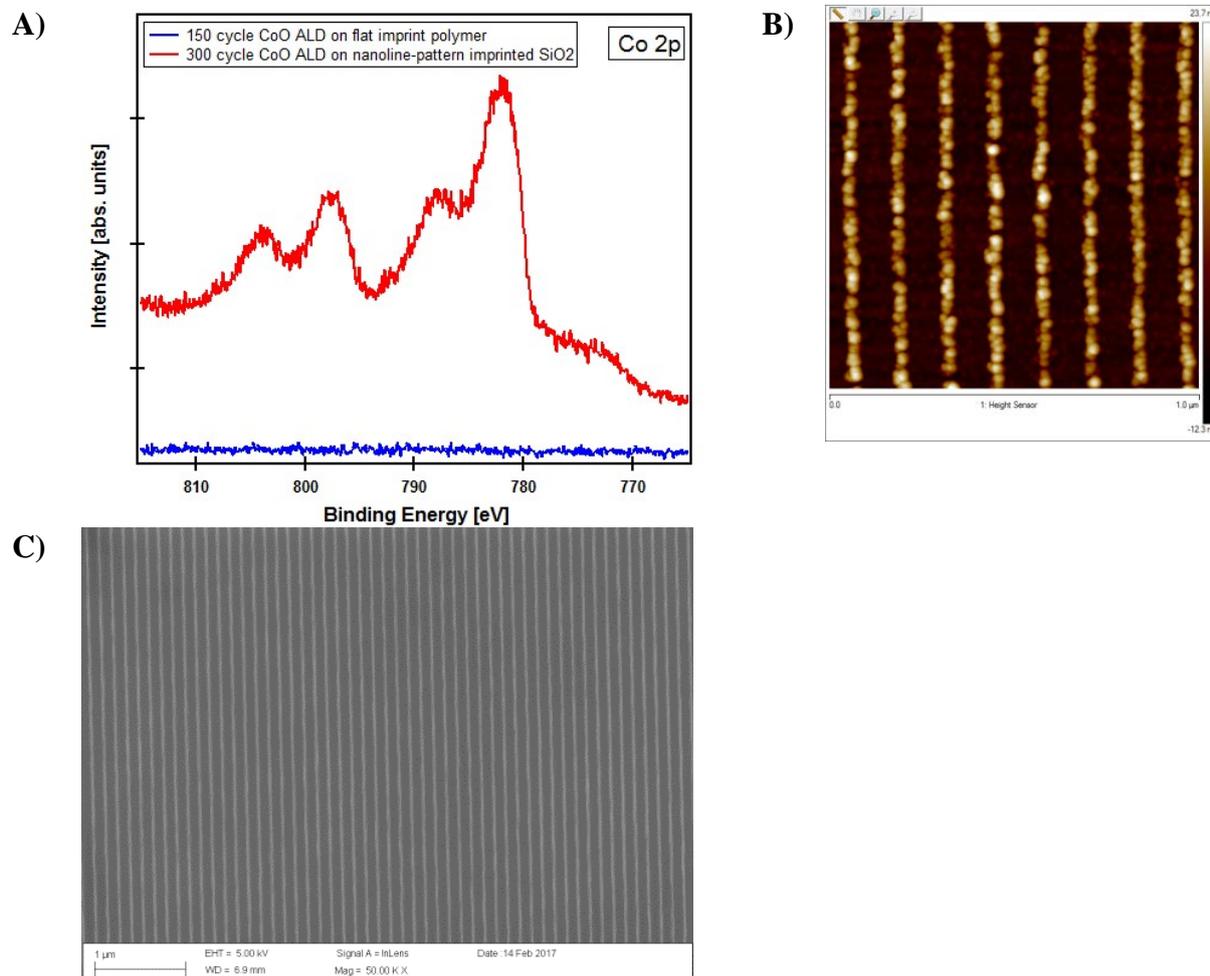


# Fabrication of Large-area Nanolines by Area-selective Atomic Layer Deposition

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The approach is illustrated with a 110-nm pitch nanoline pattern of 40 nm-wide trenches and 120 nm-high cured-imprint polymer lines created over a 25 mm-square imprint area on a thermal oxide film by nanoimprinting. Figure A shows CoO ALD does not occur on the imprint polymer and CoO ALD occurs only when the residual imprint layer is cleared at the bottom of the trenches with an O<sub>2</sub>/Ar plasma etch. Figure B is an atomic force microscopy image of 9-nm high and 40-nm wide CoO lines after removal of the polymer lines with an O<sub>2</sub>/Ar plasma etch. Figure C is a scanning electron microscopy image of the uniform and parallel CoO lines after removal of the polymer lines.