

Various surface functionalization of ultra-high-molecular-weight polyethylene based on fluorine-activation behavior

Baoyin Li^a, Jiahui Zhang^a, Mengmeng Ren^a, Peng Wu^a, Yang Liu^a, Teng Chen^a, Zheng Cheng^a, Xu Wang^{a,b}* and Xiangyang Liu^a*

^a College of Polymer Science and Engineering, State Key Laboratory of Polymer Material and Engineering, Sichuan University, Chengdu 610065, People's Republic of China.

^b Department of Chemical Engineering, University of New Brunswick, Fredericton, NB E3B5A3, Canada.

* Corresponding author Tel.: +86 28 85403948; fax: +86 28 85405138.

E-mail address: lxy6912@sina.com (Xiangyang Liu), wx19861027@163.com (Xu Wang).

Supporting Information

1. Surface roughness (Ra)

The 3D profiles of the UHMWPE surface are respectively given in Figure 1s. The height profiles along the diagonal (red line) are also shown in Figure 1s (d). The surface roughness (Ra) is calculated from the height profiles. The surface Ra value for virgin, F-4.0% and OF-4.0% is located between 0 and 1.0 μm , and it objectively illustrated that the surface roughness still remained before and after fluorination.

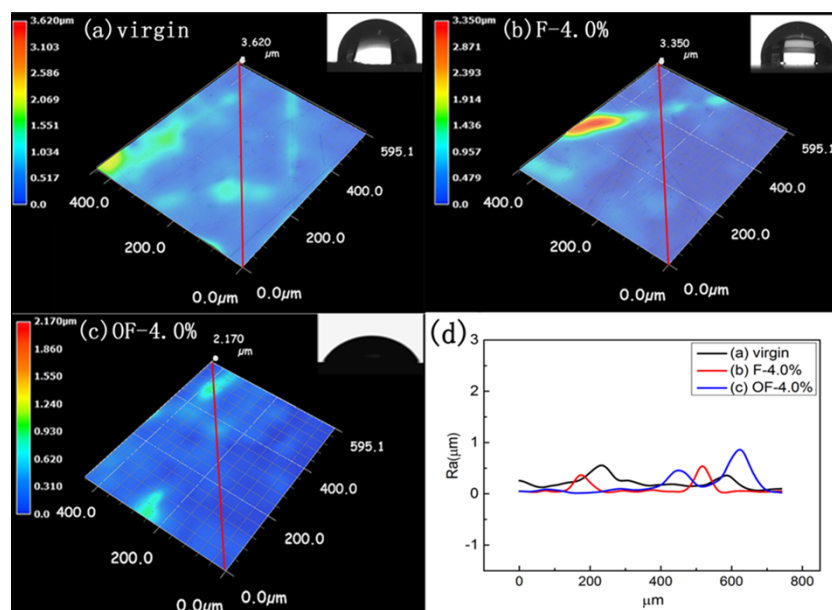


Figure 1s. The surface roughness of (a) virgin, (b) F-4.0%, (c) OF-4.0% samples and (d) the height profiles along the diagonal (red line).