

Abstract Submitted  
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**Pigment dispersion And Optical property of a TiO<sub>2</sub> pigmented epoxy coating** HAIQING HU, NIST, LIPIIN SUNG, XIAOHONG GU, CYRIL CLERICI, DEREK HO, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY TEAM — The dispersion of pigments in coatings is qualitatively known to affect the appearance and service life of the products. How to characterize pigment dispersion and relate the dispersion with the performance properties still remains challenging. A set of TiO<sub>2</sub> pigmented epoxy coatings with different states of pigment dispersion was chosen to investigate the effect of pigment dispersion on surface morphology and appearance as well as the weathering durability. Neutron scattering (USANS) and Microscopy (AFM, LSCM) were used to characterize surface morphology and microstructure of unexposed and weathered coatings. Surface optical scattering (OS) and commercial gloss measurements were carried out to study the corresponding optical properties. Preliminary results show that the pigment dispersion affects surface morphology and subsurface microstructure, and consequently affect the optical properties of a coating. Extensive analyses of microscopy, optical scattering, and other results are ongoing to better correlate the pigment dispersion to structure-performance properties.

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