

Functionalization of AAO(Anodic Aluminum Oxide) by a chemical vapor deposition method in the application of interferometric biosensor

입성혁, 안희철, 최정민, 김병우*

성균관대학교 화학공학과

(bwkim@skku.ac.kr*)

Biomonitoring with high sensitivity has an increasingly important role in the medicine, environmental diagnostics, food industries. Fluorescence proteins such as GFP were employed to detect low enzyme activity. However, well organized micro-, nano- patterned substrate also provides high sensitivity. AAO(Anodic Aluminum Oxide) has been used as carbon nanotube, metal nanodot and so forth. Structured characteristics and growth kinetics of anodic oxide films on aluminum are determined by forming conditions. Application of the interferometric biochip has been done in this study by using the AAO in order to overcome the non-uniformity in the pore-size distribution of the wet etched silicon surface. Organosilane compounds in the fabrication of interfaces between biomaterials and inorganic materials are practically important materials as the interface. Recently, a chemical vapor deposition (CVD) method was proposed for more effective method obtaining a monolayer comparing with those in liquid phase. In this research, the formation of organosilane SAMs by a CVD method on the AAO surface to detect target proteins, was investigated.