

Figure 1: a) Ru coverage measured by Rutherford Backscattering Spectrometry (RBS) for increasing ALD cycle number on -OH terminated hydrophilic SiO₂, HfO₂, Al₂O₃, Si-O-Si terminated hydrophobic SiO₂, and Si-CH₃ organosilicate glass, b) inset for low ALD cycle number, showing Ru RBS and Total X-Ray Fluorescence Spectrometry (TXRF) for the initial ALD cycles. Closed lines are provided as a guide to the eye.

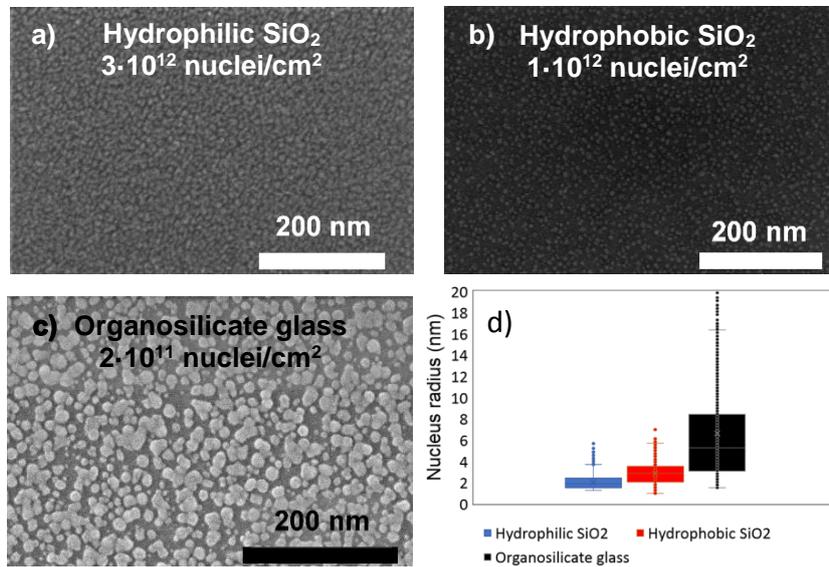


Figure 2: Scanning Electron Microscopy (SEM) images for Ru ALD on a) 25 cycles on hydrophilic SiO₂, b) 50 cycles on hydrophobic SiO₂, and c) 300 cycles on organosilicate glass. The Ru areal density is equal to $4 \cdot 10^{15}$ at/cm² in all cases as determined by RBS. d) Nucleus size distributions corresponding to $4 \cdot 10^{15}$ at/cm² for different dielectric surfaces. Outliers with radii larger than 20nm have been omitted.

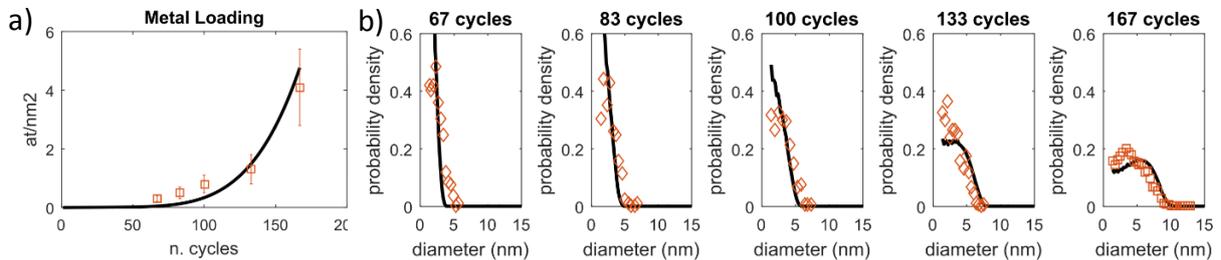


Figure 3: a) Ru areal density as a function of ALD cycle number as predicted by the nucleation model (solid line) and as measured by RBS (orange squares) b) nucleus size distribution after different amount of Ru ALD cycles as predicted by the model (solid line) and as observed by SEM (orange squares)