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US researchers create 3D?printed glucose biosensors

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A 3D?printed glucose biosensor for use in wearable monitors has been created by Washington State University (WSU) researchers. The work could lead to improved glucose monitors for millions of people who suffer from diabetes.

Using 3D printing, the WSU research team has developed a glucose monitor with much better stability and sensitivity than those manufactured through traditional methods.

The researchers used a method called direct-ink-writing (DIW), that involves printing inks out of nozzles to create intricate and precise designs at tiny scales. The researchers printed out a nanoscale material that is electrically conductive to create flexible electrodes.

The WSU team’s technique allows a precise application of the material, resulting in a uniform surface and fewer defects, which increases the sensor’s sensitivity. The researchers found that their 3D?printed sensors did better at picking up glucose signals than the traditionally produced electrodes.

The team is now working to integrate the sensors into a packaged system that can be used as a wearable device for long?term glucose-monitoring.