Electronic Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry.

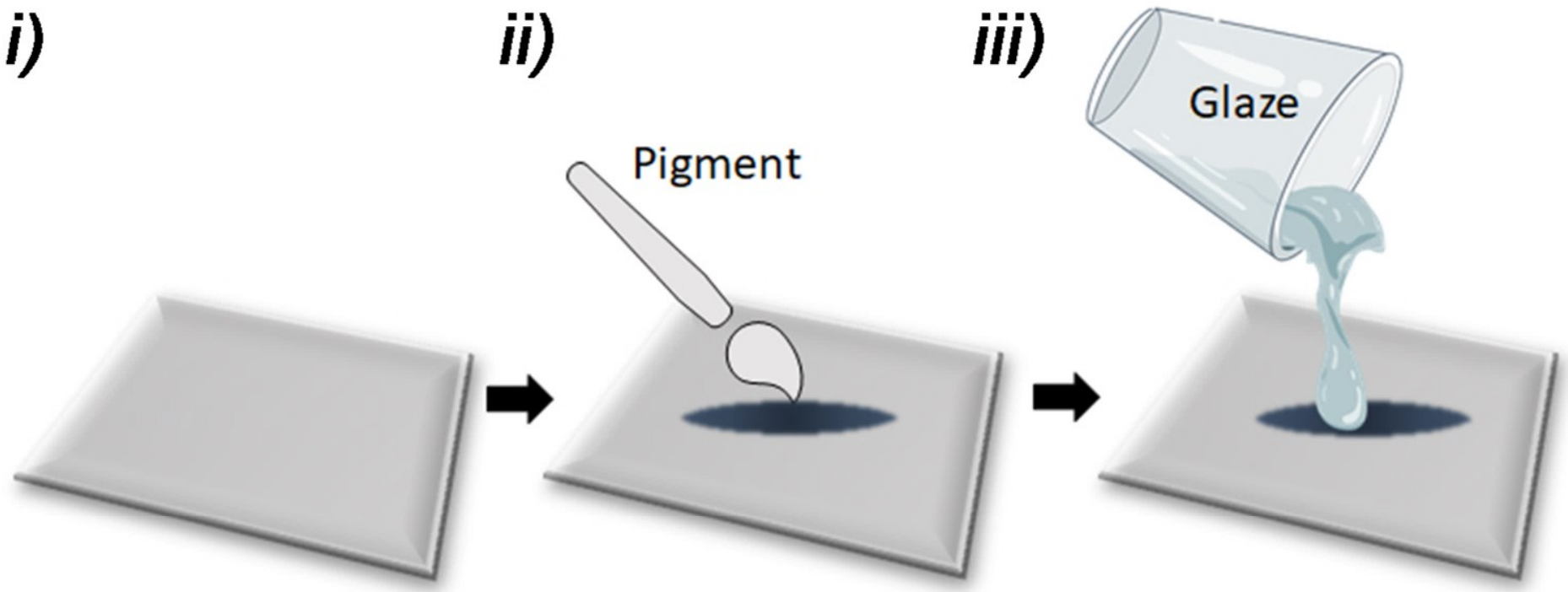

Fig. S1 - Production process of the underglaze models: i) ceramic body, ii) application of the pigment and iii) glazing.

