

Supplementary Materials: Single-Crystal-to-Single-Crystal Anion Exchange in a Gadolinium MOF: Incorporation of POMs and $[\text{AuCl}_4]^-$

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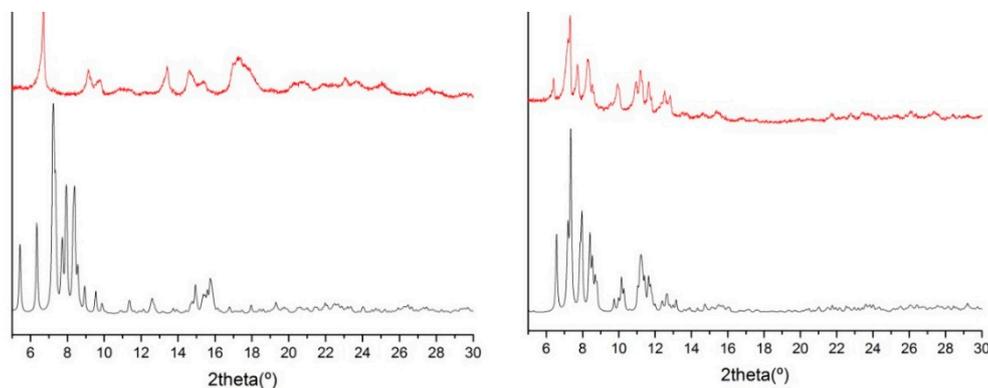


Figure S1. X-ray powder patterns of **1** (left) and **1- W_6O_{19}** , (right). The experimental patterns are shown in red and the calculated pattern from single crystal data are shown in black. It can be clearly seen that whereas the structure of **1** collapses upon solvent removal, **1- W_6O_{19}** , remains stable.

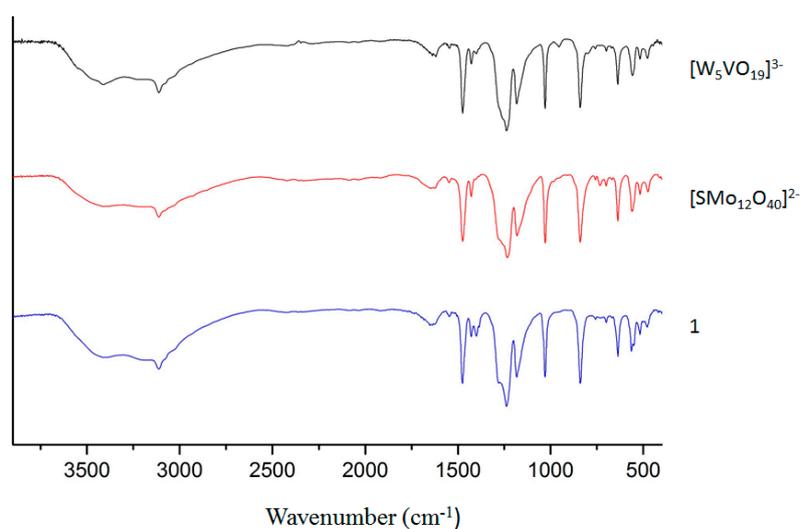


Figure S2. Infrared spectra of pristine **1** and after the unsuccessful anion exchange with $[\text{SMo}_{12}\text{O}_{40}]^{2-}$ and $[\text{W}_5\text{VO}_{19}]^{3-}$ POMs.

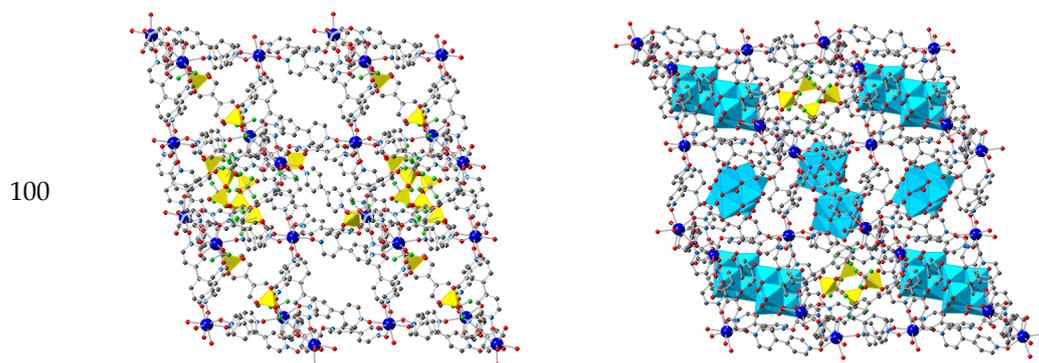


Figure S3. Cont.

