Coordination Chemistry of the Solvated Copper(II) Ion in a Series of Solvents

Eva G. Bajnoczi, Daniel Lundberg and **Ingmar Persson**

Dept. of Molecular Sciences, Swed. Univ. of Agricultural Sciences (SLU), Uppsala, Sweden

The structure of the hydrated copper(II) ion has been heavily debated the last 20 years. It was assumed for a long time that the hydrated copper(II) ion is six-coordinate in aqueous solution in Jahn-Teller distorted octahedral fashion as in most solid state structures.[1,2] However, it was proposed that the hydrated copper(II) ion is five-coordinate in distorted square-pyramidal fashion in water.[3] A large number of papers has been published on this issue since then proposing four-, five and six-coordination based on mainly EXAFS studies and theoretical simulations.[4-16] In order to study the coordination chemistry of hydrated and solvated copper(II) ions, solvents with different space-demanding properties at coordination to a metal ion have been studied using EXAFS. The data presented are one of the first ones collected at the Balder beam-line at MAX IV.

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