We studied the measurement of sputtering yield of RF O$_2$-Plasma treatment on MgO protective layer in AC-PDP by using Focused Ion Beam System. MgO layer of 1000Å thickness was deposited on ITO coating on glass substrates by using an electron gun evaporator at 200℃ at vacuum environment, 2.4×10$^{-6}$Torr. Thereafter MgO samples were annealed at 300℃ for 30 minutes. RF O$_2$-Plasma was treated the surface of the MgO layer. Oxygen gas was fed for RF discharge and the process pressure was 110mTorr. The RF power and time was 50W and 10 minutes$^{(1)}$, respectively. An 1000Å thickness Al layer was deposited on the MgO layer in order to avoid the charging effect of the MgO layer during measurements of the sputtering yields.

A Ga liquid metal ion source is used as the focused ion beam (FIB) source. The ion beam was focused by the double einzelt lens system, and a deflector was employed to scan ion beams on the surface of MgO layer. The sputtering yield of the MgO layer is determined by using the analyzed probe current, the secondary electron current, and the net current. When the acceleration voltage of the FIB system was applied by 10kV and the emission current 5μA was detected at faraday cup. We obtained result that the sputtering yield of the untreated sample and treated sample were 0.33 and 0.20, respectively.

[참고문헌]
1. 정재천, “산소 플라즈마 처리 후의 이차전자방출계수(γ)를 이용한 MgO보호막의 일함수($\Phi_\omega$)변화” 한국전기전자재료학회논문지, 1226-7945, 제 18권3호, pp.259-263 (2005).