

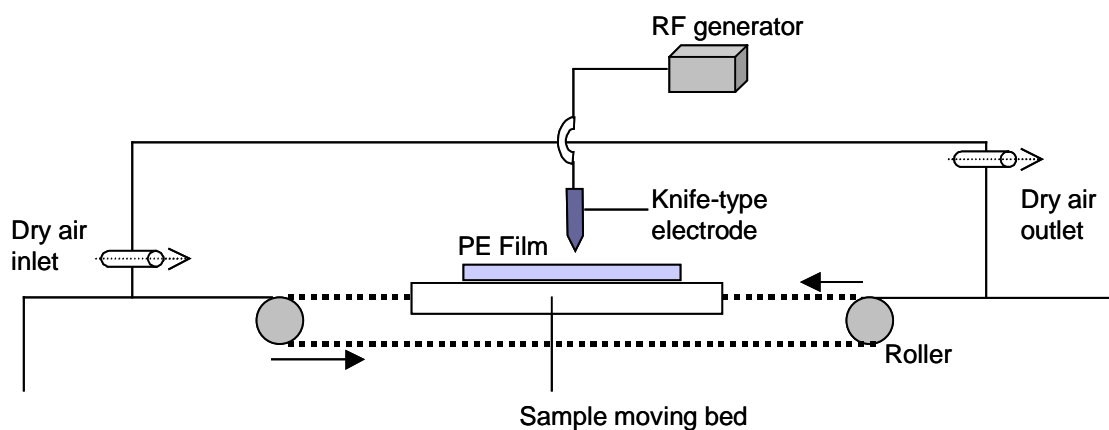
## First Preparation of Biotinylated Gradient Polyethylene Surface to bind Photoactive Caged Streptavidin

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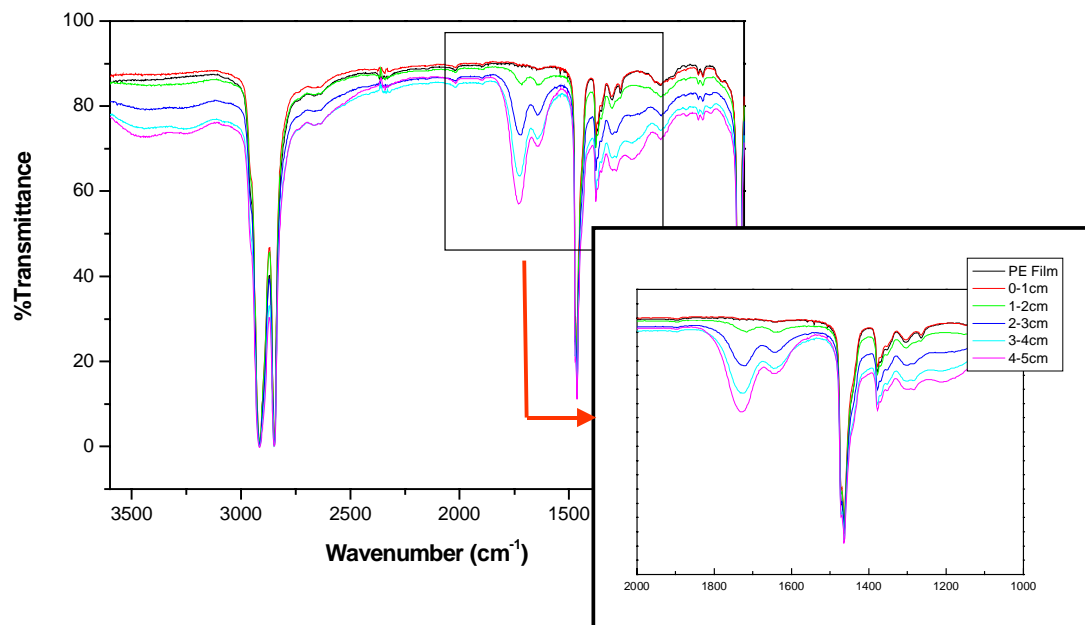
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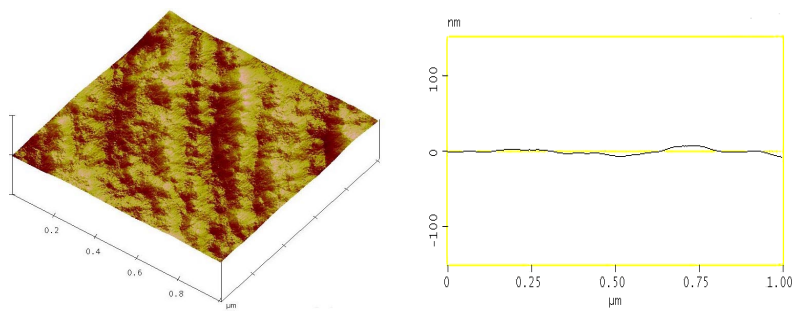
e-mail: hblee@kriict.re.kr



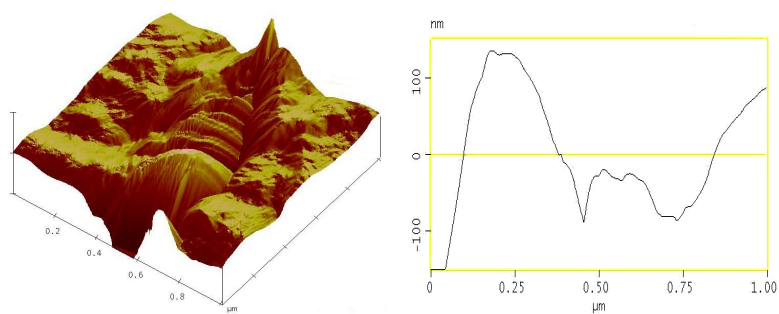
**Figure S1.** Schematic diagram of the corona discharge apparatus.



