

PHOTOCHEMISTRY OF MONOCHLORO COMPLEX OF COPPER (II) IN SOLUTION BY MEANS OF TRANSIENT ABSORPTION TIME-RESOLVED ULTRAFAST SPECTROSCOPY

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The photodissociation mechanism of copper (II) chloro complexes in methanol is studied by means of ultrafast broadband time-resolved deep-UV/UV/vis spectroscopy using $[Cu^{II}(MeOH)_5Cl]^+$ as a model molecule. Upon 255 nm excitation, the majority of $[Cu^{II}(MeOH)_5Cl]^+$ dissociate to form chlorine atoms $Cl\cdot$ and pentacoordinate copper(I) solvated complexes $[Cu^I(MeOH)_5]^+$, which is followed by recombination back to the parent molecules. A three body-dissociation in which the nascent $[Cu^I(MeOH)_5]^+$ fragment undergoes a methanol-ligand loss is observed to be of minor importance. The solvent influence on the photoreaction will be discussed.