

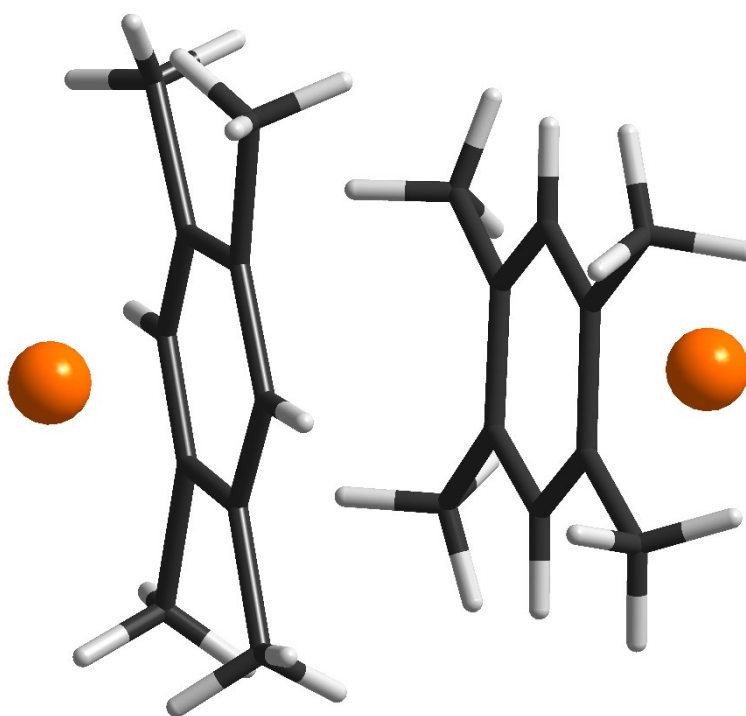
## Interactions of aromatic rings in the crystal structures of hybrid polyoxometalates and Ru clusters