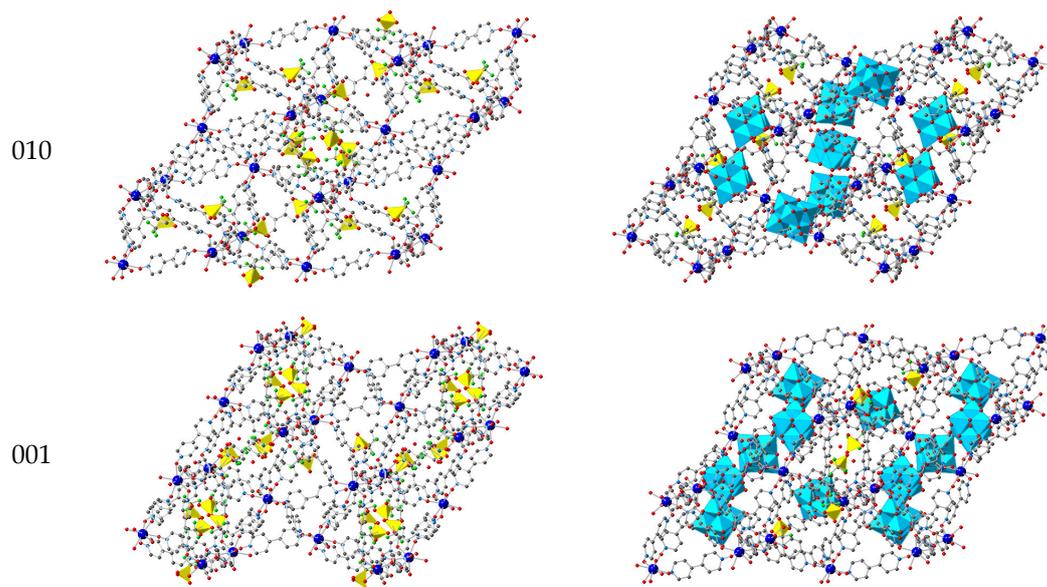


Figure S3. Views along the (100), (010) and (001) directions (**left, middle and right**, respectively) of the crystal structures of **1** and **1-W₆O₁₉**.

