

(SP-06)

## Room Temperature Deposition of $ZrO_2$ thin film by using UV-enhanced Atomic Layer Deposition

강문철, 성명모\*  
국민대학교 화학과

We have deposited  $ZrO_2$  thin films on Si substrates at room temperature by UV-enhanced atomic layer deposition using zirconium(IV) tert-butoxide and water. The atomic layer deposition relies on alternate pulsing of the precursor gases onto the substrate surface and subsequent chemisorption of the precursors. In many cases, the surface reactions of the atomic layer deposition are not completed at low temperature.

In this experiment, the surface reactions of the atomic layer deposition of the  $ZrO_2$  thin films were enhanced by using UV irradiation at room temperature. The structure, chemical composition, morphology and thickness of the  $ZrO_2$  thin films were investigated by ellipsometry, XRD, XPS, AFM and TEM.