## **Accepted Manuscript**

Morphology and Electrical Conductivity of Polyaniline Coating on Acetate Film

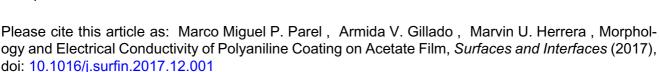
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PII: S2468-0230(17)30154-2 DOI: 10.1016/j.surfin.2017.12.001

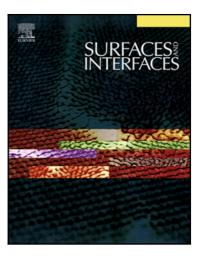
Reference: SURFIN 164

To appear in: Surfaces and Interfaces

Received date: 15 November 2017 Accepted date: 3 December 2017



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ACCEPTED MANUSCRIPT

Morphology and Electrical Conductivity of Polyaniline Coating on Acetate

**Film** 

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Acetate films were coated with polyaniline molecules using the successive ionic layer

adsorption and reaction (SILAR) method. In this method, polyaniline molecules are

synthesized as they are being coated on the acetate film. Fourier transform infrared

(FTIR) spectroscopy shows the existence of molecular vibrations attributed to the

presence of polyaniline molecules. A model was created to explain the structures seen in the Scanning Electron Microscopy (SEM) micrographs. A four-point probe measures

the surface conductivity of the samples. The surface conductivity was found to

significantly increase with more cycles of dipping.

Keywords: polyaniline; SILAR; coating; conducting polymer; acetate; surface

conductivity; SEM; FTIR

1. Introduction

The use of conducting polymer [1-5] in coating substrates hybridizes the

mechanical property of the substrate and the electrical property of the polymeric

coating. For example, polyaniline-coated acetate film acquires the flexibility of the film

and the conductivity of the conducting polymer. This flexible conducting film has

promising application on the fabrication of electromagnetic interference shield,

electrostatic discharged materials, sensors, supercapacitors, and batteries.

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