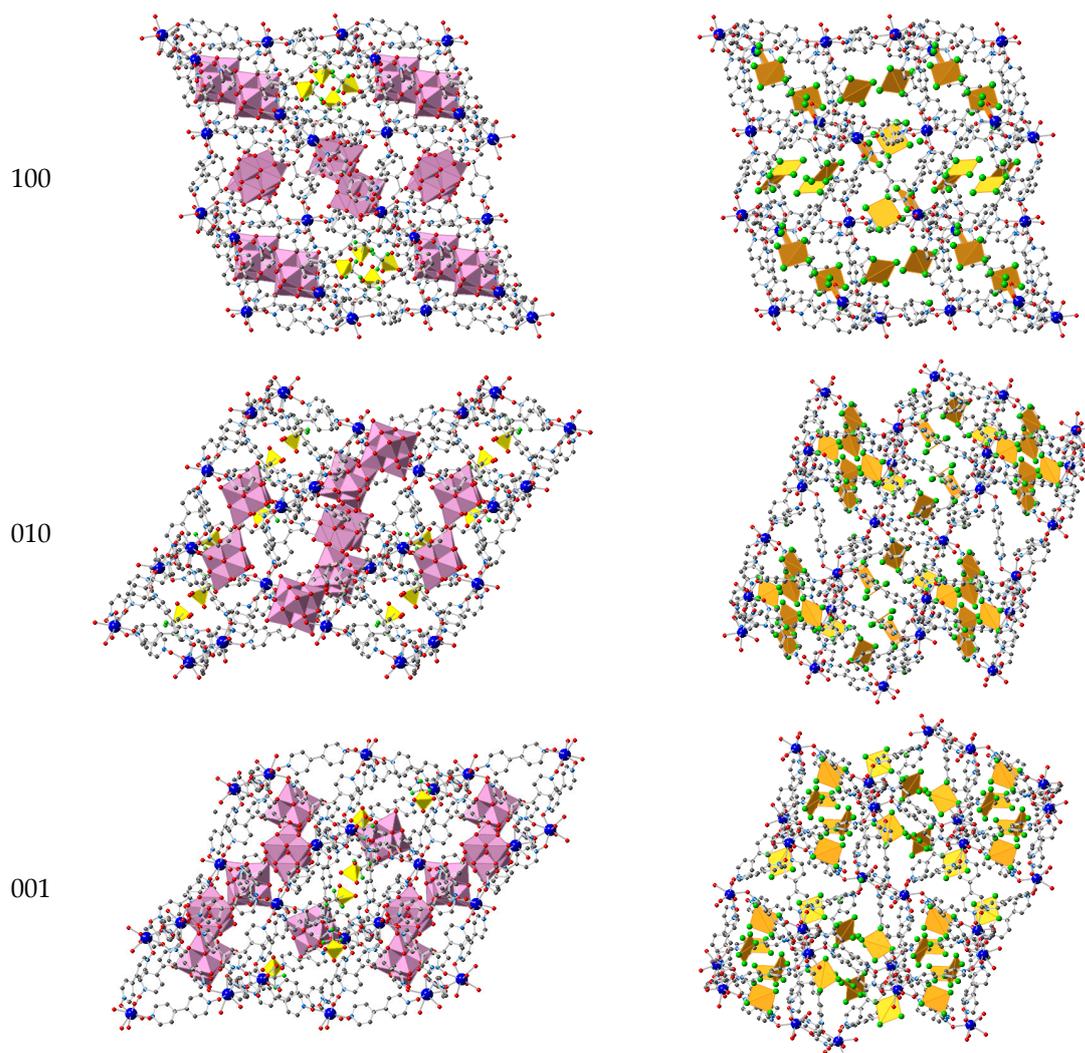


Figure S4. Views along the (100), (010) and (001) directions (**left, middle and right**, respectively) of the crystal structures of **1-Mo₆O₁₉** and **1-AuCl₄**.

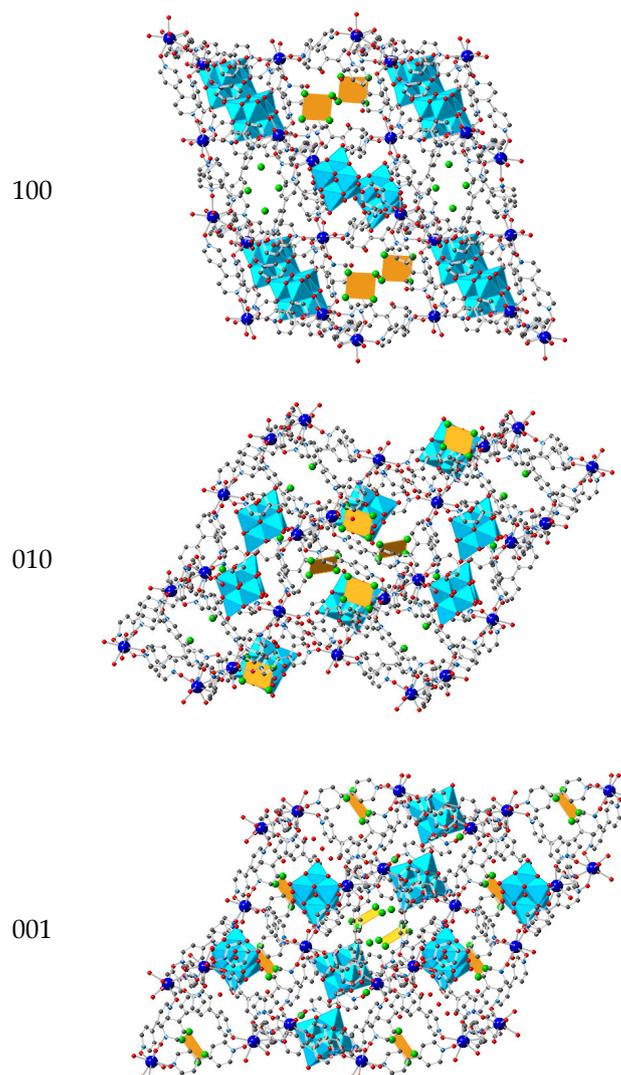


Figure S5. Views along the (100), (010) and (001) directions (**left**, **middle** and **right**, respectively) of the crystal structure of $1\text{-W}_6\text{O}_{19}\text{-AuCl}_4$.



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