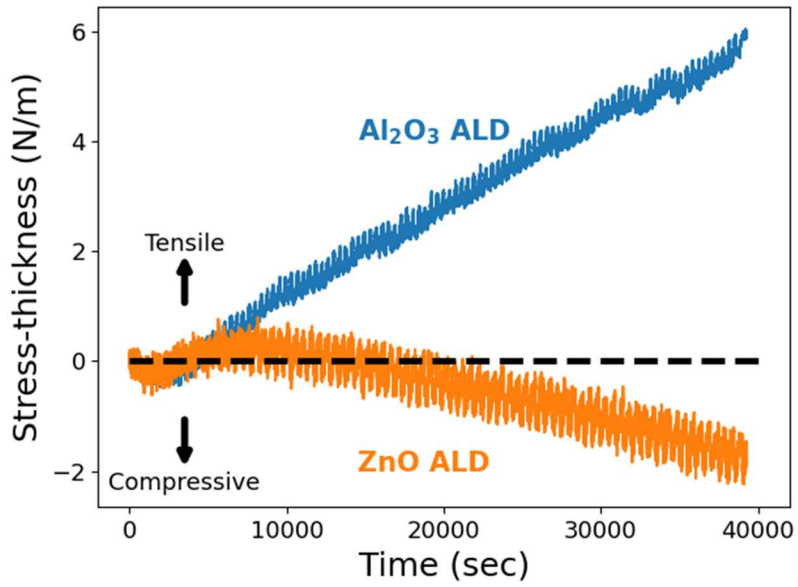

Figure 1. In situ stress-thickness measurements during Al_2O_3 ALD growth at 130°C and ZnO ALD growth at 150°C. Positive change of stress-thickness for Al_2O_3 ALD is consistent with a tensile film stress of 450 MPa. Negative change of stress-thickness for ZnO ALD is consistent with a compressive film stress of 150 MPa.

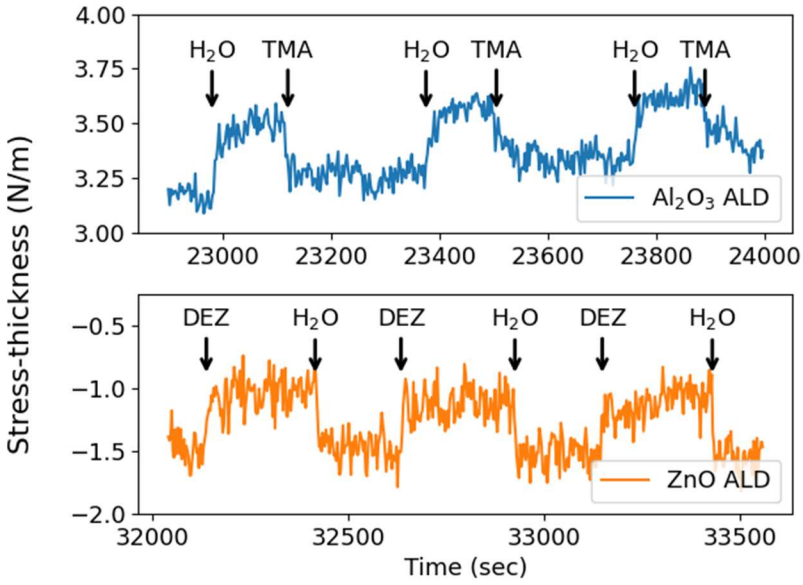

Figure 2. In situ stress-thickness measurements for three cycles during steady state Al_2O_3 and ZnO ALD growth at 150°C. Negative change of stress-thickness for TMA exposures during Al_2O_3 ALD is consistent with a compressive surface stress. The H_2O exposures then release this compressive stress. Negative change of stress-thickness for H_2O exposures during ZnO ALD is consistent with a compressive surface stress. The DEZ exposures then lead to a tensile surface stress.