

Abstract Submitted
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Improving Corrosion Diagnostics with Terahertz Sensors.¹ STANLEY SMITH, Beaver Creek High School, LINDSAY OWENS, DOUGLAS PETKIE, JASON DEIBEL, Wright State University, DEPARTMENT OF PHYSICS, WRIGHT STATE UNIVERSITY COLLABORATION, INSTITUTE FOR THE DEVELOPMENT AND COMMERCIALIZATION OF ADVANCED SENSOR TECHNOLOGY COLLABORATION, BEAVER CREEK HIGH SCHOOL COLLABORATION — The objective of this project is to characterize metal samples using terahertz imaging to determine whether terahertz frequency radiation can detect the difference between corroded and clean metal including samples obscured with coatings of paint. A terahertz imaging system was used at incident angles of 45 and 90 degree to characterize the metal samples. Multiple imaging techniques were utilized such as time-domain amplitude imaging, single frequency amplitude imaging, and time-domain reflectometry. The images indicate that terahertz imaging does detect a noticeable difference between corroded and clean metal including measurements performed on painted samples.

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