

USC researchers create flexible biosensor for tracking glucose

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A team of researchers from the University of South Carolina has developed an ultra-thin, flexible sensor that could be incorporated into contact lenses or on the backs of watches for real-time glucose tracking.

The biosensor has been created using nanoribbons of indium oxide, an enzyme glucose oxidase, a natural chitosan film and single-walled carbon nanotubes.

When glucose is present in a test sample, it interacts with the enzyme, setting off a short chain of reactions and ultimately creating an electrical signal. Testing showed that the device could detect a range of glucose concentrations from 10 nanomolar to 1 millimolar, which is sensitive enough to cover typical glucose levels in sweat, saliva and tears in people with and without diabetes.

The researchers suggest that the sensor could also be used for monitoring in the food and environmental sectors.