Researchers at the University of South Florida have developed a continuous glucose monitoring system based on remotely sensing the variations in multiple parameters of an implanted silicon carbide (SiC) antenna.

Continuous monitoring of blood sugar levels is necessary for patients with a high risk of hyperglycemia. All currently approved continuous glucose monitoring (CGM) systems require a disposable needle–like insertion into the body and only last up to a week. It also requires calibration four times a day with a finger stick blood sample technique. Non-invasive technologies lack accuracy due to being susceptible to external factors, making them unreliable.

Inventors at the University of South Florida have developed a novel method and device that would allow for the monitoring of glucose via an implantable passive antenna giving a reliable and accurate reading. This device is a passive antenna made from biocompatible silicon carbide (SiC), which is permanently implanted subcutaneously and communicates with an external-to-the-body transmitting antenna to detect changes in the blood glucose level. This technology would improve the overall costs and patient comfort level as it can potentially reduce painful blood collection procedures, eliminate the constant replacement of current CGM disposable needles, and will not elicit skin irritation and burning which has accompanied many of the non-contact CGM currently available.

**ADVANTAGES:**

- Eliminates constant pricking for blood samples
- No internalized power source
- Highly biocompatible

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