

【T-06】

Thermal and Photodecomposition of (Perfluoroalkyl)trichlorosilane (FTS) on Silicon

이정욱, 박미현, 성명모
국민대학교 화학과

Self-assembled monolayers(SAMs) are thin organic films which form spontaneously on solid surfaces. They are the subject of intense study because of their potential utility in such applications as wetting, adhesion, lubrication, and high-resolution lithography. One of the important considerations in the application of SAMs is their thermal stability. To successfully incorporate these films, it is necessary for the films to With stand the temperatures.

The thermal and photo decomposition of perfluorotrichlorosilane (FTS)-based self-assemble monolayers (SAMs) in air have been studied using atomic force microscopy(AFM), X-ray photoelectron spectroscopy (XPS) and contact angle analysis.

The thermal decomposition is found that FTS monolayers are stable in air up to about 400°C. The photo decomposition is found that FTS monolayers are stable under UV ($\lambda_{\max}=254\text{nm}$) irradiation in air above 30min while the OTS monolayers decompose in air about 4min.