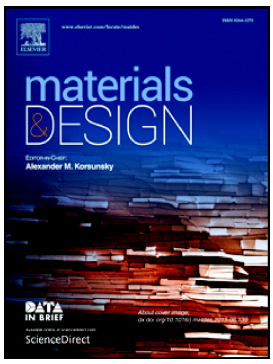
Accepted Manuscript



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PII: S0264-1275(17)31040-7
DOI: doi:10.1016/j.matdes.2017.10.079
Reference: JMADE 3488

To appear in: *Materials & Design*

Received date: 11 October 2017
Accepted date: 28 October 2017

Please cite this article as: Shusen Peng, Yongcun Ma , Fabrication of hydrophilic and oil-repellent surface via CF4 plasma treatment. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jmade(2017), doi:10.1016/j.matdes.2017.10.079

Fabrication of Hydrophilic and Oil-Repellent Surface via CF_4 Plasma Treatment

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Abstract:

Special wetting surface with hydrophilic and oil-repellent characteristic is successfully prepared by treating hydrophilic PEGylated surface with CF_4 plasma. Wettability and structure of the modified PEGylated polymer surfaces are investigated by contact angle (CA) measurements and X-ray photoelectron spectroscopy (XPS). The results of contact angle measurements show that water CA and hexadecane CA have different dependences with CF_4 plasma treating time. After a 5 min treatment with CF_4 plasma, the difference between water and oil CA reaches a maximum value on the modified PEGylated surface, wherein water and oil CA is 30.7° and 60.7°, respectively. We believe the technique can be further used for construction of textiles with anti-contamination and easy-decontamination properties.

Keywords*: CF_4 plasma; Hydrophilic; Oil-repellent*