

## Supplementary Materials.

### Polytypism and oxo-tungsten polyhedra polymerization in novel complex uranyl tungstates

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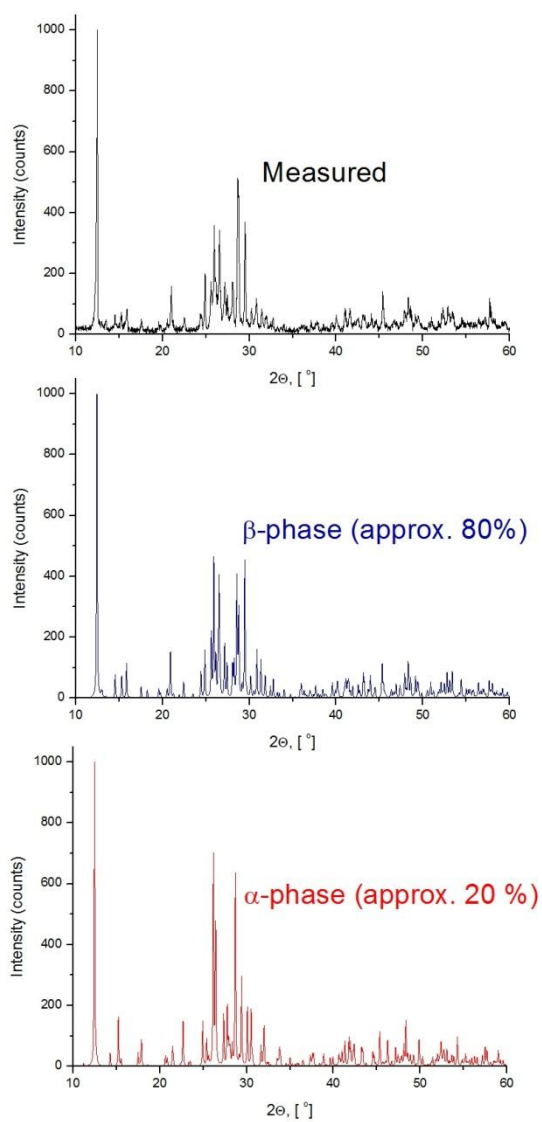


Figure 1 . Theoretical PXRD of 1(red) and 2(blue) and experimental pattern measured from their mixture.

