Supplementary Materials: Single-Crystal-to-Single-Crystal Anion Exchange in a Gadolinium MOF: Incorporation of POMs and $[AuCl_4]^-$

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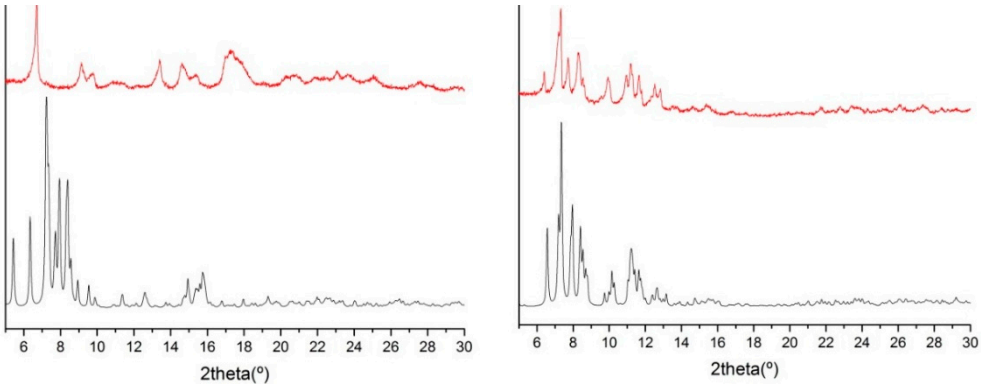


Figure S1. X-ray powder patterns of **1** (**left**) and **1–W$_6$O$_{19}$**, (**right**). The experimental patterns are shown in red and the calculated pattern from single crystal data are shown in black. It can be clearly seen that whereas the structure of 1 collapses upon solvent removal, **1–W$_6$O$_{19}$**, remains stable.

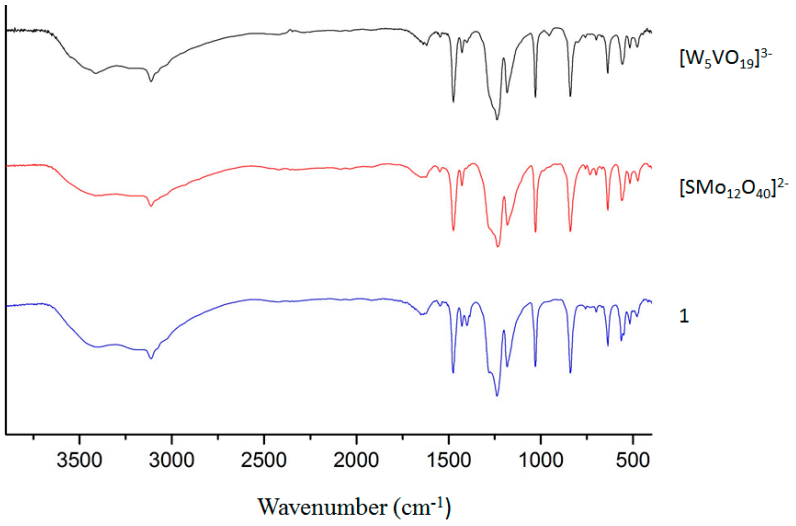
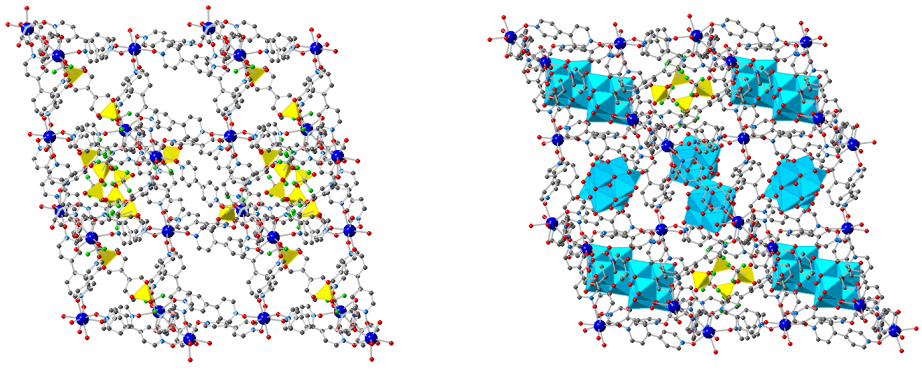


Figure S2. Infrared spectra of pristine **1** and after the unsuccessful anion exchange with $[SMo_{12}O_{40}]^{2-}$ and $[W_5VO_{19}]^{3-}$ POMs.



