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Report:

We investigated three samples of complex Antomony Polyoxometalates. Due to the unusual properties of the heteropolyanions (high charges and ionic weights, oligometric cluster structures. etc) these substances show promising catalytical and medical applications. Functional derivatives attached to the oxide surface of the polyanion are prepared for the investigation of catalytic properties and systematic investigations were studied to probe the cytostatic properties for cancer therapy or the possible application in the treatment of AIDS. Especially polyoxotungstates containing antimony are very effective in the field of anti-HIV activity and anti-tumor action.

Four compounds were prepared for the experiment: poyoxometalates containing Fe, Ru. Co and Mn. The crystals are grown in aqueous solution and form small stubby needles of approximately 40*20* 10 μm^3. The crystals are not stable under ambient conditions but oxidize rapidly. The Mn compound oxidizes within a few minutes and could not be prepared for single crystal diffraction experiments at all.

The other compounds were dried and rapidly mounted onto thin glas rods. It was necessary to cover the samples with a thin film of parafin oil to prevent oxidation. These specimens

were stable enough for single crystal diffraction experiments.

The experiments were carried out at beamline ID1 I. The diffraction experiments consisted of a series of exposures using short oscillations. A CCD detector was used for the data collection. The exposures were repeated with different exposure times to enlarge the dynamic range of the detector.

Several crystals of each composition were screened for crystal quality. Due to the small sample size and limited stability this screening could not be performed at a laboratory source beforehand. Most of the crystals showed low quality manifested by a lager mosaic. For the iron and rubidium compound only one crystal were available each for the final data collection. two crystals. oriented approximately at 90” to each other could be used for the cobalt compound.

The raw data were corrected for spatial distortion and local variations of the CCD sensitivity.

Futher data evaluation and stucture determination are under way.