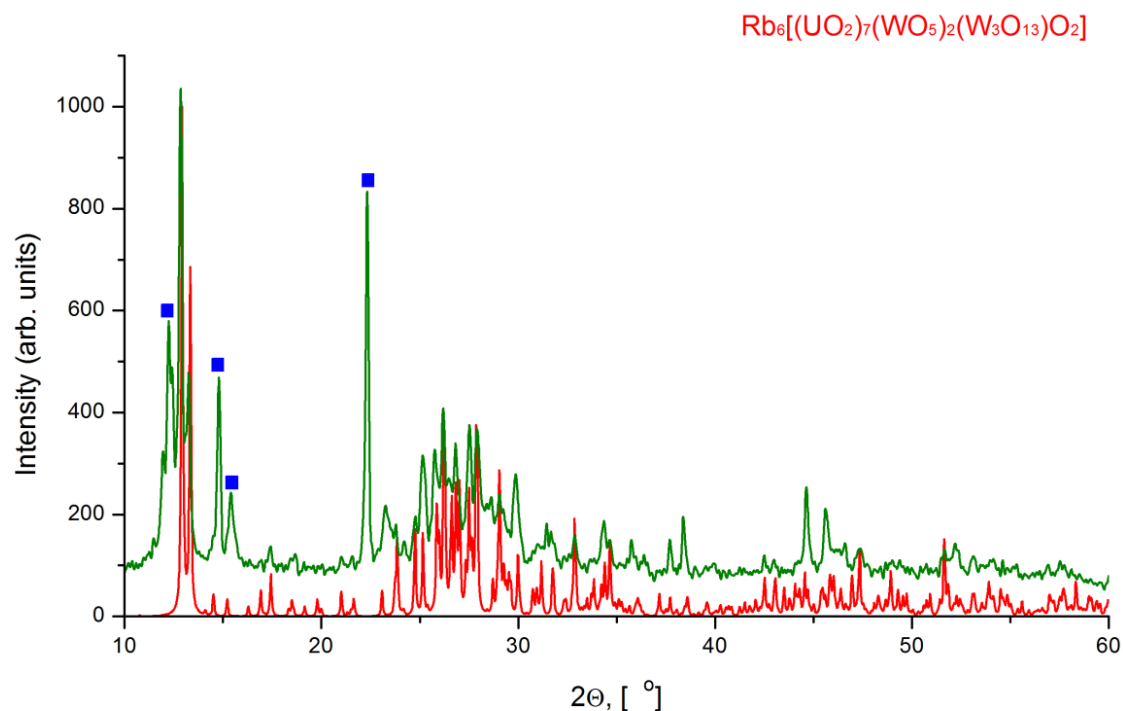


Figure 2. Theoretical (red) and measured (green) pattern of 3. The peaks of impurities are shown by blue boxes. The impurities are mostly presented by  $\text{R}_2\text{U}_2\text{O}_7$ ,  $\text{Rb}_2\text{W}_2\text{O}_7$  and  $\text{UO}_2\text{WO}_4$ .

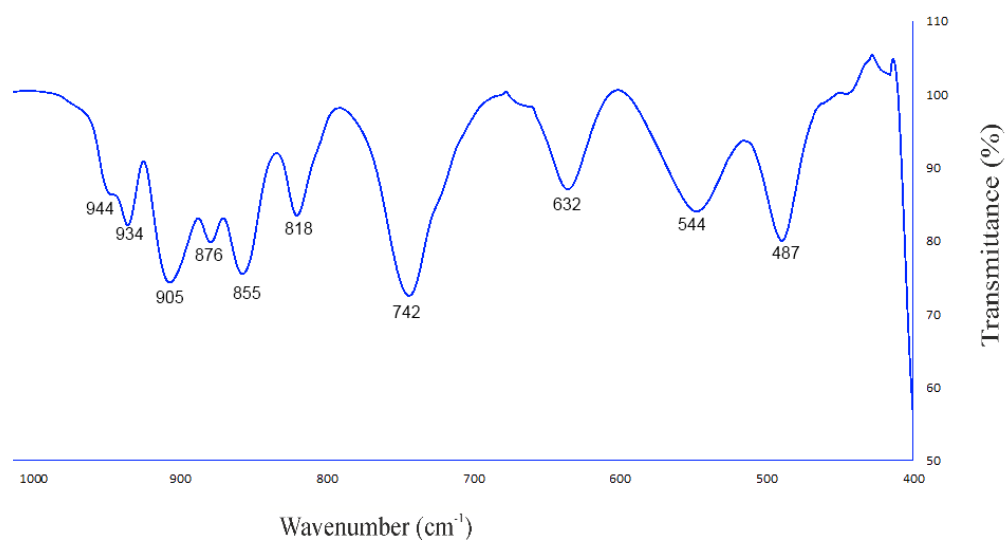


Figure 3. The IR spectra collected from mixture of 1 and 2. The phases are based on identical molecular fragments. The following bands assignment can be given:  $944\text{ cm}^{-1}$  and  $934\text{ cm}^{-1}$  are absorption bands of short tungstoyl groups ( $\text{W}=\text{O}$ );  $905\text{ cm}^{-1}$  and  $818\text{ cm}^{-1}$  are  $\nu_3$  and  $\nu_1$  modes of  $\text{UO}_2^{2+}$  group;  $876\text{ cm}^{-1}$ ,  $855\text{ cm}^{-1}$  and  $818\text{ cm}^{-1}$  are absorption bands of  $\text{W}-\text{O}$  bonds in trigonal bipyramids  $\text{WO}_5$ ; the bands at  $632\text{ cm}^{-1}$ ,  $544\text{ cm}^{-1}$  and  $487\text{ cm}^{-1}$  are vibrations of  $\text{W}-\text{O}-\text{U}$  bonds.