

## Supplementary Information

### **Improved Electrical Performance of Ultra-thin $\text{Be}_x\text{Mg}_{1-x}\text{O}$ Films Using Super-cycle Atomic Layer Deposition**

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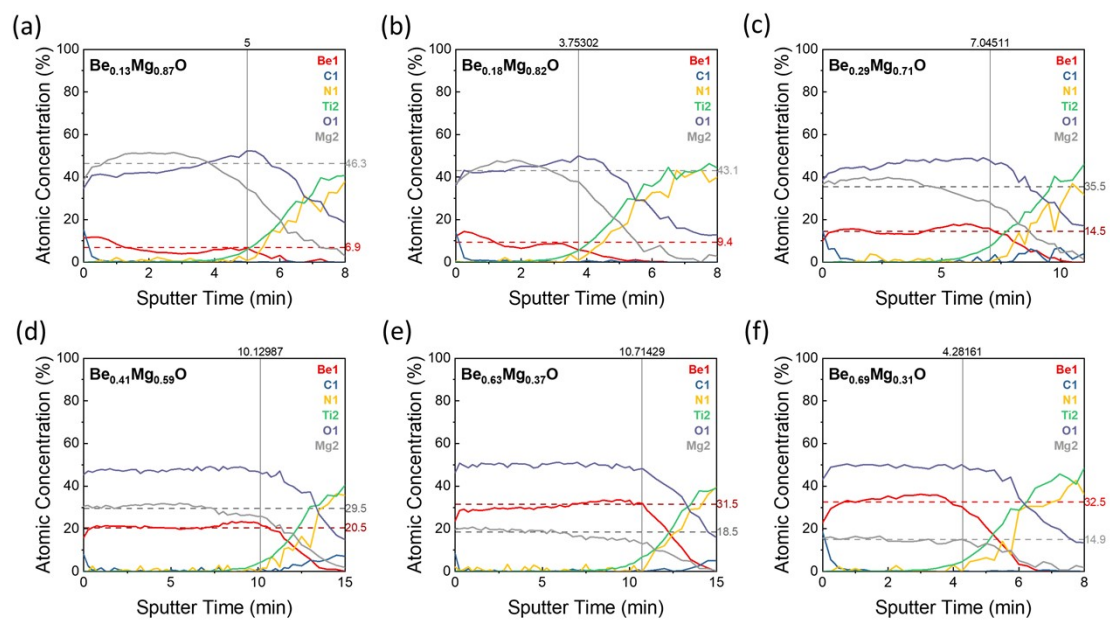


Fig. S1 AES depth profiles of BeMgO films with varying sub-cycle ratios, including Be:Mg ratios of (a) 1:5, (b) 1:3, (c) 1:2, (d) 1:1, (e) 2:1, and (f) 3:1.