

## **An Ice Detection Sensor Made with Concrete**

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Formation of surface ice on roads and bridges contributes to accidents that result in hundreds of fatalities and injuries each year. A new type of embedded sensor has been developed to detect the presence of ice or water on sidewalks, roadways, runways, and bridges. The sensor is made with concrete and can be embedded into the surface being monitored. It can detect changes in electrical resistance of concrete to assess near-surface conditions. Laboratory tests indicate that sensor outputs can be used to detect the presence of ice and water on the surface. More importantly, this sensor can identify and distinguish ice that has formed on the surface from ice that may exist within near-surface concrete pores.

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