

Article

# Atmospheric corrosion detection of field-exposed metallic materials by image recognition

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**Abstract:** Our group has focused on the field corrosion detection by using image recognition in the past 30 years. Atmospheric corrosion is accompanied by the changes in surface structure, morphology, and composition. These changes can be recorded by a variety of image acquisition devices that export digital images in grayscale or true color to a detector. Information regarding corrosion type and extent can be extracted with image processing methods. Digital image processing systems used to assess material degradation are briefly illustrated, and the algorithms developed to process metallic materials degradation images are described. Future work that will augment the present methods of evaluating material degradation are discussed.

**Keywords:** Atmospheric corrosion; image recognition; pitting corrosion; Fuzzy K-S entropy

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