

# Accepted Manuscript

Full Length Article

The enhanced abrasion resistance of an anti-fingerprint coating on chrome-plated brass substrate by integrating sputtering and atmospheric pressure plasma jet technologies

Chi-Liang Ko, Yu-Lin Kuo, Wen-Jen Lee, Hsing-Ju Sheng, Jhao-Yu Guo

PII: S0169-4332(18)31028-6  
DOI: <https://doi.org/10.1016/j.apsusc.2018.04.075>  
Reference: APSUSC 39074

To appear in: *Applied Surface Science*

Received Date: 29 December 2017  
Revised Date: 14 March 2018  
Accepted Date: 8 April 2018

Please cite this article as: C-L. Ko, Y-L. Kuo, W-J. Lee, H-J. Sheng, J-Y. Guo, The enhanced abrasion resistance of an anti-fingerprint coating on chrome-plated brass substrate by integrating sputtering and atmospheric pressure plasma jet technologies, *Applied Surface Science* (2018), doi: <https://doi.org/10.1016/j.apsusc.2018.04.075>

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.



**The enhanced abrasion resistance of an anti-fingerprint coating on  
chrome-plated brass substrate by integrating sputtering and atmospheric  
pressure plasma jet technologies**

Chi-Liang Ko<sup>1</sup>, Yu-Lin Kuo\*<sup>1</sup>, Wen-Jen Lee<sup>2</sup>, Hsing-Ju Sheng<sup>1</sup>, Jhao-Yu Guo<sup>1</sup>

Department of Mechanical Engineering, National Taiwan University of Science and  
Technology, Taipei, 10607, Taiwan.

Department of Applied Physics, National Pingtung University, Pingtung 912, Taiwan.

**Abstract**

We demonstrate the procedure of fabricating an anti-fingerprint coating on plated-Cr/brass substrates by the combination of two processes: 1) Sputtering and 2) Atmospheric pressure plasma jet (APPJ). APPJ surface treatment on sputtered-SiO<sub>x</sub> glue layer on plated-Cr/brass substrate is conducted to improve its surface property to be hydrophilic for chemical bonding with an anti-fingerprint agent (AF-C01). The results show that the surface energy of original substrate are evolving from 44.2 mN/m to 60.8 mN/m and 76.9 mN/m for the sputtered-SiO<sub>x</sub> film and APPJ-treated SiO<sub>x</sub> film, respectively. Subsequently, the spin-coating process using a commercial (AF-C01 agent for the prepared sample is implemented. The hydrophobicity of anti-fingerprint characteristics for all of the samples with a quite low surface energy around 10.5 mN/m are obtained. For practical evaluation of

Download English Version:

<https://daneshyari.com/en/article/7833713>

Download Persian Version:

<https://daneshyari.com/article/7833713>

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