

Surface Preparation of the Hf (0001) Monocrystal: XPS studies

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Abstract. In the present work, we optimized the preparation of the Hf (0001) surface. The monocrystal has been produced by the Surface Preparation Laboratory company. The cleaning procedure, ion bombardment and annealing, has been tuned to optimal parameters, allowing to obtain small-spot and high-contrast (1x1) LEED patterns. No traces of a surface reconstruction have been detected. X-ray photoelectron spectroscopy (XPS) spectra show no carbon contamination and a very weak O *1s* peak. The high surface reactivity is testified by a steep increase in time of the O *1s* intensity. A considerable amount of the oxygen contamination is observed after 1 hour even in the vacuum in the low 10^{-10} mbar range.