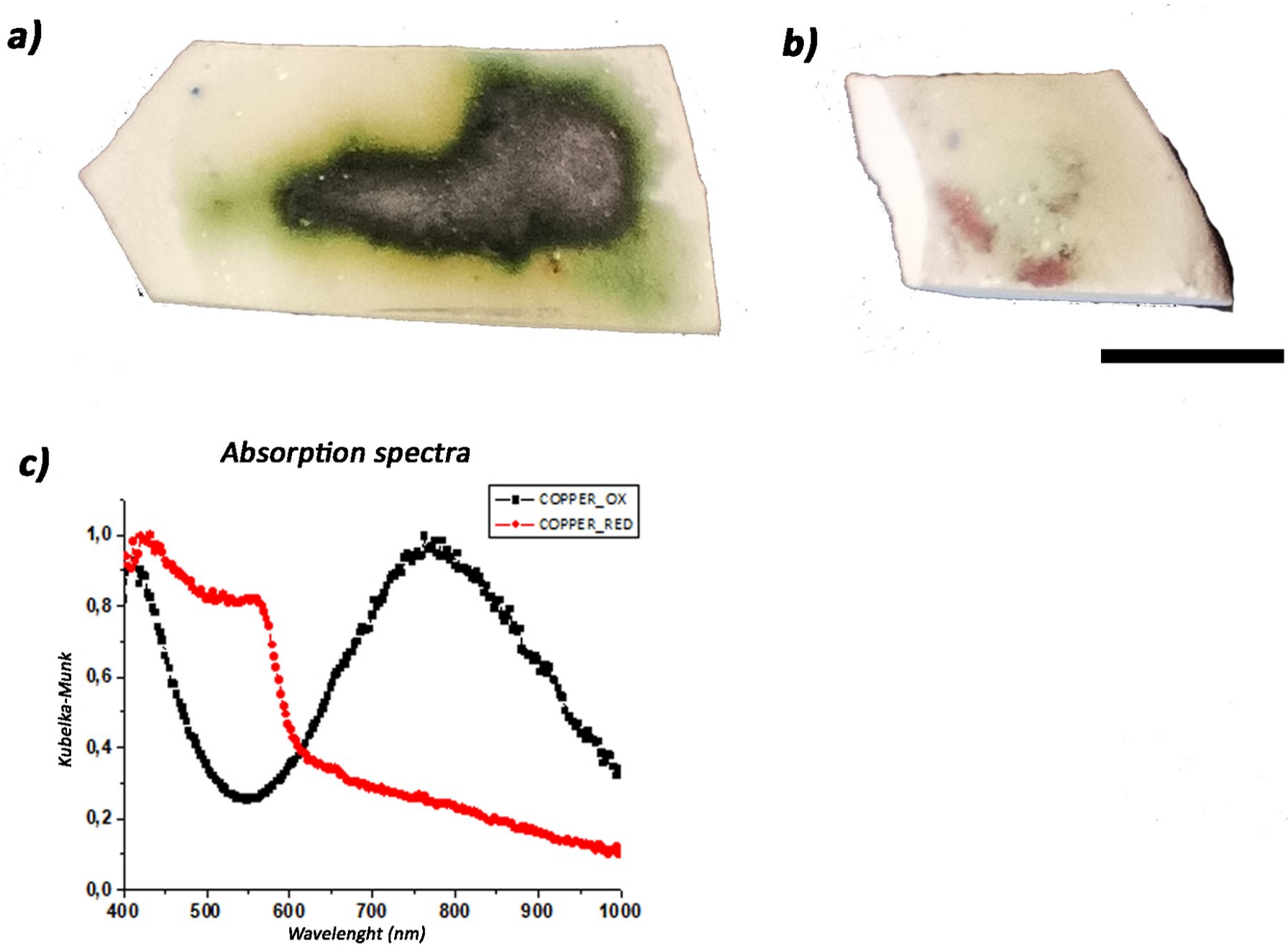

Fig. S1 – Copper samples used for control of the firing atmosphere. a) Green coloured COPPER_OX fired in air atmosphere; b) red coloured COPPER_RED fired in reductive atmosphere; and c) Absorption spectra of COPPER_OX and COPPER_RED presenting the band of Cu_{2+} at 740–880 nm (black squares) and Cu nanoparticles for COPPER_RED at 575 nm (red circles).

