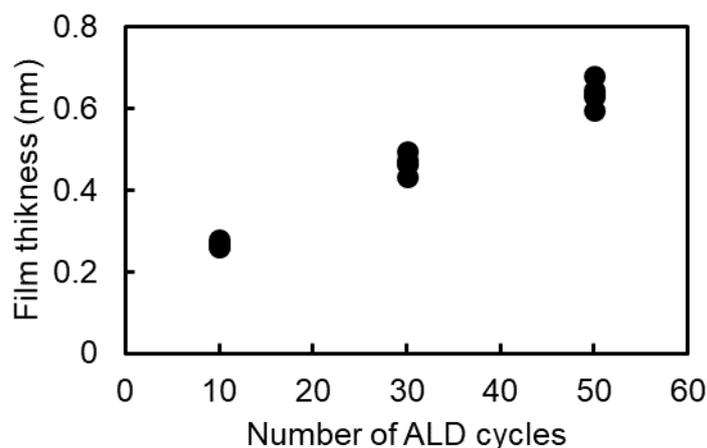
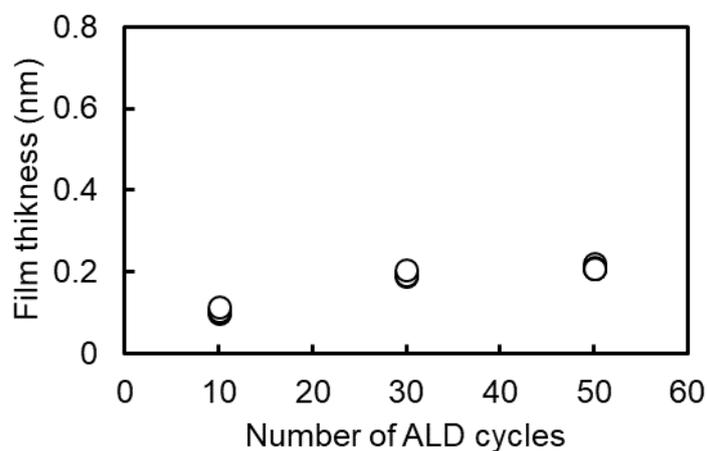


**Atomic layer deposition of zinc oxide thin films using a liquid cyclopentadienyl-based precursor, bis(n-propyltetramethylcyclopentadienyl)zinc.**

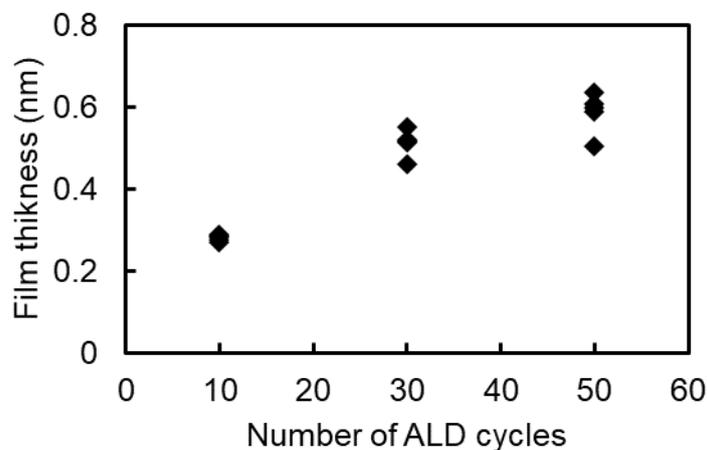
Fumikazu Mizutani, Shintaro Higashi, Nobutaka Takahashi, Mari Inoue, Toshihide Nabatame



ZnO film thickness as function of number of ALD cycles. The ALD conditions were a  $\text{Zn}(\text{Cp}^{\text{pm}})_2$  pulse time of 0.1 s, a  $\text{H}_2\text{O}$  pulse time of 30 s, an  $\text{O}_2$  plasma pulse time of 50 s, and a growth temperature of 200 °C.



ZnO film thickness as function of number of ALD cycles. The ALD conditions were a  $\text{Zn}(\text{Cp}^{\text{pm}})_2$  pulse time of 0.1 s, a  $\text{H}_2\text{O}$  pulse time of 30 s, and a growth temperature of 200 °C.



ZnO film thickness as function of number of ALD cycles. The ALD conditions were a  $\text{Zn}(\text{Cp}^{\text{pm}})_2$  pulse time of 0.1 s, an  $\text{O}_2$  plasma pulse time of 50 s, and a growth temperature of 200 °C.