

Figure 1: Route to Ni films via reduction of prepatterned NiO.

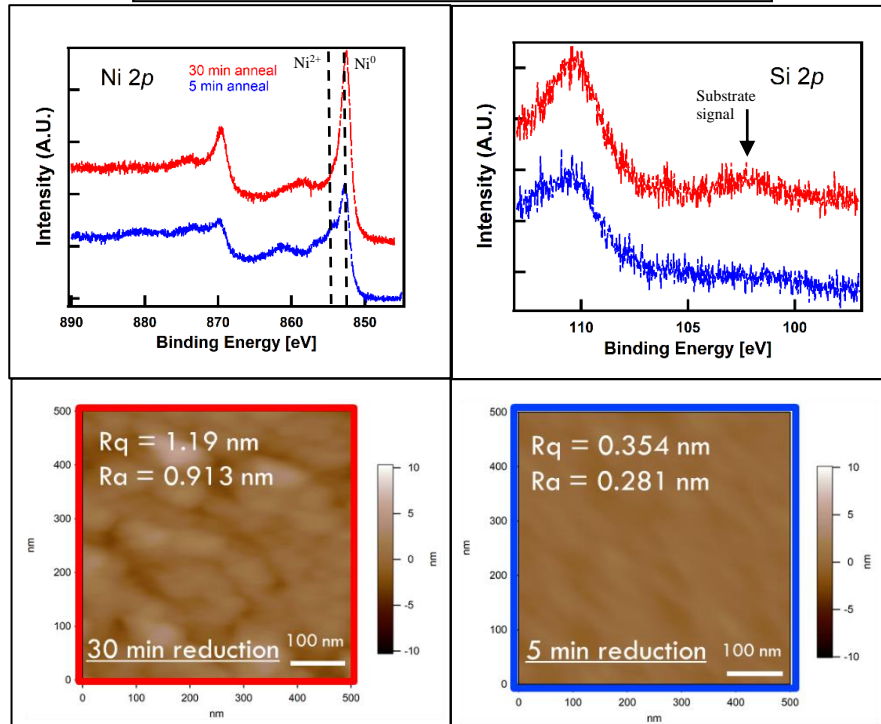


Figure 2: Top: *In-situ* XPS spectra of 100 cycles NiO film after 5 min (blue) and 30 min (red) H<sub>2</sub> anneal at 300 °C. Bottom: Corresponding *ex-situ* AF micrographs of the film surface after capping with 3 nm Pd. As-grown films have Rq of ~2 Å; 30 min anneal fully reduced the film and dewetting ensued.

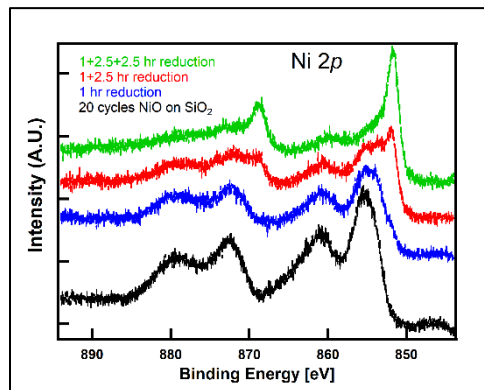


Figure 3: XPS spectra of 2 nm NiO before (black) and after treatment with H atoms at 100 °C for 1 hr (blue), 3.5 hrs (red) and 6 hrs (green).