

Figure 1. Mass changes during ZrO<sub>2</sub> ALE cycles at 200, 225, 250, 275, and 300 °C with the HF and TiCl<sub>4</sub> with 1–30–2–30 at pressures of 0.1 Torr for HF and 0.13 Torr for TiCl<sub>4</sub>.

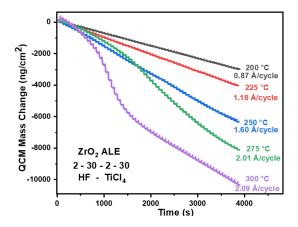


Figure 2. Mass changes during ZrO<sub>2</sub> ALE cycles at 200, 225, 250, 275, and 300 °C with the HF and TiCl<sub>4</sub> with 2–30–2–30 at pressures of 0.6 Torr for HF and 1.2 Torr for TiCl<sub>4</sub>.

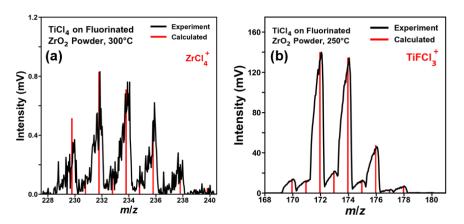


Figure 3. Mass spectrum of the (a) ZrCl<sub>4</sub><sup>+</sup> ion signal and (b) TiFCl<sub>3</sub><sup>+</sup> ion signal during TiCl<sub>4</sub> exposure on fluorinated ZrO<sub>2</sub> powder.