Electronic Supplementary Material (ESI) for Environmental Science: Nano.

SUPLEMENTARY MATERIAL

In this section, the results obtained using X-ray photoelectron spectroscopy (XPS) methodologies are indicated. This is a surface-sensitive quantitative spectroscopic technique that measures the elemental composition of the tested nanomaterial.

It should be pointed out that the high percentage of carbon observed is due to the fact that this technique only permits to go less than 5 nm deep on the surface of the analysed material. For this reason, most of the observed composition correspond to the coating. Nevertheless, data support that no other contaminating compounds out of Co and C are present in the CoNPs used.

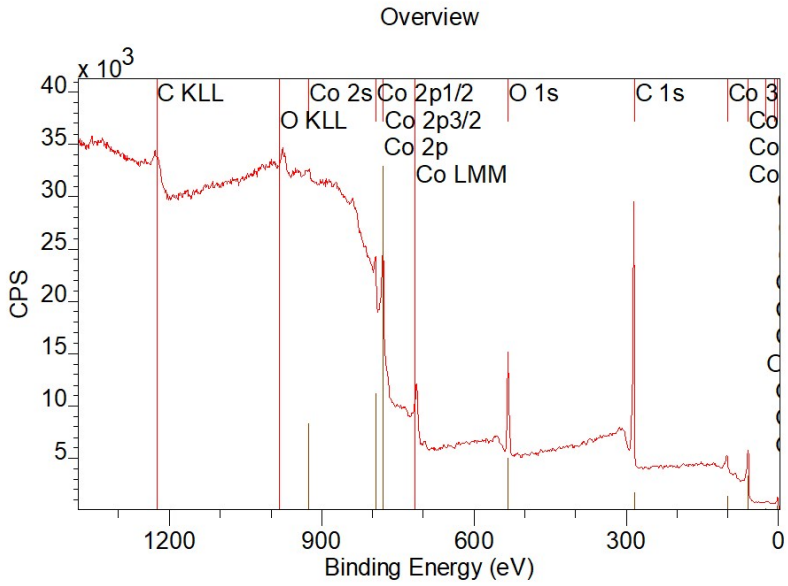

Figure 1. General characterization of CoNPs, with indication of all the elements detected in the sample

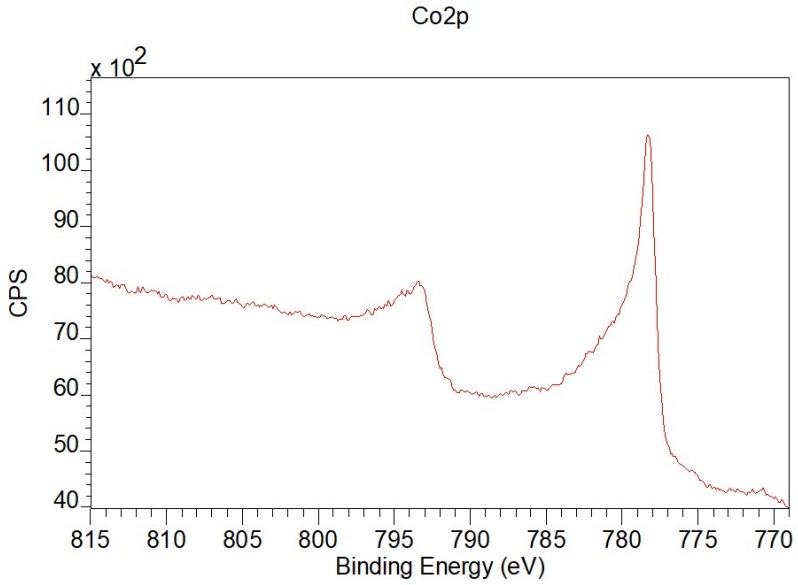

Figure 2. Amplification of the cobalt pic. The energy of the second pic correspond to the metallic form of cobalt. This means that most of the cobalt is in the metallic form.

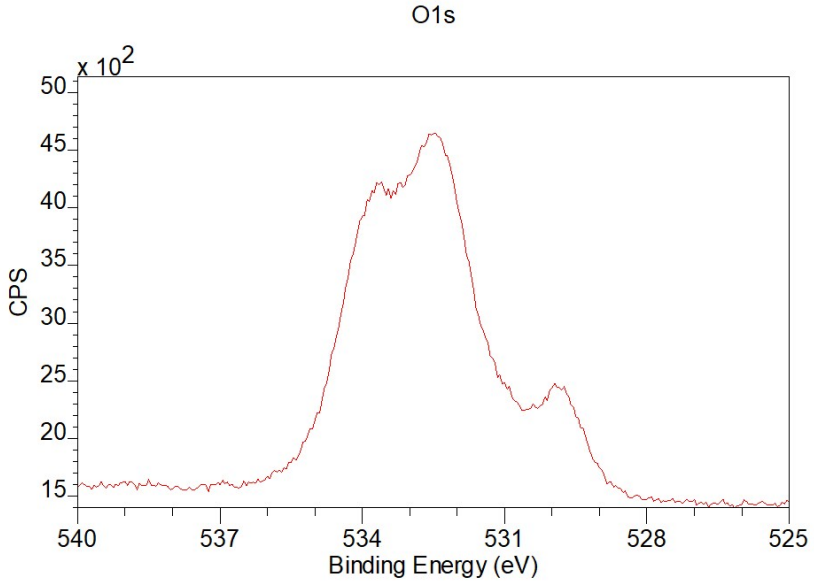

Figure 3. Amplification of the oxygen pic. Three different pics are observed. The first correspond to carbon-coupled oxygen by double bonds (C=O organic), the second one correspond to metallic carbonates ($CoCO_3$), and the third one correspond to the oxidized metal, representing the proportion of oxidized cobalt.

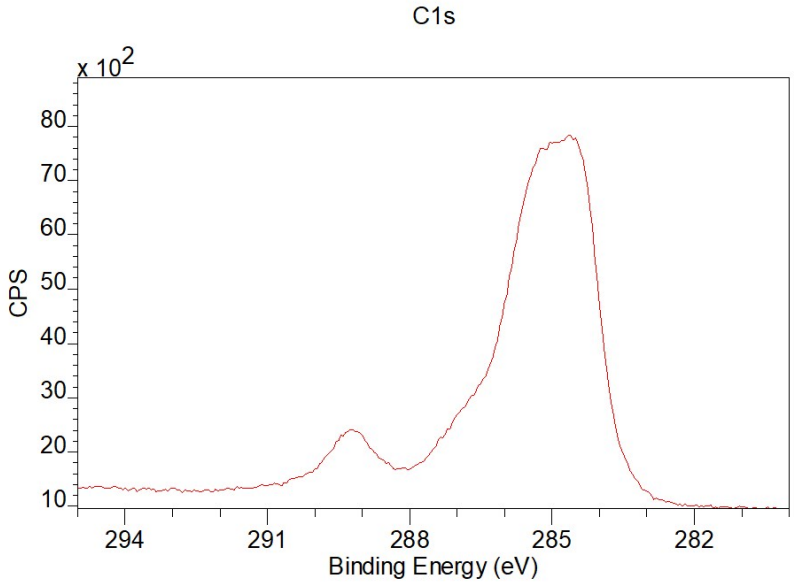

Figure 4. Amplification of the carbon pic. The first pic correspond to O-C=O, while the second correspond to C-C.