

Deployment and Field Testing of Novel Water and Ice Sensor Systems on Bridge Decks.

Principal Investigator

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Project Abstract:

This research is to deploy and test the monitoring system which has been under development for the past two and a half years at two locations. One will be at the Cloquet NATSRL research facility. The second will be on a bridge deck or approach ramp in Mn/DOT district 1 at a location to be specified. This will include a final redesign of our prototype sensor to meet installation requirements of the D-1 Mn/DOT engineers. These sensing systems are based on the measurement of the dielectric response of the sensor in contact with or close proximity to ice, water or aqueous solutions of deicing chemicals. We are using time domain reflectometry which probes the physical state of precipitation and deicing chemicals on the deck or road surface (via dielectric relaxation) using low-cost sensors.

Project Duration: 18 months