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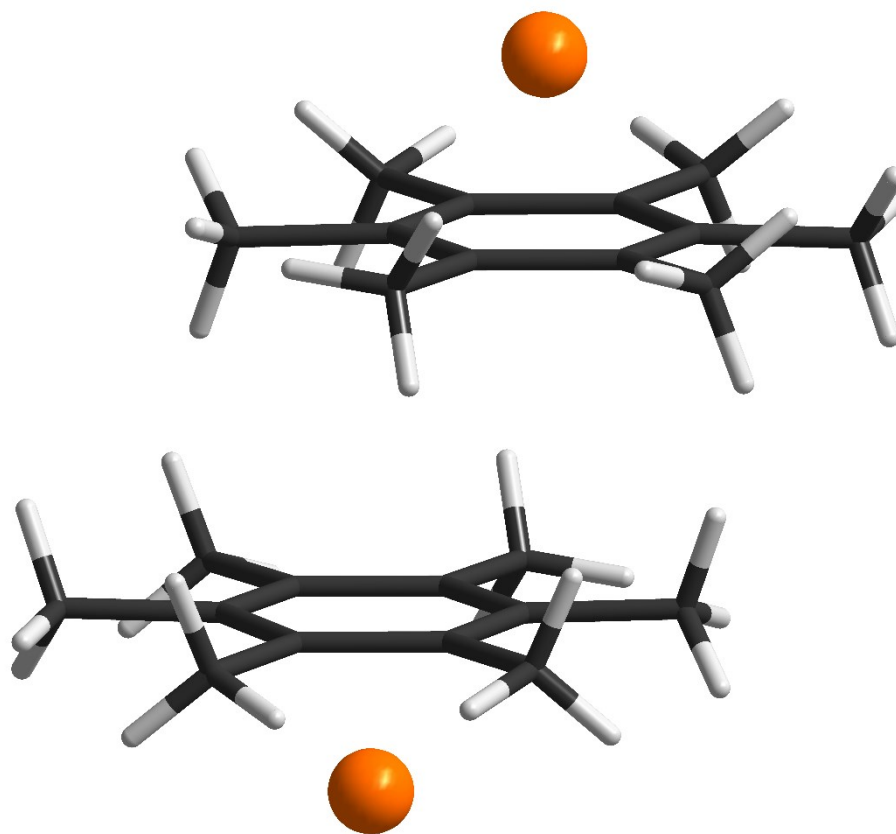
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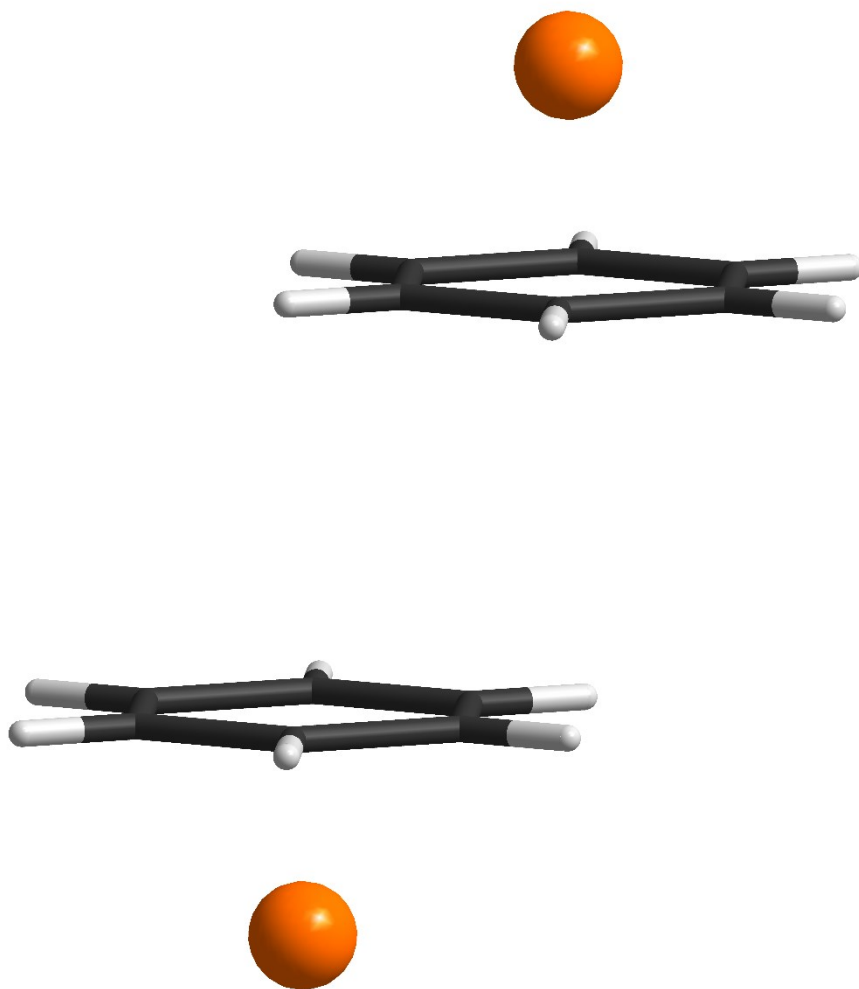
### Supporting information



