Synthesis of the compounds

The Polyoxotungstates (POTs) used in this study were synthesized according to the previously reported procedures (ref.52)

$Na_6[H_2W_{12}O_{40}]\cdot 2H_2O$ (Na-$W_{12}O_{40}$): Compound **Na-$W_{12}O_{40}$** was synthesized using ammonium (meta)-tungstate $(NH_4)_6[H_2W_{12}O_{40}]$ and sodium ion-exchange using column of Dowex 50WX8. Ethanol was added to the resulting solution which led to the precipitation of the final product.

$Na_{20}[P_6W_{18}O_{79}]\cdot 37H_2O$ (Na-P_6W_{18}): It was synthesized by the following procedure, glacial acetic acid (8.4 mL) was added slowly to a solution containing 50 g of $Na_2WO_4\cdot 2H_2O$ and 3.5 mL of 85% H_3PO_4 in 50 mL of water. After evaporation at 100 °C a good yield of white crystalline precipitates were obtained.

$Na_{33}H_7[P_8W_{48}O_{184}]\cdot 92H_2O$ (Na-P_8W_{48}): It was prepared by a similar ion-exchange method as mentioned for **Na-$W_{12}O_{40}$**.

$Na_{16}[(O_3POPO_3)_4W_{12}O_{36}]\cdot 38H_2O$ (Na-OP_8W_{12}) and $Na_{16}[(O_3PCH_2PO_3)_4W_{12}O_{36}]\cdot 16H_2O$ (Na-OCP_8W_{12}): These compounds were in the following method, for **Na-OP_8W_{12}**, 50 mL of 0.5 M sodium diphosphate was added to 150 mL of 0.5 M sodium tungstate solution in H_2O at room temperature and pH was adjusted to 4 with conc. HCl. For compound **Na-OCP_8W_{12}**, methylenediphosphonic acid was used instead of sodium diphosphate and pH was adjusted to 6. The final products were obtained by addition of dimethyl sulfoxide to the resulting solutions.

$Na_{10}[H_2W_{12}O_{42}]\cdot 27H_2O$ (Na-$W_{12}O_{42}$): The compound was synthesized by the following method, 5 g of $Na_2WO_4\cdot 2H_2O$ was dissolved in 10 mL H_2O, followed by addition of HCl (~10%) until pH 7.4, with continuous stirring. Resulting solution was filtered and crystallized at room temperature. The colorless crystals appeared within few days.

$Na_6[TeW_6O_{24}]\cdot 22H_2O$ (Na-TeW_6): Compound **Na-TeW_6** was synthesised in the following way,

5.00 g of $Na_2WO_4 \cdot 2H_2O$ and 0.60 g of $Te(OH)_6$ were dissolved in 100 mL H_2O. A 1 M HCl was used to adjust pH at 5.0. The resulting solution was heated at 100 °C. After 25% reduction in volume, it was cooled, filtered and allowed to crystallize at room temperature. Colorless crystals of **Na-TeW$_6$**were obtained after ca. one week, filtered off and air dried.

The identification of the products were achieved using modern spectroscopic methods, i.e. FT-IR and ^{183}W NMR spectrometry.