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Initil ALD reactions of HfO_2 on Si(001) surface by in-situ synchrotron radiation photoelectron spectroscopy

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Atomic Layer Deposition (ALD) is a deposition technique of ultra-thin films using by surface reactions between substrate surfaces and deposited compounds that is capable of controlling the growth to the atomic layer thickness. The unique process of ALD has been mainly applied to the growth of ultra-thin films under nm scale and took its place only recently as an important technique in the field of semiconductor devices because of scale-down tendency. Therefore, the understandings of initial atomic layer growth and reaction mechanisms, interfacial interactions between substrates and films, and the electronic structures have been essentially important research topics. In this study, we investigate atomic layer growths, interfacial interactions, and electronic structures in initial ALD reaction of HfO_2 layer on H_2O/Si(001) surface using by *in-situ* step-by-step X-ray photoelectron spectroscopy (XPS) and synchrotron radiation photoelectron spectroscopy (SRPES).

[참고문헌]

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