100

Figure S3. *Cont.*

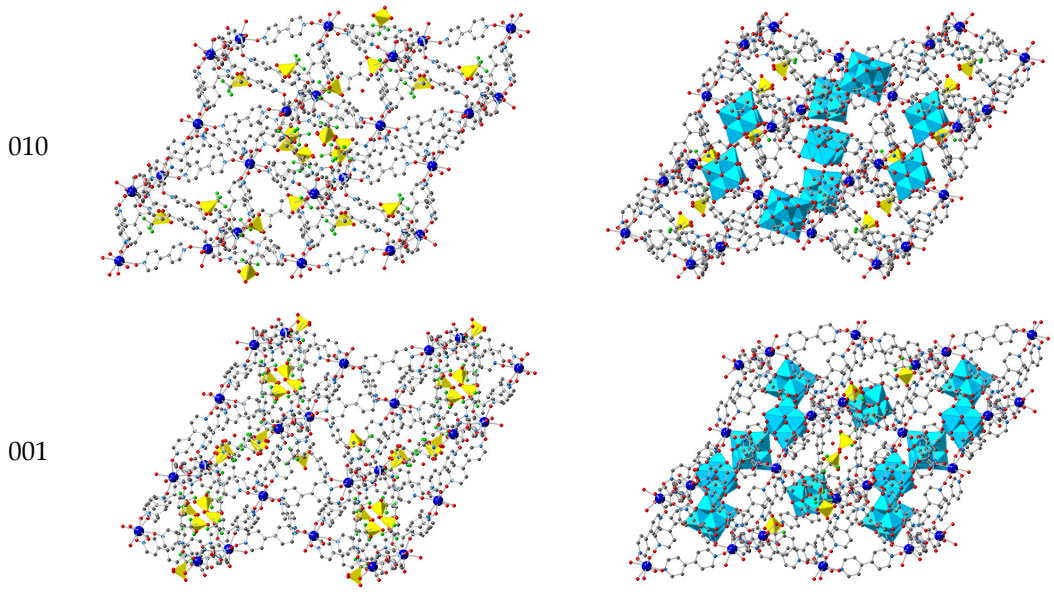


Figure S3. Views along the (100), (010) and (001) directions (**left**, **middle** and **right**, respectively) of the crystal structures of **1** and **1–W_6O_{19}**.

