singledrop of blood

The Indian Institute of Technology Kanpur (IIT-K) has signed a Memorandum of Understanding (MoU) with Sensa Core Medical Instrumentation for mass manufacturing and sales of a novel point-of-care technology developed at the institute for rapid analysis of bilirubin in human blood/serum along with its three variants.

The inventive technology developed at the National Centre for Flexible Electronics (NCFlexE), IIT-Kanpur discloses the fabrication of a non-enzymatic electrochemical sensing strip that can simultaneously detect the direct and total bilirubin in a single drop of blood, and provide the concentrations within a minute.

The technology licensing agreement was formally signed between IIT-Kanpur and Sensa Core. The company, based in Hyderabad, has been a leading manufacturer of ion-selective based electrolyte analysers, arterial blood gas electrolyte metabolite analysers, glucose test strips and hemoglobin test strips. With this MoU, they plan to expand their portfolio by including Bilirubin Test strips as a part of point-of-care testing and screening.

The non-enzymatic electrochemical sensor is specifically designed for accurate detection of bilirubin levels in clinical samples. Bilirubin is a pigment in our blood, detecting the level of which can help diagnose certain health conditions, such as neonatal jaundice. This sensor is expected to be used for bedside testing, in diagnostic laboratories, and even in health screening centers.

The sensor incorporates a unique five-electrode configuration that allows simultaneous detection of direct and total bilirubin on a single strip. The sensor comprises a novel material called a ‘trimetallic nanocomposite-based catalyst’, which can detect bilirubin effectively despite the presence of other components in the sample.