

Accepted Manuscript

Title: Atmospheric Deposition Process for Enhanced Hybrid Organic-Inorganic Multilayer Barrier Thin Films for Surface Protection

Authors: Mohammad Mutee ur Rehman, Kwang Tae Kim, Kyoung Hoan Na, Kyung Hyun Choi



PII: S0169-4332(17)31640-9
DOI: <http://dx.doi.org/doi:10.1016/j.apsusc.2017.05.261>
Reference: APSUSC 36196

To appear in: *APSUSC*

Received date: 13-2-2017
Revised date: 27-4-2017
Accepted date: 31-5-2017

Please cite this article as: Mohammad Mutee ur Rehman, Kwang Tae Kim, Kyoung Hoan Na, Kyung Hyun Choi, Atmospheric Deposition Process for Enhanced Hybrid Organic-Inorganic Multilayer Barrier Thin Films for Surface Protection, Applied Surface Science <http://dx.doi.org/10.1016/j.apsusc.2017.05.261>

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.

Atmospheric Deposition Process for Enhanced Hybrid Organic-Inorganic Multilayer Barrier Thin Films for Surface Protection

Mohammad Mutee ur Rehman¹, Kwang Tae Kim¹, Kyoung Hoan Na², Kyung Hyun Choi*

*¹ Department of Mechatronics Engineering, Jeju National University, Republic of Korea

² Department of Engineering, Dankook University, Republic of Korea

* E-mail: amm@jejunu.ac.kr

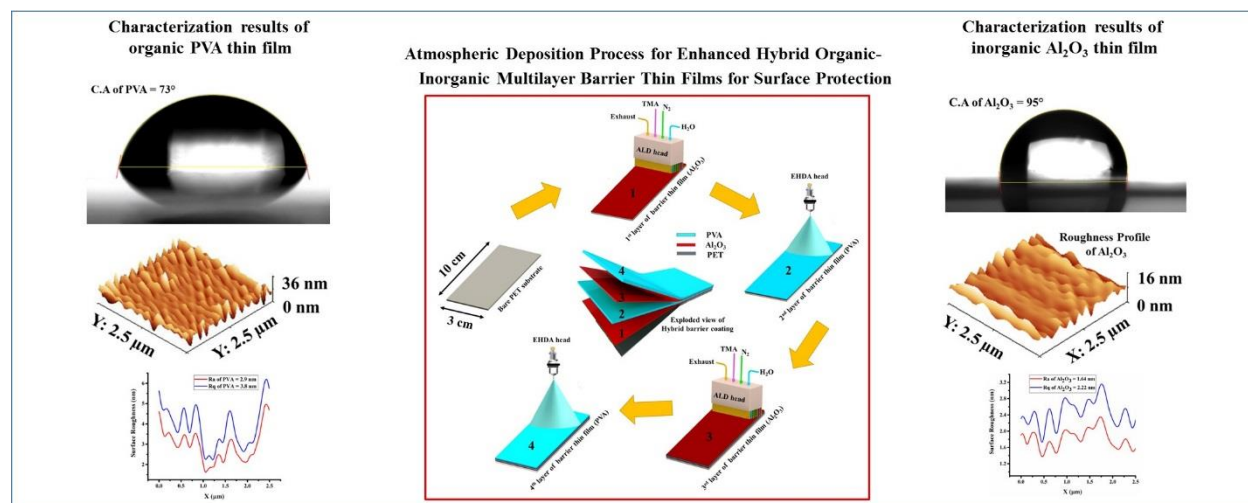
* Phone: +82-64-754-3713

* Fax: +82-64-752-3174

Highlights A hybrid organic-inorganic multilayer barrier thin film is reported for the protection of electronic devices

1. The organic thin films of PVA were developed by using roll to roll electrohydrodynamic atomization (R2R-EHDA)
2. Inorganic thin film of Al_2O_3 was deposited by using roll to roll spatial atmospheric atomic layer deposition (R2R-SAALD)
3. Use of these two technologies together is very useful for the cost efficient and mass production of such hybrid barrier layers
4. Atomically thin and uniform films of Al_2O_3 reduced the roughness of PVA thin film while PVA elongated the delay time for water vapors to reach the substrate.

Graphical abstract



<InlineShape1>

Download English Version:

<https://daneshyari.com/en/article/5347543>

Download Persian Version:

<https://daneshyari.com/article/5347543>

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