



**Figure 1.** Comparison of ALD and PEALD HfO<sub>2</sub> on WSe<sub>2</sub> at different temperatures. Atomic force microscopy images and line-scan height profiles after 115 cycles (~10 nm) of ALD and PEALD HfO<sub>2</sub> on WSe<sub>2</sub> ALD Al<sub>2</sub>O<sub>3</sub> at (a) 120°C, (b) 220°C, and (c) 332°C on MoS<sub>2</sub>. PEALD HfO<sub>2</sub> at (d) 120°C, (e) 220°C, and (f) 332°C on WSe<sub>2</sub>. All WSe<sub>2</sub> flakes are nominally 6-8 nm thick. Scale bars are 100 nm.