

Data Dictionary

Field Name on data page (csv file)	Field Definition
Type	Type of reference materials or specific structures defined in the STEM or EFTEM images
L3	Copper L3 peak location in EELS
L3-FWHM	The full width at half maximum (FWHM) of copper L3 peak
L2	Copper L2 peak location in EELS
L2-FWHM	The full width at half maximum (FWHM) of copper L2 peak
L3-L2-ratio	The ratio of the integrated intensity of copper L3 and L2 peaks
Peak-a; Peak-b; Peak-c; Peak-d; Peak-e; Peak-f;	locations of signature near-edge peaks near copper L3 and L2 peaks
Ref-Cu	Reference Cu (nanopowder, particle size = 25 nm)
Ref-Cu2O	Reference Cu(I) oxide (powder, 97%)
Ref-CuO	Reference Cu(II) oxide (nanopowder, particle size<50 nm)
Ref-BCC	Reference Copper(II) carbonate basic(powder, reagent grade)
Ref-CuAc	Reference Cu(II) acetate (powder, 99.99%)
Free-Cu(0)	Unbound spherical Cu particles in aerosol samples
Free-Cu(II)	Unbound Cu(II) particles in aerosol samples
Wood-Cu-Complex	Cu(II) complexes embedded in wood dust
Wood-Cu(0)	Cu(0) particles embedded in wood dust
Wood-Cu(II)	Cu(II) particles embedded in wood dust
Energy Loss	Energy loss (eV) showing in the EEL spectra
Normalized Intensity	Normalized intensity showing in the EEL spectra

Data Files

Data File Name	Data Reported in the Mnauscript
Dataset_01_Cu-L3-L2.csv	Table 1, Figure 4(b)
Dataset_02_EELS_Ref-Cu.csv	Figure 4(a), Figure 5(g), Figure 6(e)
Dataset_03_EELS_Ref-Cu2O.csv	Figure 4(a)
Dataset_03_EELS_Ref-Cu2O.csv	Figure 4(a)
Dataset_04_EELS_Ref-CuO.csv	Figure 4(a)
Dataset_05_EELS_Ref-BCC.csv	Figure 4(a), Figure 5(g), Figure 6(e)
Dataset_06_EELS_Ref-CuAc.csv	Figure 4(a), Figure 5(g)
Dataset_07_EELS_Free-Cu(0).csv	Figure 6(e)
Dataset_08_EELS_Free-Cu(II).csv	Figure 6(e)
Dataset_09_EELS_Wood-Cu-Complex.csv	Figure 5(g)
Dataset_10_EELS_Wood-Cu(0).csv	Figure 5(g)
Dataset_11_EELS_Wood-Cu(II).csv	Figure 5(g)
Dataset_12_EELS_Wood-Matrix-Ca.csv	Figure 7(e)
Dataset_13_EELS_Wood-Matrix.csv	Figure 7(e)