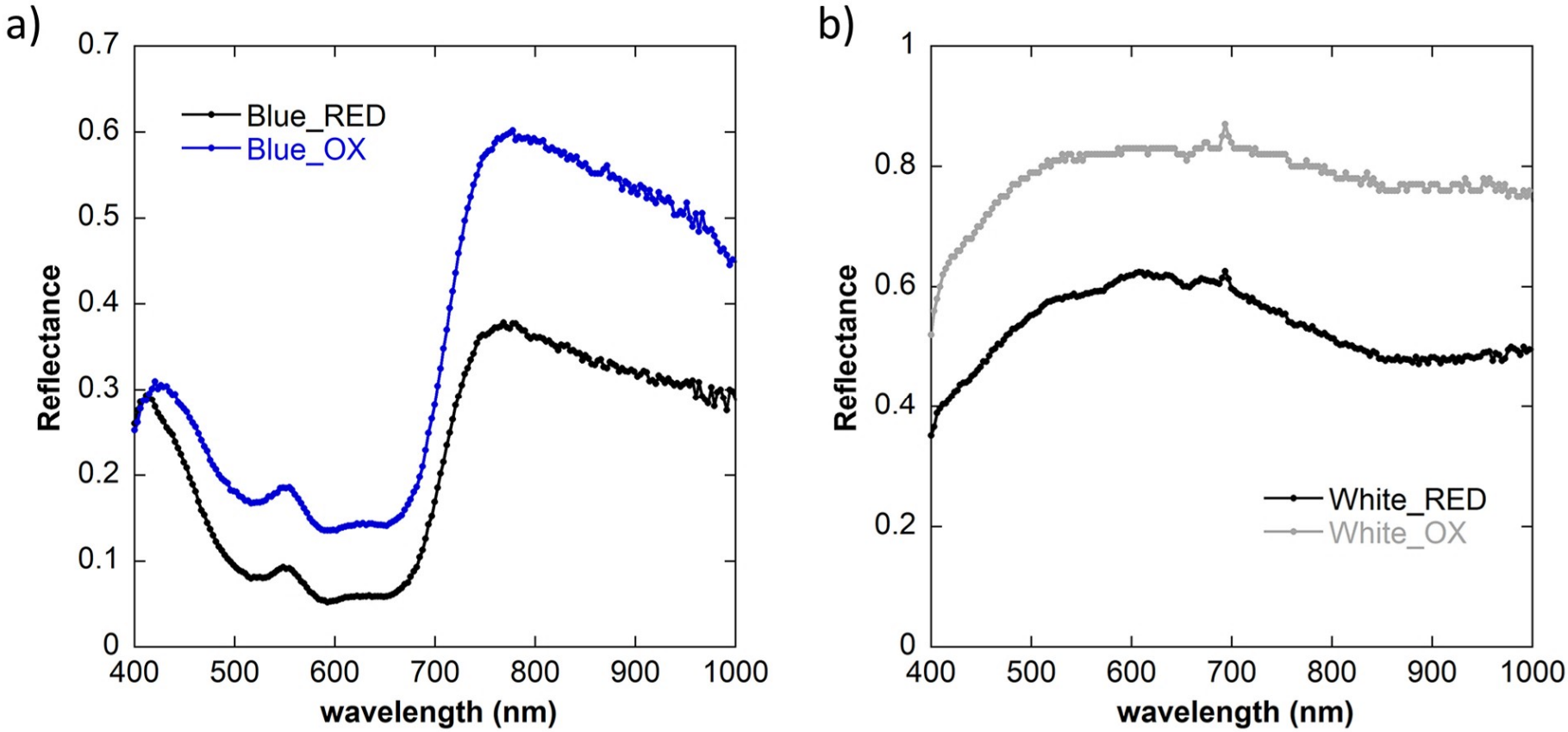

Figure 3S. Vis-SWIR reflectance spectra of the produced samples produced in air and reductive atmosphere: a) blue models and b) white models (without colourant).