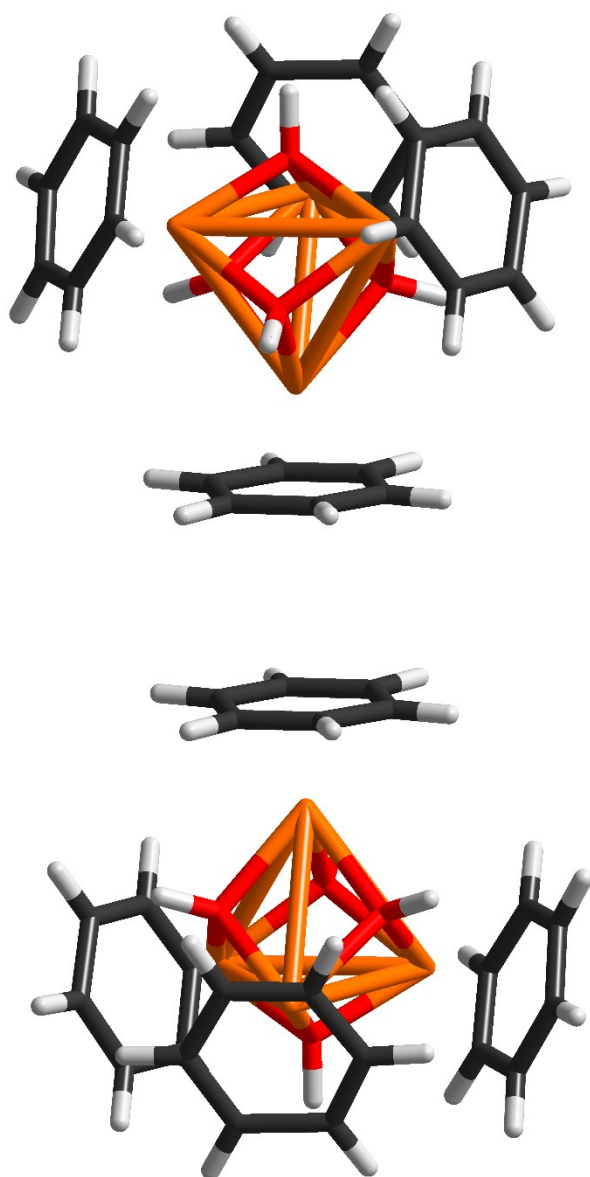
**Figure S1.** The adoptive geometry of two interacting C<sub>6</sub>H<sub>2</sub>(CH<sub>3</sub>)<sub>4</sub> ligands in the crystal structure of ASANEN.



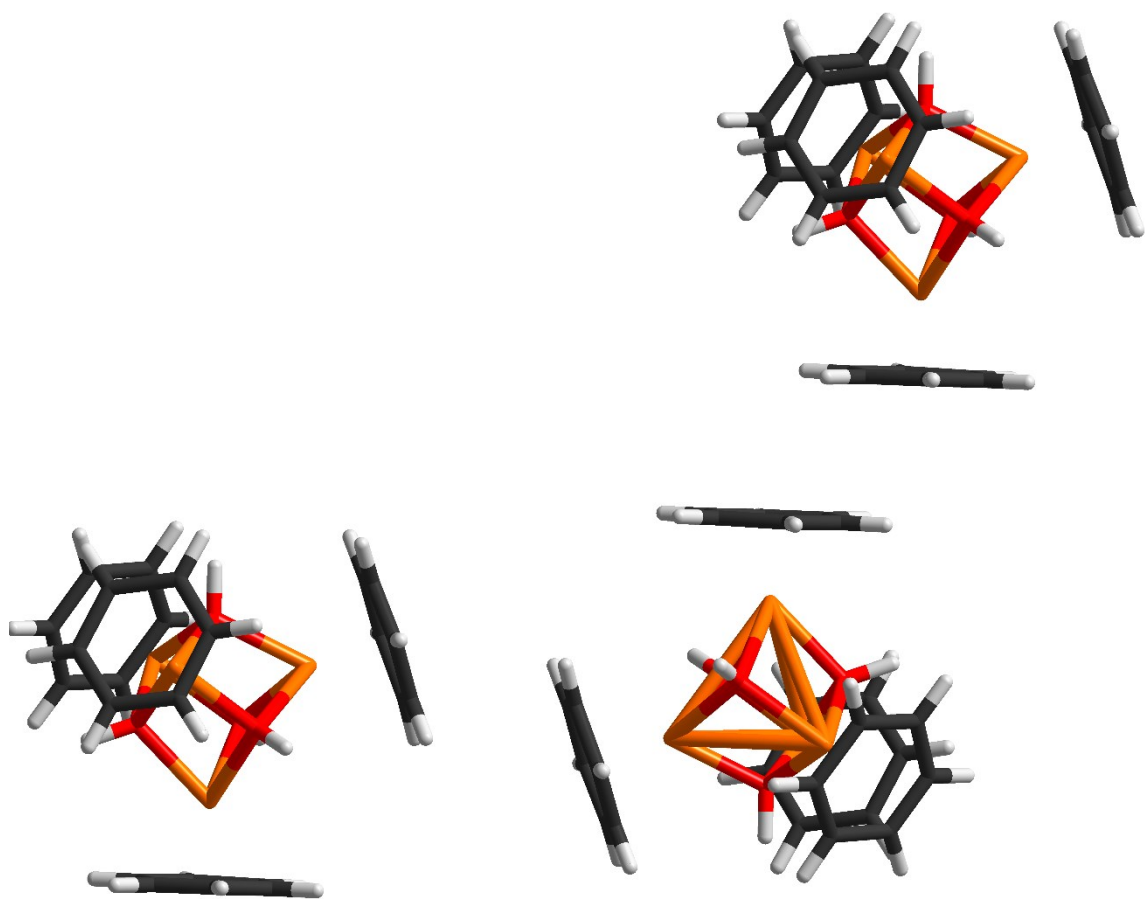
**Figure S2.** The geometry of two interacting C<sub>6</sub>(CH<sub>3</sub>)<sub>6</sub> ligands in the crystal structure of CINQEV01.



