Supplementary Materials:

Figure 1:

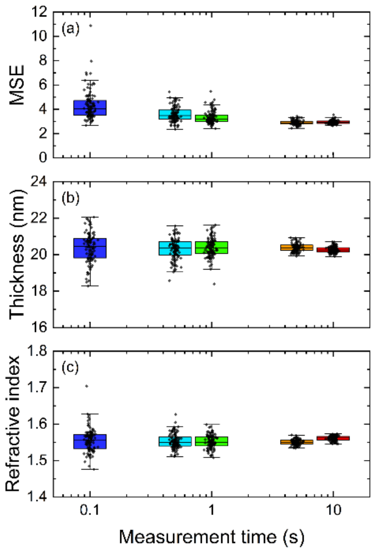

Fig.1 The influence of in-situ ellipsometry measurement time on the mean square error and fitted values as well as their uncertainty.

Figure 2:

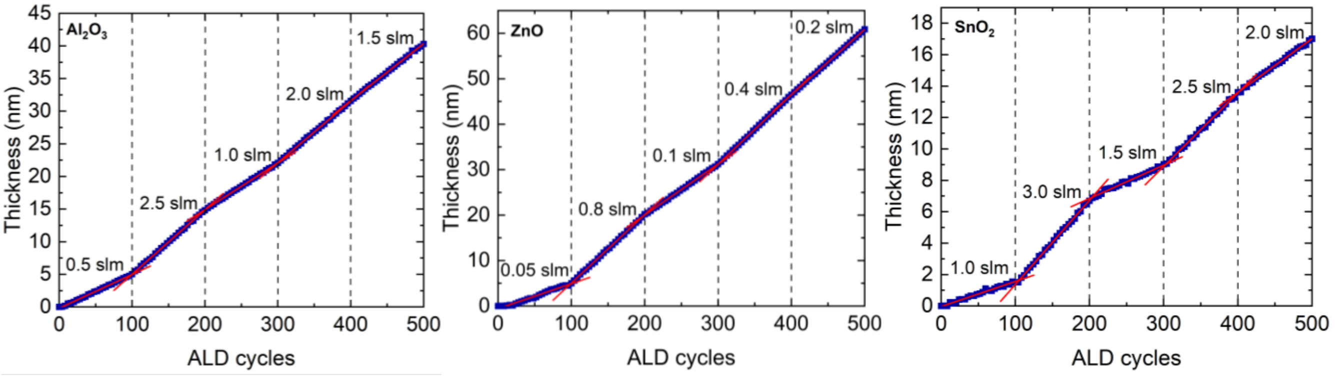

Fig.2 thickness as a function of ALD cycles for Al_2O_3, ZnO and SnO_2. After every 100 cycles the flow through bubbler was changed. The corresponding flow is delineated on the plot. Growth rate of each region is defined by fitting linear functions to the growth curve.

Figure 3:

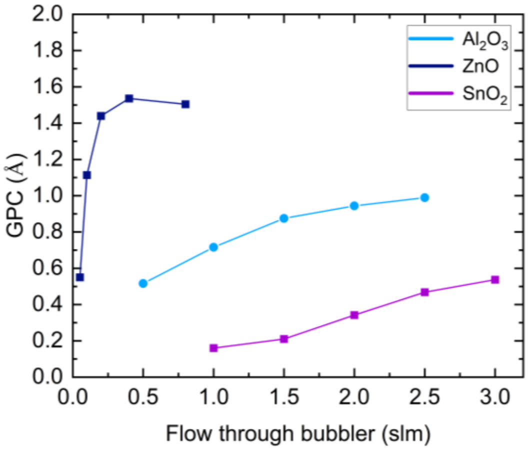

Fig.3 GPC as a function of bubbler flow for Al_2O_3, ZnO and SnO_2. The films are deposited at 200 °C on c-Si substrate. Solid symbols represent the GPC extracted from in-situ measurements and the open symbols represent GPC calculated from ex-situ measurements.

Figure 4:

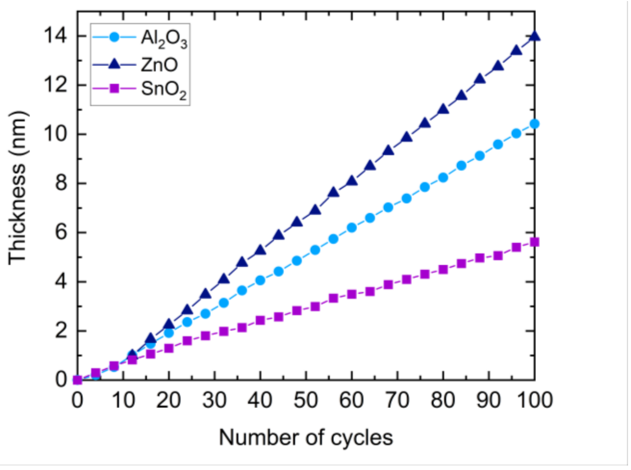

Fig.4 The nucleation curves of Al_2O_3, ZnO and SnO_2. Films are deposited at 200C in a s-ALD reactor using a scanning speed of 300 mm/s. In-situ SE data are acquired after every 4 ALD cycles.