

Supporting Information

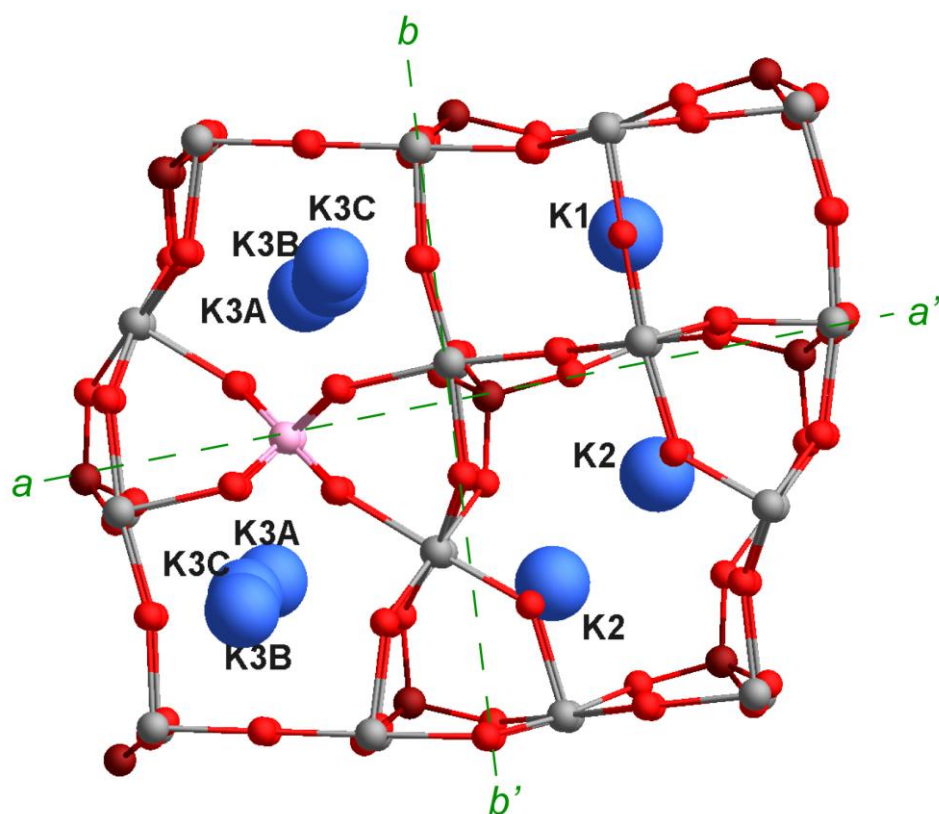


Figure S1. View of a stacking of fundamental building blocks. Dashed lines (a - a' , b - b') display conventional direction of this fragment to derive intersections of the secondary building.

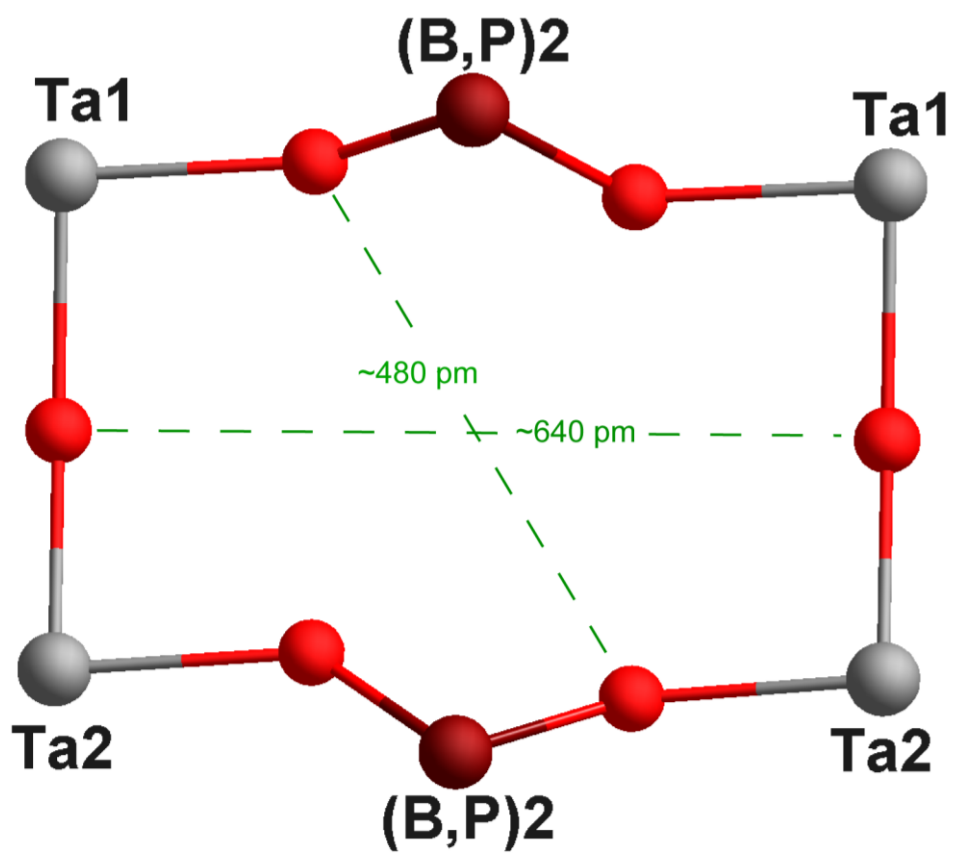


Figure S2a. Cyclic window-like intersection of fundamental building blocks in a frame $b-a'$.

