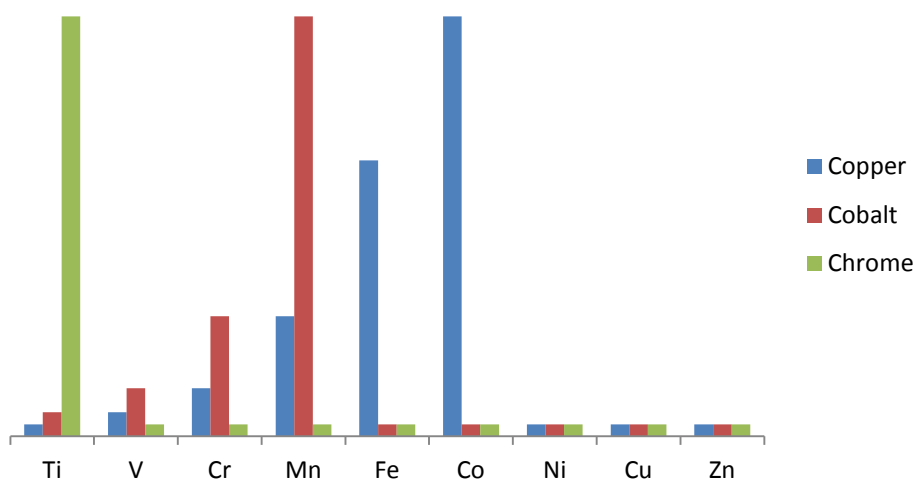


Selection of X-ray sources in X-ray powder diffraction.

Choice of the X-ray source for X-ray powder diffraction is dependent on the material that you are analyzing. Normally Copper radiation is employed for routine analysis. However if the sample contains Cr, Mn, Fe or Co you may be better off with Cobalt or Chromium radiation.

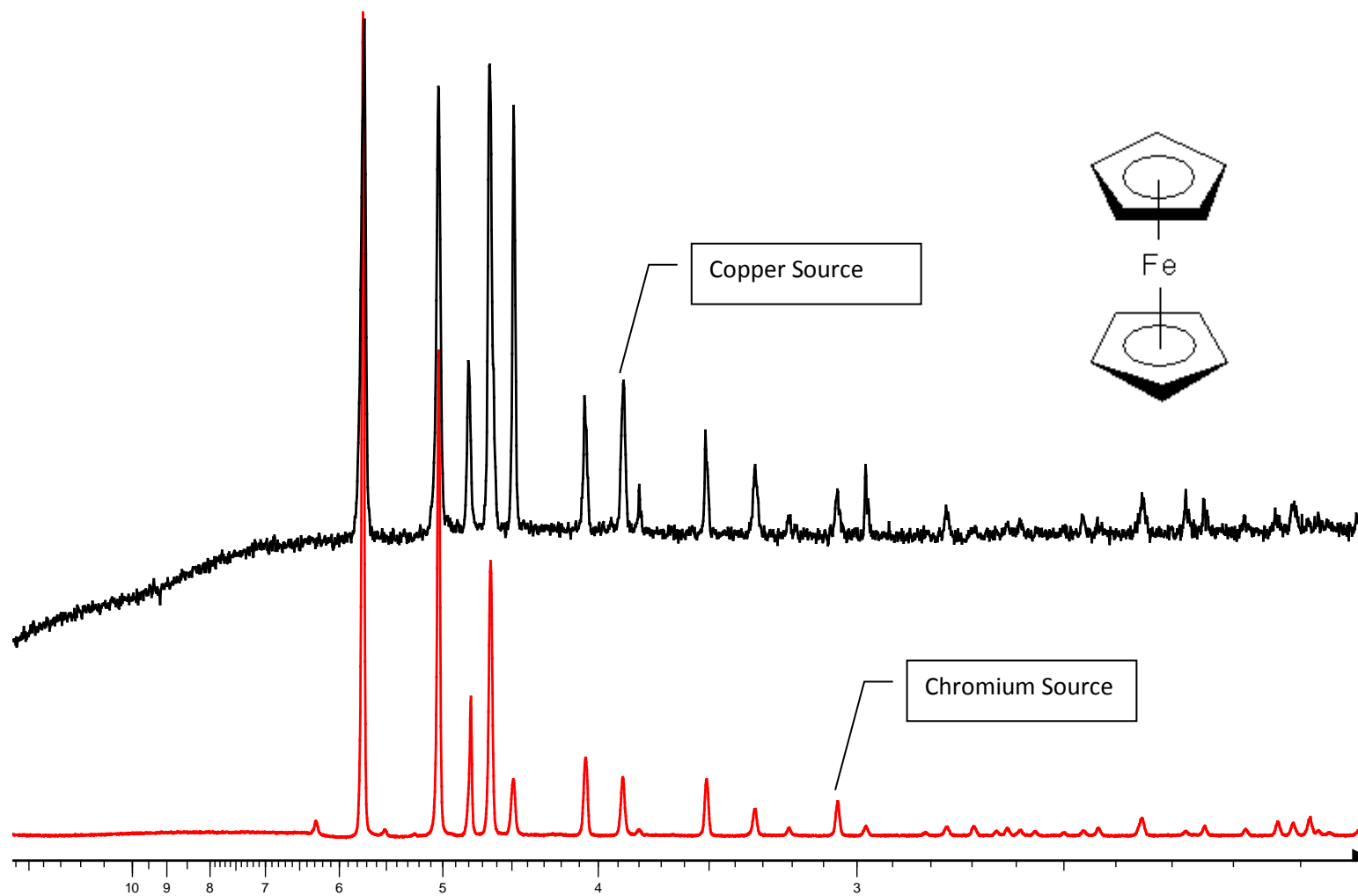
Figure below highlights the elements that fluoresce with Copper, Cobalt or Chromium radiation.



