Supporting information for:

Time resolved *in situ* combined video/XANES/UV-Vis spectroscopy on the influence of X-rays on aqueous copper solutions

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ESI Movie S1

In situ video movie during the exposure of an aqueous solution containing 100 mM of a Cu^{2+}-histidine (1:2) complex at pH 3.4 to the X-ray beam. The movie is rendered at 2000% of the original speed. The beam enters the cuvette from approximately 50 % of the way up the right hand side of the image.

ESI Movie S2

In situ video movie during the exposure of an aqueous solution containing 100 mM of a Cu^{2+}-histidine (1:2) complex at pH 6.0 to the X-ray beam. The movie is rendered at 2000% of the original speed. The beam enters the cuvette from approximately 50 % of the way up the right hand side of the image.

ESI Movie S3

In situ video movie during the exposure of an H_2O:NMP (1:1) solution containing 20 mM of a Cu^{2+}-neocuproine (1:2) complex to the X-ray beam. The movie is rendered at 2000% of the original speed. The beam enters the cuvette from approximately 50 % of the way up the right hand side of the image.

Table S1. Ligands, of which the copper complexes were tested for its susceptibility towards reduction under influence of the X-ray beam. The redox potentials, copper precursor salt type, copper concentration and metal-to-ligand ratio are indicated in the table.

Ligand	Reduction Potential (mV)	Counter anion	[Cu] in mM	Cu:L	Reduction Product
Neocuproine	+594	SO_4^{2-}	20	1:2	Cu^{+}
Imidazole	+317	SO_4^{2-}	100	1:4	Cu^{0}
		SO_4^{2-}	100	1:6	Cu^{0}
		Cl^{-}	100	1:4	Cu^{0}
		Cl^{-}	100	1:6	Cu^{0}
Ammonium	+308	NO_3^{-}	100	1:20	No Reduction
		SO_4^{2-}	100	1:20	No Reduction
		Cl^{-}	100	1:20	Cu^{0}
Pyridine	+304	SO_4^{2-}	100	1:4	No Reduction
		SO_4^{2-}	100	1:6	No Reduction
		Cl^{-}	100	1:10	Cu^{0}
		SO_4^{2-}	20	1:6	Cu^{0}
		SO_4^{2-}	20	1:10	Cu^{0}
		Cl^{-}	20	1:10	Cu^{0}
Terpyridine	-80	SO_4^{2-}	100	1:2	No Reduction
		Cl^{-}	20	1:2	No Reduction
Glycine	-160	Cl^{-}	20	1:2	Cu^{0}
		SO_4^{2-}	100	1:2	No Reduction
Histidine	-170	Cl^{-}	100	1:2	Cu^{0}
		SO_4^{2}	20	1:2	$Cu^{0\#}$
		SO_4^{2}	100	1:2	Cu^{0} but slower than$^{\#}$