

**SI 1:** Evolution of the W(4f), C(1s), and O(1s) XP regions for a 1.5nm thick film of W(CO)<sub>6</sub> irradiated with X-rays (Mg K $\alpha$  1253.6 eV); the x-ray exposure time is shown on the right hand side of each W(4f), C(1s), and O(1s) spectrum.