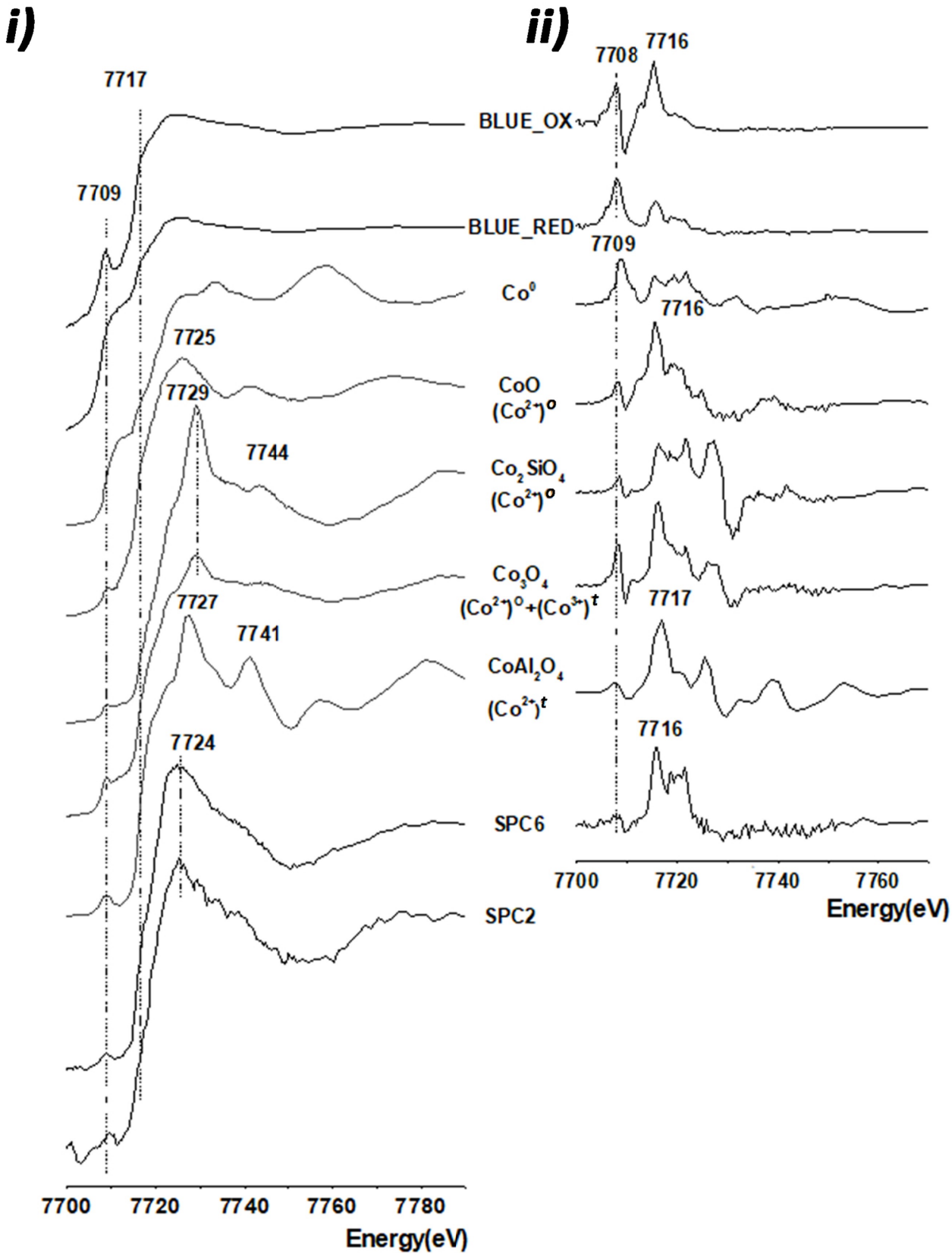

Fig. S4 - Figure 6. Normalized Co K-edge XANES spectra (i) collected from the blue underglaze models BLUE_OX and BLUE_RED, Chinese Blue-and-white porcelain (SPC2 and SPC6) and comparison with Co metal foil and Co reference compounds and (ii) corresponding first derivative.