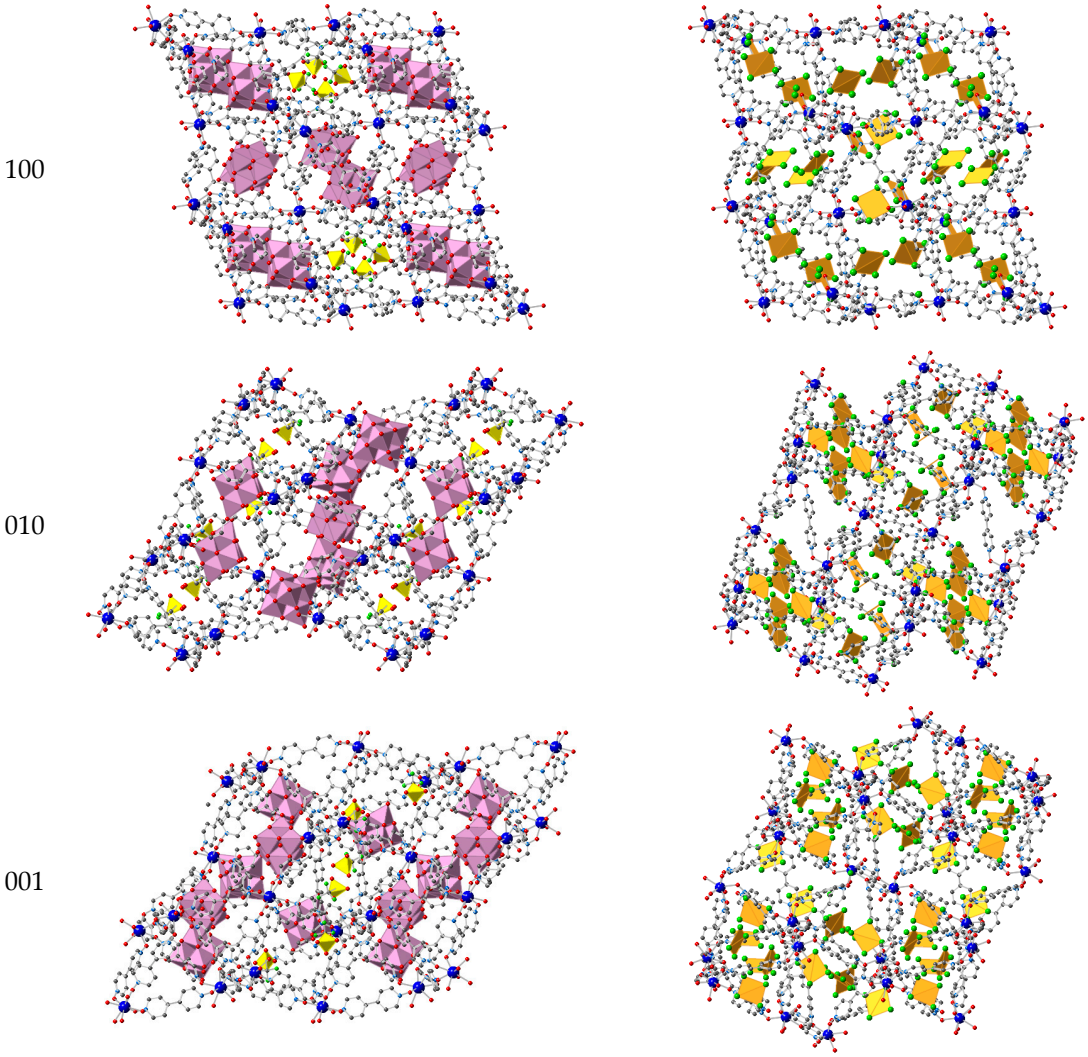


Figure S4. Views along the (100), (010) and (001) directions (**left**, **middle** and **right**, respectively) of the crystal structures of **1-Mo_6O_{19}** and **1-$AuCl_4$**.

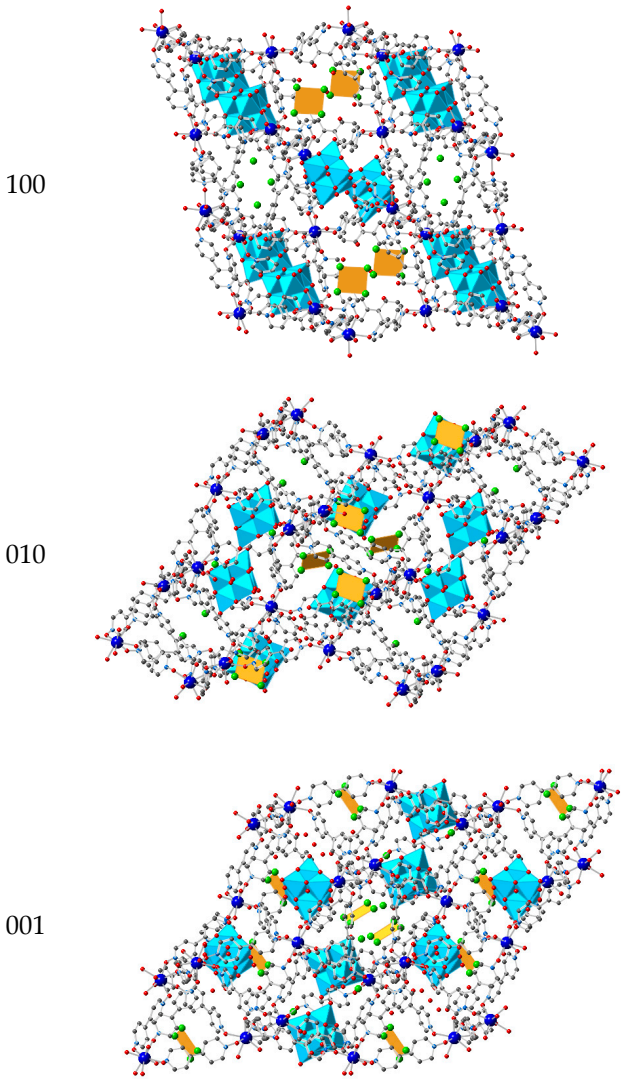


Figure S5. Views along the (100), (010) and (001) directions (**left**, **middle** and **right**, respectively) of the crystal structure of **1–W_6O_{19}–$AuCl_4$**.