

Abstract Submitted  
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**Non-Destructive Corrosion Detection Using Terahertz Time-Domain Spectroscopy and Imaging** LINDSAY OWENS, STANLEY SMITH, Student, DOUG PETKIE, JASON DEIBEL, Professor, WRIGHT STATE UNIVERSITY TEAM, BEAVERCREEK HIGH SCHOOL TEAM, AFRL MATERIALS DIRECTORY TEAM — The objective of this project is to detect corrosion of manufactured metal underneath paint. The system used in this research is a commercial terahertz time-domain spectroscopy and imaging system. THz signals are generated and detected using optical excitation of biased semiconductor antennas with 100 femtosecond pulses from an 800 nm laser. Spectral images were of metal samples were taken at frequencies between 100 GHz and 1 THz using a variety of imaging modalities in both transmission and reflection. Preliminary imaging data shows a clear distinction between corroded and clean metal concealed underneath a coat of paint.

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