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

A. S. MERESHCHENKO, P. EL-KHOURY, S. PAL, A. N. TARNOVSKY, *Bowling Green University, Department of Chemistry and Center for Photochemical Sciences, Bowling Green, Ohio 43403.*

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 penthacoordinate copper(I) solvated complexes $[Cu^{I}(MeOH)_5]^+$, which is followed by recombination back to the parent molecules. A three body-disscoation 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.