MS30-P20 Synthesis, structure and reactivity of $[Cu(phen)_2]BrO_2$ aerobic oxidation of Br^- to BrO_2^- at room temperature

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Unusual 4e oxidation of Br^- ion into a BrO_2^- ion occurred during the reaction between $CuBr^-$ and phenanthroline under air to form $[Cu(phen)_2]BrO_2$ complex. ESI-MS of the compound confirm the presence of BrO_2^- in the solution. Its oxidation reactivity is different from its analogue $[Cu(phen)_2]ClO_2$

Keywords: Aerobic oxidation / Broride ion / Brorite ion / Copper

MS30-P21 The effect of weak interactions on the shape of cadmium(II) coordination polymers with pyridine-based hydrazines

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Coordination polymers are infinite systems build up from metal ions and organic ligands (linkers) as the main units assembled via coordination bonds and weak interactions (hydrogen bonds, π–π interactions, metal-metal interactions, metal-aromatic interactions) [1]. Coordination polymers can extend in one, two or three dimensions. The 1D motif can be represented by linear, zigzag, double, ladder-like chains or helices. 2D and 3D coordination polymers are often called metal-organic frameworks (MOF). These materials have been used in crystal engineering due to their structural diversity and their applications as porous materials, in catalysis, ion exchange and gas storage [2]. Coordination polymers can also have other interesting properties e. g. nonlinear optics, luminescence and magnetism. We have prepared a series of cadmium(II) coordination polymers with isoniazid and niazid and various counterions (chloride, bromide, iodide, thiocyanate). Isonicotinylhydrazine (isoniazid) and nicotinylhydrazine (niazid) are suitable linkers for construction of coordination polymers as they are multidentate ligands - *N,O*-bidentate and *N*-bridging. They are capable of satisfying cadmium(II) coordination number (usually 5-7) by acting as *N,O*-bidentate ligands and they bridge the metal ions at the same time (via pyridine N atom). The aim of our study was to determine the effect of the counterions size, shape and their involvement in weak interactions on dimensionality of cadmium(II) polymers with isoniazid and niazid. In case of chloride and bromide use, we obtained 1D polymers with double chains, linked via chloride/bromide bridging atoms (Fig. 1a), while in case of iodide use, a 1D polymer with zigzag chain was formed, containing terminal iodide ions only. A 2D polymer was obtained by using thiocyanate ion, as it is an ambidentate ligand with N and S donor atoms, enabling the formation of a network (Fig. 1b). The polymers were also studied by IR spectroscopy, PXRD and thermal methods (TG/DTA, DSC) and various crystallization techniques were employed to get suitable single crystals for X-ray structure analysis.

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