Abstract Submitted
for the GEC18 Meeting of
The American Physical Society

**The Influence of $N_2$ gas at wafer-less dry cleaning process in mass production system** KYUMIN CHO, HYUNGSEOK CHOI, YUNSUNG LEE, Samsung Electronics Device Solution — Wafer-Less Dry Cleaning(WLDC) is a process that maintain chamber surface stability as well as other contaminates after etch process are carried out in the chamber. It is important to maintain constant inner circumstance for product quality in mass production system. WLDC has popularly used fluorocarbon and $O_2$ gas to eliminate byproducts. Recently coating materials of etch chamber normally use $Y_2O_3$ and $Al_2O_3$. But continuous fluorination of coating surface by fluorocarbon and $O_2$ gas influence plasma elements and stability. Although $O_2$ gas is good at chamber cleaning, it has caused side effect. Experimentally $O_2$ addition in fluorocarbon gas base accelerates poly and oxide etch rate. It means chamber wall surface rapidly can be transformed. The focus of our study is on effect of process gas at WLDC for long lasting and constant plasma status. Through gas composition experiments, we have focused on researching role of $N_2$ gas for replacing $O_2$ gas and reducing side effects despite of long term use.

Kyumin Cho
Samsung Electronics Device Solution

Date submitted: 14 Jun 2018 Electronic form version 1.4