

Accepted Manuscript

Stability and performance of organic-inorganic thin films on polymer substrates

Martin Caron, Oleg Zabeida, Jolanta Ewa Klemberg-Sapieha, Ludvik Martinu

PII: S0257-8972(16)31066-0
DOI: doi: [10.1016/j.surfcoat.2016.10.069](https://doi.org/10.1016/j.surfcoat.2016.10.069)
Reference: SCT 21714

To appear in: *Surface & Coatings Technology*

Received date: 27 August 2016
Revised date: 11 October 2016
Accepted date: 24 October 2016



Please cite this article as: Martin Caron, Oleg Zabeida, Jolanta Ewa Klemberg-Sapieha, Ludvik Martinu, Stability and performance of organic-inorganic thin films on polymer substrates, *Surface & Coatings Technology* (2016), doi: [10.1016/j.surfcoat.2016.10.069](https://doi.org/10.1016/j.surfcoat.2016.10.069)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Stability and performance of organic-inorganic thin films on polymer substrates

Martin Caron, Oleg Zabeida, Jolanta Ewa Klemberg-Sapieha, Ludvik Martinu¹,

Department of Engineering Physics, École Polytechnique de Montréal, H3C 3A7

Montréal, Québec, Canada

October 26, 2016

Abstract

The use of polymer instead of glass is increasingly frequent, ranging from ophthalmic applications to electronic devices, displays and others. In the case of optical interference filters on plastic substrates (e.g., antireflective coatings) the performance of the device is limited by the coating-substrate compatibility (e.g., thermal expansion coefficient of the substrate about 100 times that of glass). In the present work, we demonstrate significantly improved resistance to temperature and humidity variation and higher elastic recovery of organic-inorganic SiO₂ and ZrO₂ coatings compared to their inorganic counterparts. Specifically, organic-inorganic coatings prepared by ion beam assisted chemical vapour deposition

¹ Corresponding author: Ludvik.martinu@polymtl.ca

Download English Version:

<https://daneshyari.com/en/article/5464768>

Download Persian Version:

<https://daneshyari.com/article/5464768>

[Daneshyari.com](https://daneshyari.com)