질소 처리를 통한 Hafnium silicate 박막의 특성 평가

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The Study of Hafnium silicate by Nitrogen Annealing Treatment

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Abstract : We investigated the characteristics of the Hafnium silicate (Hf-silicate) film which is grown by ALD (atomic layer deposition). The Hf-silicate films that were annealed by the RTP. The physical and electrical properties of nitrided Hf-silicate films, incorporated by NO gas and NH_3 gas annealing, were investigated by XPS, TEM and I-V measurement. We confirmed the nitrogen incorporation during NO gas annealing treatment effectively enhances the thermal stability of Hf-silicate. The tendency of nitridation in NO gas and NH3 is different. Leakage current is improved in post NO gas annealing.

Key Words : Hafnium silicate, High-k, ALD