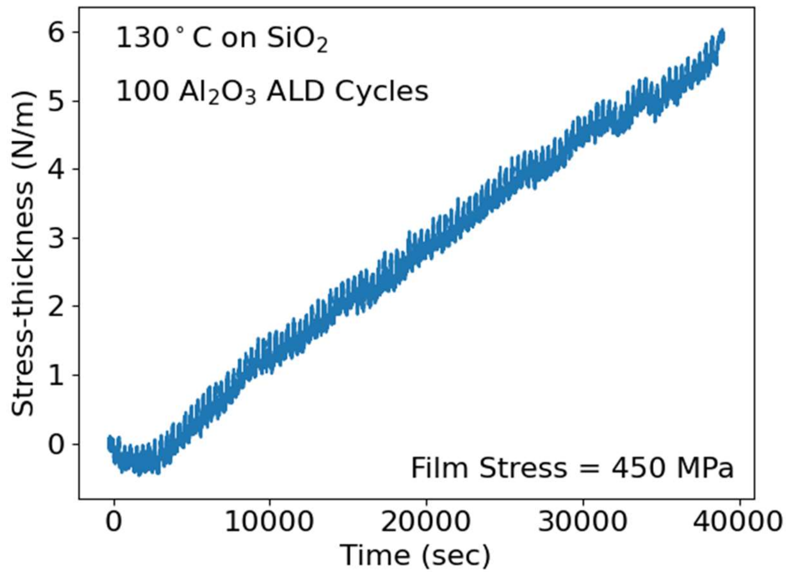

Figure 1. In situ stress-thickness measurements during 100 cycles of Al_2O_3 ALD growth on native oxide on silicon wafer at 130°C using sequential TMA and H_2O exposures. The Al_2O_3 ALD cycle time was 385 s. Positive change of stress-thickness is consistent with a tensile film stress of 450 MPa.

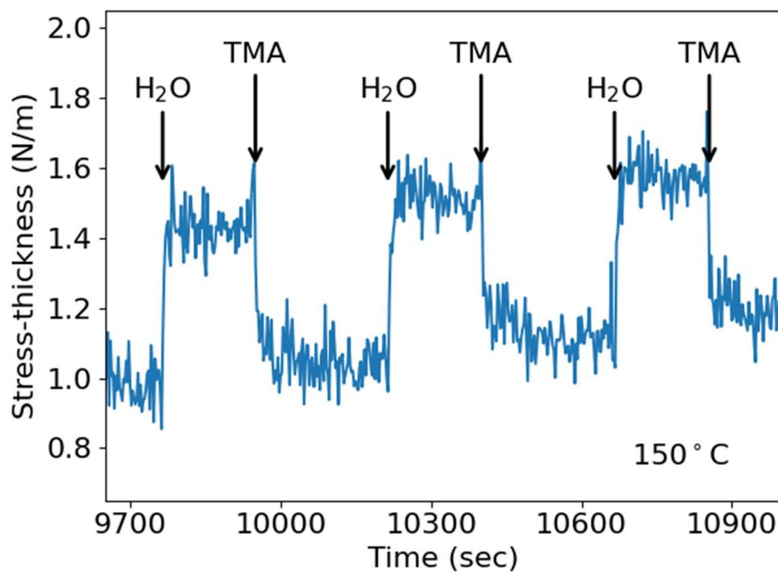

Figure 2. In situ stress-thickness measurements for three cycles during steady state Al_2O_3 ALD growth at 150°C using sequential TMA and H_2O exposures. Negative change of stress-thickness during TMA exposures is consistent with a compressive surface stress. The H_2O exposures release this compressive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