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**Reinecke Anion as a Building Block in Designing of Heterometallic Cr(III) Complexes.** D. Shevchenko<sup>1</sup>, V. Nikitina<sup>1</sup>, V. Kokozay<sup>1</sup>, V. Dyakonenko<sup>2</sup>, O. Shishkin<sup>2</sup>, <sup>1</sup>Kyiv National Taras Shevchenko Univ., Volodymyrska St 64, Kyiv, 01033 Ukraine, <sup>2</sup> STC "Inst. for Single Crystals", National Academy of Sciences of Ukraine, 60 Lenin Ave, Kharkiv, 61001 Ukraine.

The search for new metal-containing building blocks is of current interest in molecular magnetism and in crystal engineering. It is well known that the thiocyanato anion acts as a bridge between either identical or different metal ions. Nevertheless, the thiocyanato complexes have rarely been used in assembling heterometallic architectures. A very appealing complex in this respect is the anion of the Reinecke salt,  $[\text{Cr}(\text{NCS})_4(\text{NH}_3)_2]^-$ , which can interact with the second metal ion through the sulphur atom. Moreover, the family of such type building blocks can be extended by replacing the  $\text{NH}_3$  ligands from the Reinecke anion with organic molecules that can act as bridges. The series of the Cu(II)/Cr(III) heterometallic complexes have been prepared by the direct synthesis from the following systems:  $\text{Cu}^0$ -  $\text{NH}_4[\text{Cr}(\text{NCS})_4(\text{NH}_3)_2] \cdot \text{H}_2\text{O}$ -L-solvent (L = ethylenediamine or its derivatives). It was found that the nuclearity of complexes (2, 3, 5, polymeric), which was determined by means of X-ray measurements, depends on a reagent ratio and a solvent.

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