Comparative Evaluation of SiO₂ Atomic Layer Etching Using NF₃ and SF₆ Gases via a Combined Thermal and Remote Plasma Approach

Min Kyun Sohn[†], Jieun Kim[†], Sun Kyu Jung, Min-A Park, Jin Ha Kim, Jaeseoung Park, Subin Heo, Sang-Hoon Kim, Jeong Woo Park, Seong Hyun Lee^{*}, and Dongwoo Suh^{*}

Electronics and Telecommunications Research Institute (ETRI), Daejeon, Republic of Korea Tel.:82-042-860-6235, E-mail: <u>dalsimlee@etri.re.kr</u> / <u>dwsuh@etri.re.kr</u>

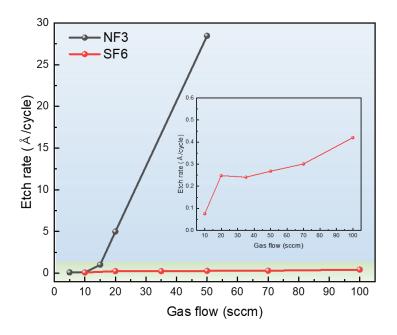


Figure 1. Etch rate as a function of gas flow rate for NF₃ (black) and SF₆ (red). The green shaded area represents etch rates corresponding to the atomic layer etching (ALE) regime, while the blue area indicates the conventional plasma etching regime, characterized by higher EPC. The inset shows an enlarged view of the SF₆ etch rate.

Acknowledgments This work was supported by the Electronics and Telecommunications Research Institute(ETRI) grant funded by the Korean government [25ZH1240]