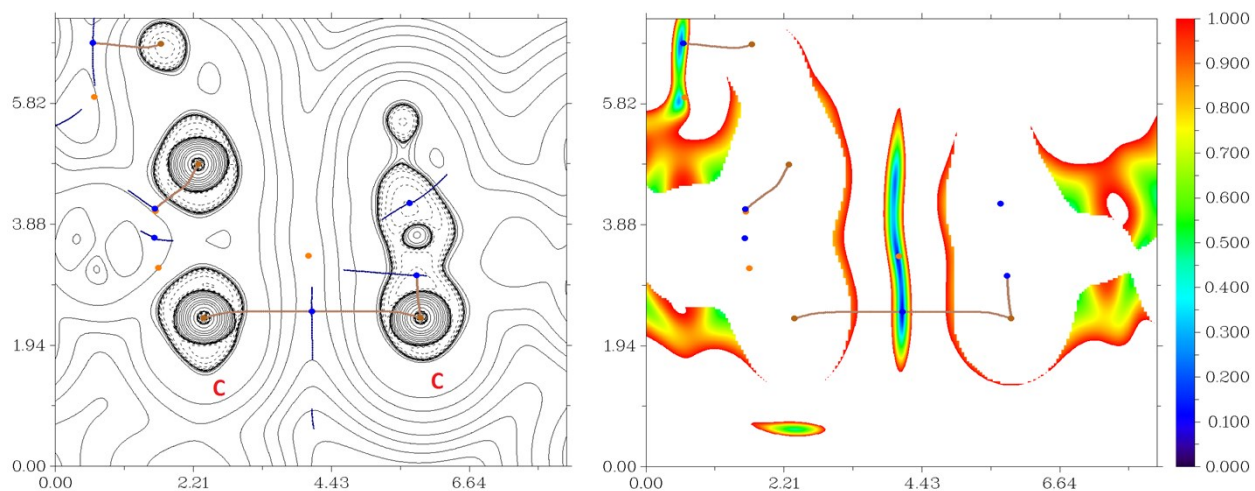
**Figure S3.** The geometry of two interacting C<sub>6</sub>H<sub>6</sub> ligands in the crystal structure of DUZGIP.



**Figure S4.** Strong  $\pi$ - $\pi$  interactions in the crystal structure of QEWOYOG.



**Figure S5.** Weak  $\pi$ - $\pi$  interactions in the crystal structure of QEWYOG.



**Figure S6.** Contour line diagram of the Laplacian of electron density distribution  $\nabla^2\rho(\mathbf{r})$ , bond paths, and selected zero-flux surfaces (left panel) and visualization of reduced density gradient (RDG, right panel) for one of C $\cdots$ C contact corresponding to intermolecular stacking interactions in the X-ray structure **CIBZUJ**. Bond critical points (3, -1) are shown in blue, nuclear critical points (3, -3) – in pale brown, ring critical points (3, +1) – in orange, bond paths are shown as pale brown lines, length units – Å, and the color scale for the RDG map is presented in a.u.