

## Surface oxidation effect for protein patterning on the glass

유충한, 채희엽\*  
성균관대학교 화학공학과  
(hchae@skke.edu\*)

The protein patterning is crucial technique in the bio-technology of micro-scale, such as diagnostic system, bio-sensor and high throughput screening. The cost for bio-device and analysis is cut down by reducing amount used of sample. Moreover, proteins can be immobilized on the only desired location through the various patterning techniques. However, non-specific binding and sensitivity are recognized as challenges in the protein patterning technique.

It is demonstrated that the O<sub>2</sub> plasma oxidation is the superior technique for the protein immobilization according to comparison with various oxidation techniques in this work. Self assembled monolayer is formed with 3-aminopropyltriethoxysilane (3-APTES) on the glass surface oxidized. 3-APTES immobilizes proteins at the ends of the molecules. Therefore, quality of 3-APTES self assembled monolayer is determined according to quality of oxidation. A various techniques of surface oxidation were compared to determine the most appropriate technique of all. Thereby the O<sub>2</sub> plasma oxidation turns out the superior technique in the efficiency and economical feasibility through the analysis of fluorescent microscope.