**Figure S2.** FTIR-ATR spectra along the PE length after corona treatment.

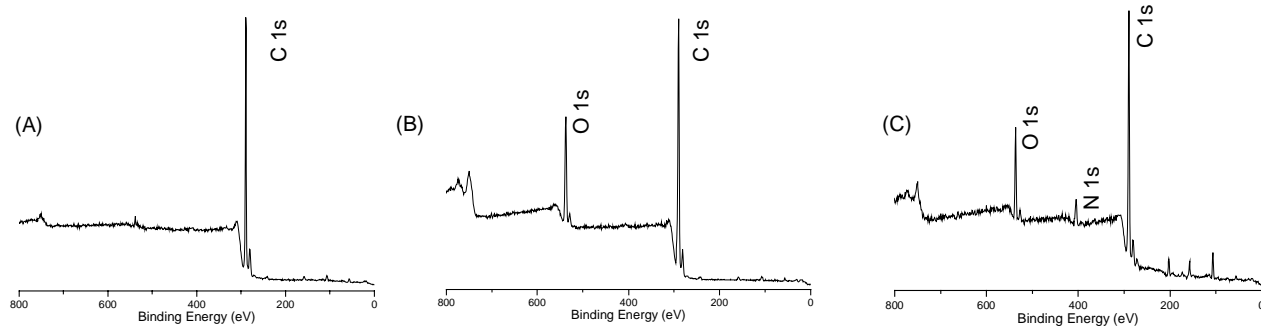


(A)

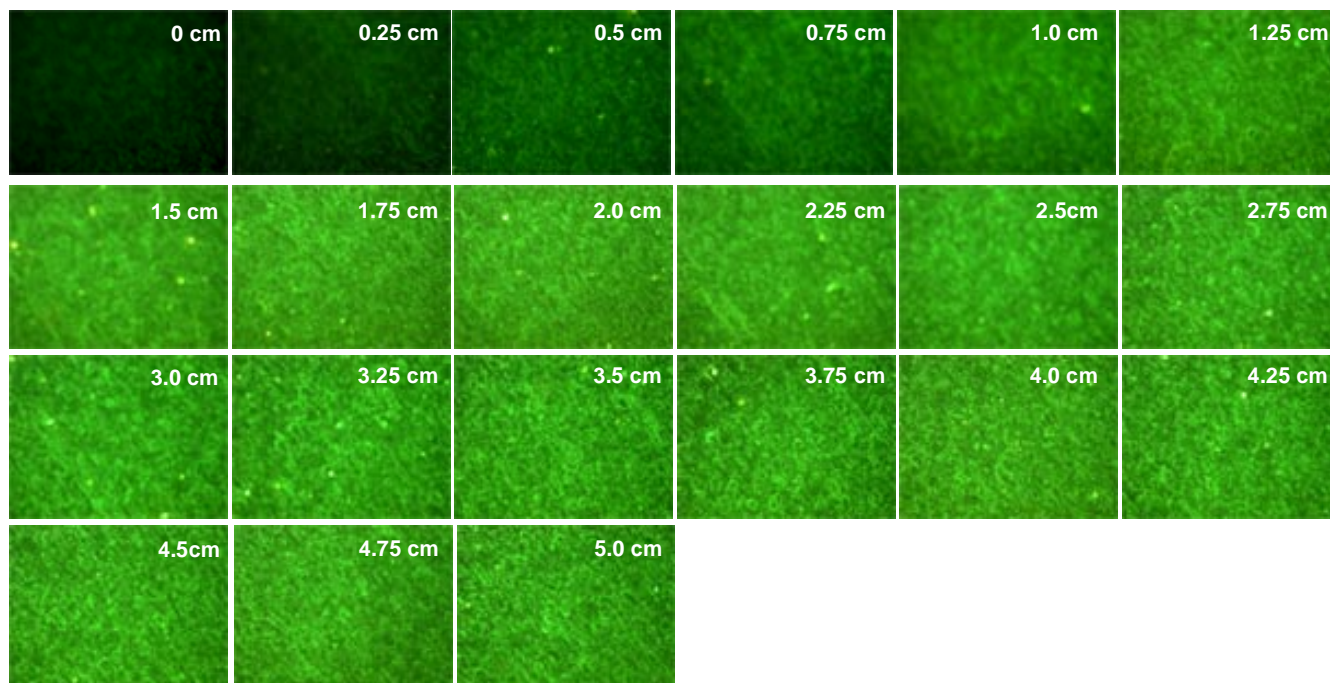


(B)

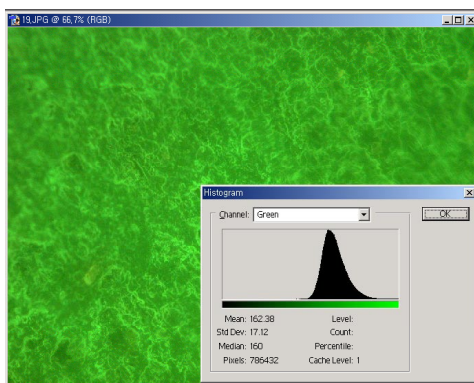
**Figure S3.** AFM images at the position (A) 0.5 cm and position (B) 4.5 cm after corona treatment.



**Figure S4.** ESCA survey scan spectra (A) untreated PE, (B) corona treated PE, and (C) PEI modified PE at the position 4.5 cm.



(A)



(B)

**Figure S5.** (A) Fluorescence microscope images of PE surface along the PE length after photoirradiation and (B) histogram for fluorescence intensity at position 5 cm.