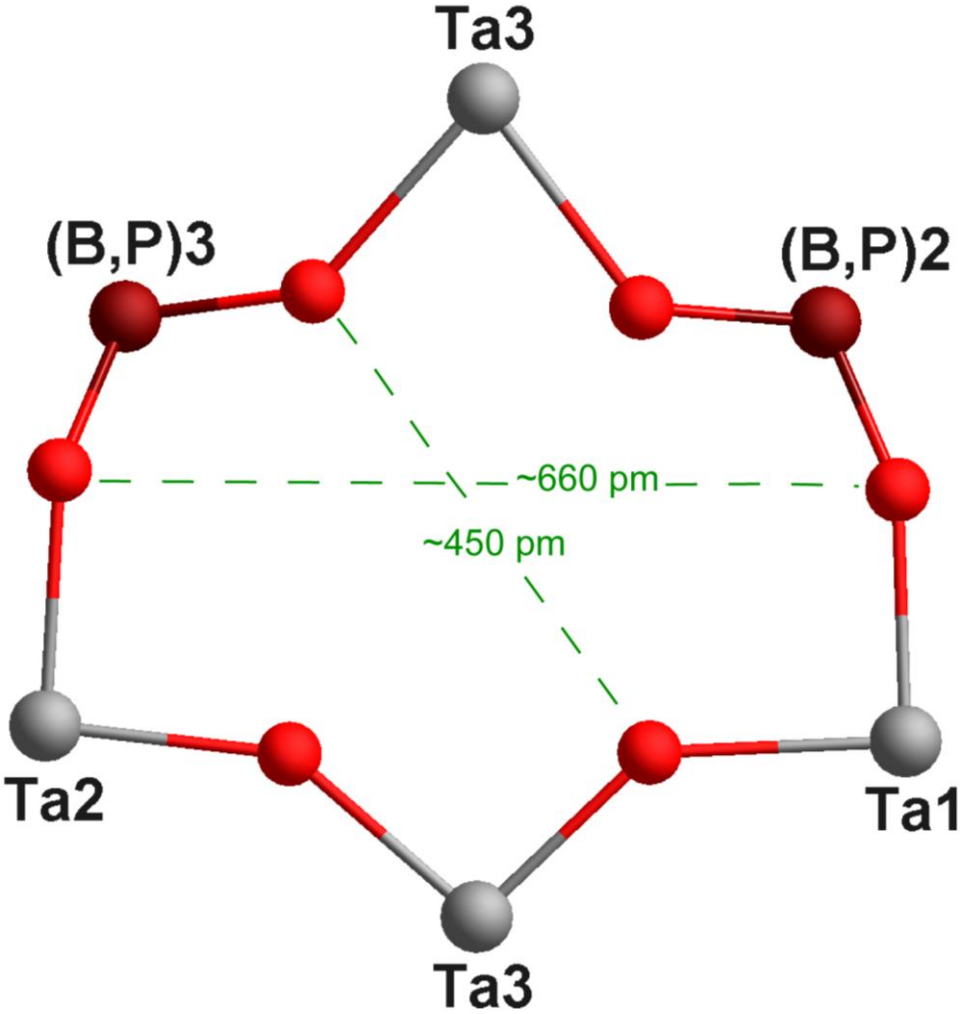


Figure S2b. Cyclic window-like intersection of fundamental building blocks in a frame $a'-b'$.

