## SYNTHESIS AND CRYSTAL STRUCTURE OF SODIUM HETEROPOLY DECATUNGSTOTERBATE(III) $Na_9[Tb(W_5O_{18})_2]\cdot 34H_2O$

*Mariichak O. Yu.*, Rozantsev G. M., Radio S. V.
Vasyl' Stus Donetsk National University, Ukraine
o.marijchak@donnu.edu.ua

In present study the procedure for successful synthesis of sodium heteropoly decatungstoterbate(III), $Na_9[Tb(W_5O_{18})_2]\cdot 34H_2O$, from acidified up to $Z=\nu(H^+)/\nu(WO_4^{2-}) = 0.80$ solution of sodium tungstate with a ratio of $\nu(Tb):\nu(W) = 1:10$ from aqueous-acetone media was elaborated.

By FT-IR spectroscopy and elemental analysis it was shown that the anion in the synthesized salt belong to Peacock-Weakley type of anion. The crystal structure of synthesized salt was determined by single crystal X-ray diffraction analysis (see Fig. 1). The main crystallographic data are: triclinic, space group P–1 with a=12.891(4), b=13.011(4), c=19.659(5); α=95.72(3), β=92.61(3), γ=102.25(3); V=3198.63 $Å^3$, M=3324.33 g/mol, and Z=2.

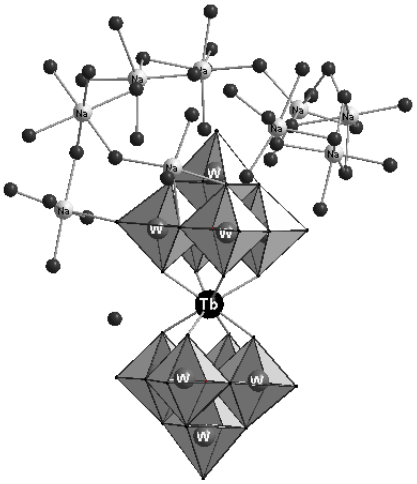


Fig. 1. Crystal structure of $Na_9[Tb(W_5O_{18})_2]\cdot 34H_2O$

Obtained result complements existing data on the synthesis and study of the crystal structure of Tb(III)–containing heteropoly compounds with Peacock-Weakley type of anion among which only double potassium sodium acid salt $K_3Na_4H_2[TbW_{10}O_{36}]\cdot 20H_2O$ [1], and neutral and deuterated salts $Na_9[Tb(W_5O_{18})_2]\cdot 35H_2O$ [2] were known.

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