

Figure 1: A) Overview of the developed Ru SIS process. **a)** PS-b-PMMA template containing both PS and PMMA domains. **b)** Selective RuO₄ infiltration into PS domains. **c)** Chemical modification of the PS domains followed by H₂ infiltration to form metallic Ru inside the PS domains. **d)** H₂ plasma to remove organic components, thereby liberating Ru nanopatterns on the surface. **B)** Selectivity of the Ru SIS process as confirmed by XPS after 30 SIS cycles. A Ru 3p signal is clearly present on PS and PS-b-PMMA, while no signal can be discerned on PMMA.



Figure 2: Atomic force microscopy images. **a)** after different number of SIS cycles, and **b)** after an additional H₂ plasma treatment.