

Assessing damage evolution in organic coatings using different theoretical and experimental local or global electrochemical techniques

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Abstract

Degradation of protective organic coatings can be characterized and quantified by using different approaches. To perform a reliable assessment one must have experimental techniques that measures and characterizes the state of the coating and the metal/coating interface in real time. Exposure methods and electrochemical experimental techniques have been successfully used. However, unification of various multi-scale local and global electrochemical techniques to obtain qualitative and quantitative information about coating changes and corrosion process(es) in real time is at best incomplete or absent. To fill this knowledge gap we investigate the damage evolution of organic coatings using several local and global electrochemical techniques and attempt to demonstrate the possibility of unifying them to study damage assessment.