

Michigan State University
College of Engineering; Dept. of Electrical and Computer Eng.
Alternate ECE 480
Research Project

Sponsoring Company/ Organization: ECE, MSU

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Simulation software for crack detection in materials

Cracks in structures such as airplanes can propagate and lead to catastrophic failures. It is critical to detect cracks in early stages. In order to design systems for detecting cracks we need to understand the relation between crack size and local electrical resistance of materials. In this project, a simulation software will be developed for crack length measurement in materials using radio frequency (RF) systems. Using simulations, correlation between the electrical resistance and the crack size and geometry will be constructed. The results will be very useful to prevent failure of space-based systems.