Choice of radiation will also be influenced by the absorption of the sample material, air and background holder as well as scattered data intensities.

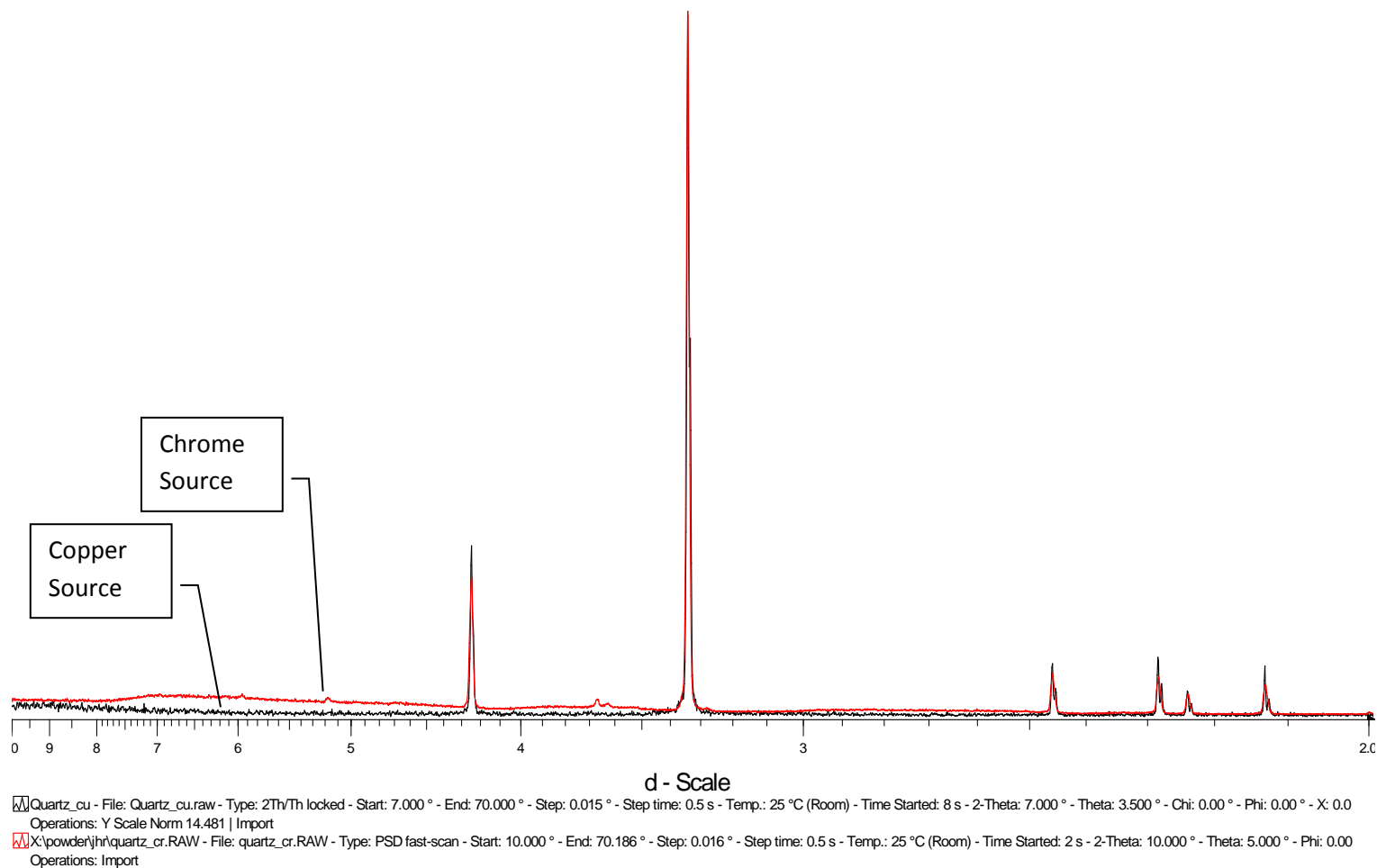
The first figure below illustrates the improvement in the X-ray powder diffraction pattern for Ferrocene (FeCp_2) when Chromium radiation is employed versus Copper. Both patterns were collected for the same sample with the same data collection parameters.

The second figure below is the X-ray powder diffraction pattern for Quartz when Copper radiation is employed versus Chromium. Both patterns were collected for the same sample with the same data collection parameters.



X-ray Powder Pattern for Ferrocene (FeCp_2). Figure above demonstrates the effect of fluorescence on the diffraction pattern for an Iron sample.

Quartz



XRD pattern for Quartz : Red = chrome tube , Black = copper tube.