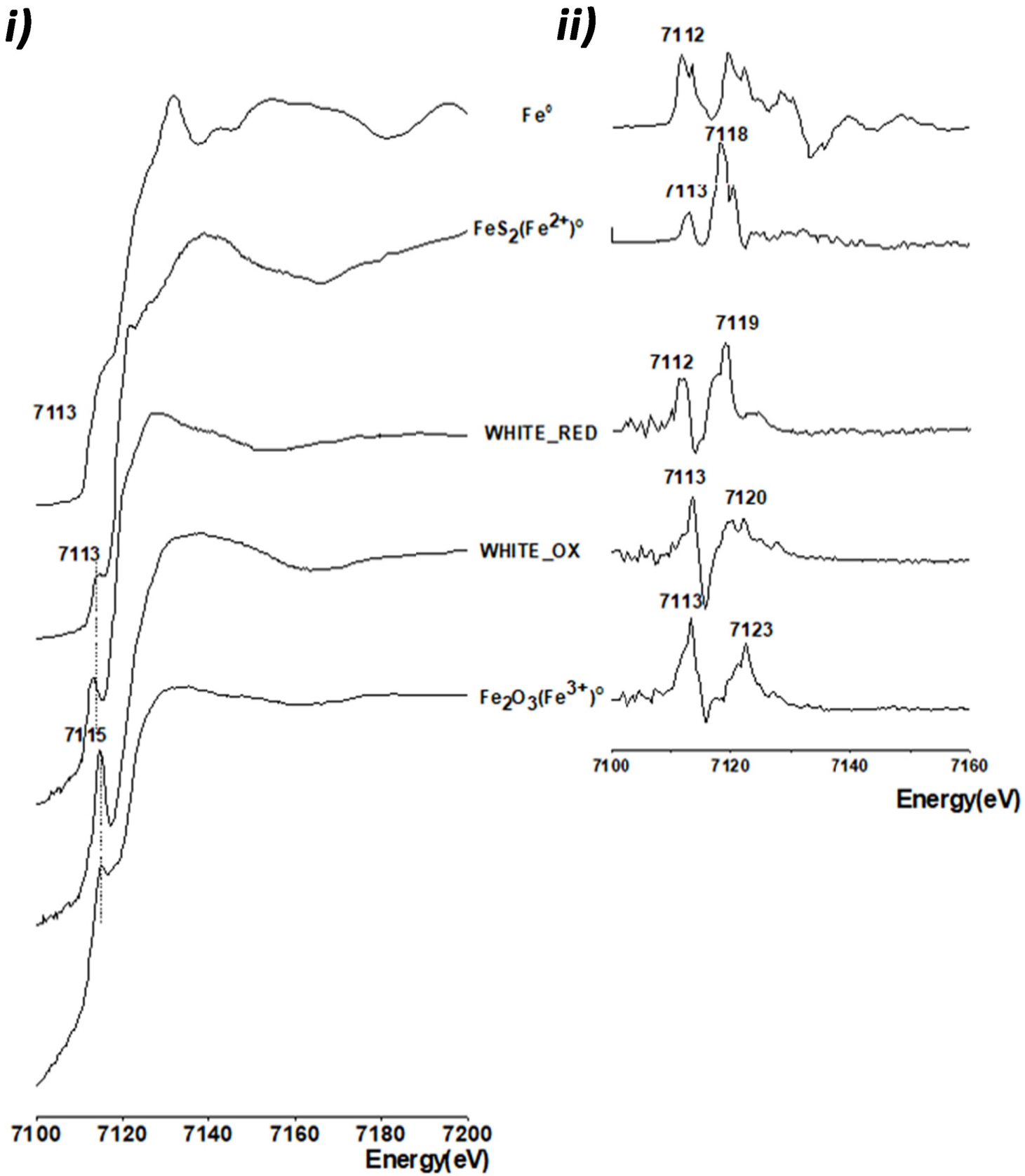

Fig. S5 - Normalized Fe K-edge XANES spectra (i) collected from the selected Co model compounds and the WHITE_RED and WHITE_OX models and corresponding (ii) first derivative.