Electronic Supplementary Information for Dalton Transactions

A simple synthesis route and characterisation of Co_3Mo_3C

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Electronic Supplementary Information

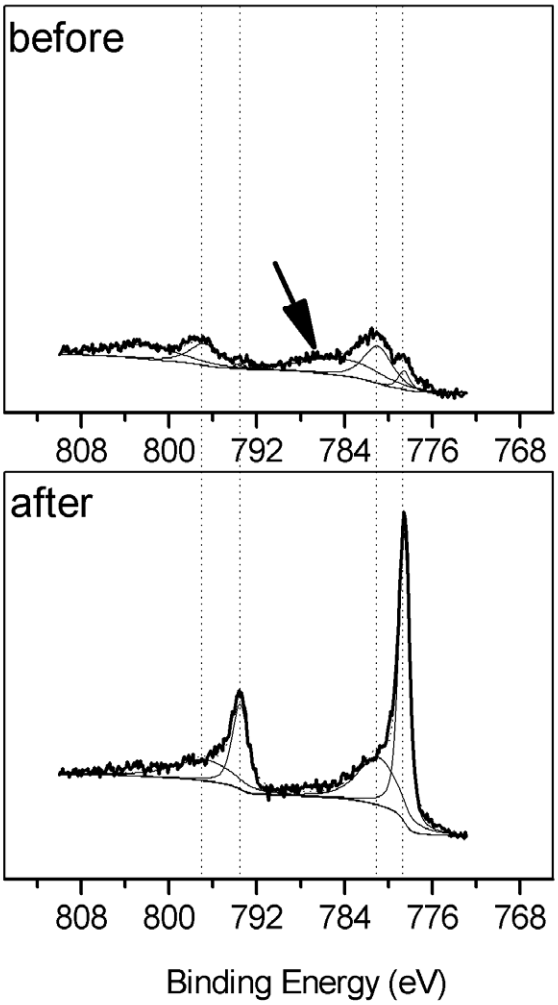

Figure XPS spectras of Co 2p in Co_3Mo_3C before and afer Ar sputtering. Thick curves represent the raw data, thin curves represent the results of deconvolution of the spectrum into Lorentzian-broadened Gaussian peaks, and dotted curves represent the resulting fit to the raw data.

The figure shows the XPS spectra of Co 2p in nearly single phase Co_3Mo_3C, namely sample (g) in the paper. As emphasized by the vertical dashed lines, argon sputtering process has brought almost no shift for the BE values of the carbidic and oxidic states of cobalt, whereas the ratio of the carbide/oxide greatly increases after

being sputtered. And the high binding energy peak locating at around 786 eV marked by the arrow in the figure may be readily attributed to the high coordination of cobalt oxide. This indicates argon sputtering has removed the surface oxygen which probably comes from the passivation process, and the surface oxygen is difficult to completely eliminate for the powder sample.