

Abstract Submitted  
for the GEC11 Meeting of  
The American Physical Society

**3D feature profile simulation based on realistic surface kinetic modeling of fluorocarbon plasma etch process** WON-SEOK CHANG, DEUK-CHUL KWON, NFRI, DONG-HUN YU, Kyung-won Tech, DEOG-GYUN CHO, YEONG-GEUN YOON, JIN-TAE KIM, Chonbuk National University, JUNG-SIK YOON, NFRI, YEON-HO IM, Chonbuk National University — Recently, one of the critical issues in the etching processes is to achieve ultra high deep contact hole without anomalous behaviors such as sidewall bowing and twisting. To address this issue, we have developed a 3D topography simulator using the level set algorithm based on new memory saving technique, which is suitable in the contact hole etching. For this feature profile simulation, we performed a fluorocarbon plasma-surface kinetic modeling based on our experimental data, a polymer layer based this model was proposed as considering material balance of deposition and etching through steady-state FC layer. Finally, the modeling results showed good agreements with experimental data and could be used successfully for 3D etch profile simulations with consideration of polymer layer.

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Date submitted: 18 Jul 2011

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