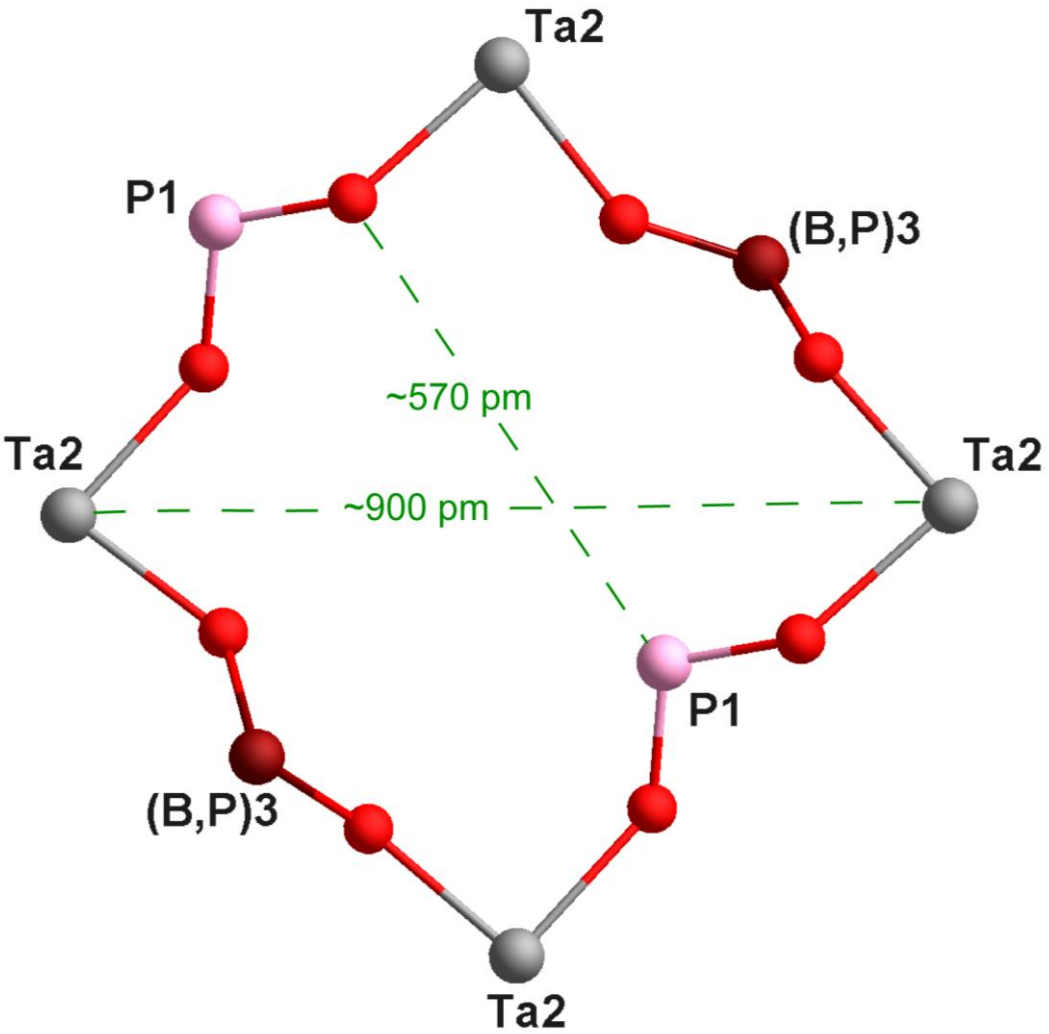


Figure S2c. Cyclic window-like intersection of fundamental building blocks in a frame $b'-a$.

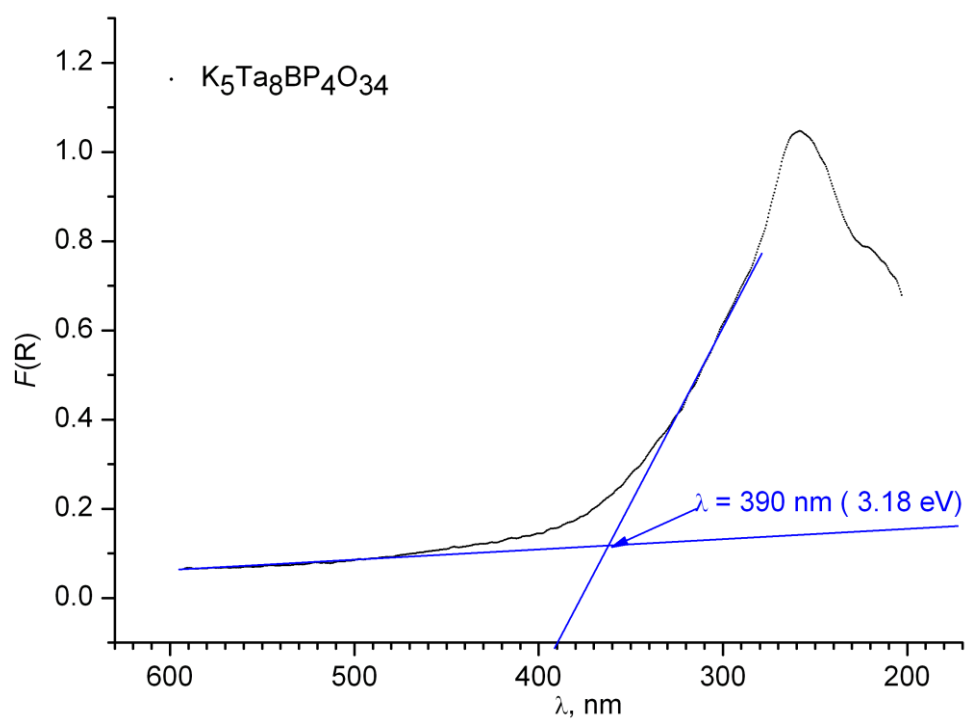


Figure S3. Measured UV-Vis diffuse electron spectra for $K_5Ta_8BP_4O_{34}$ with the onset of absorption edges labelled

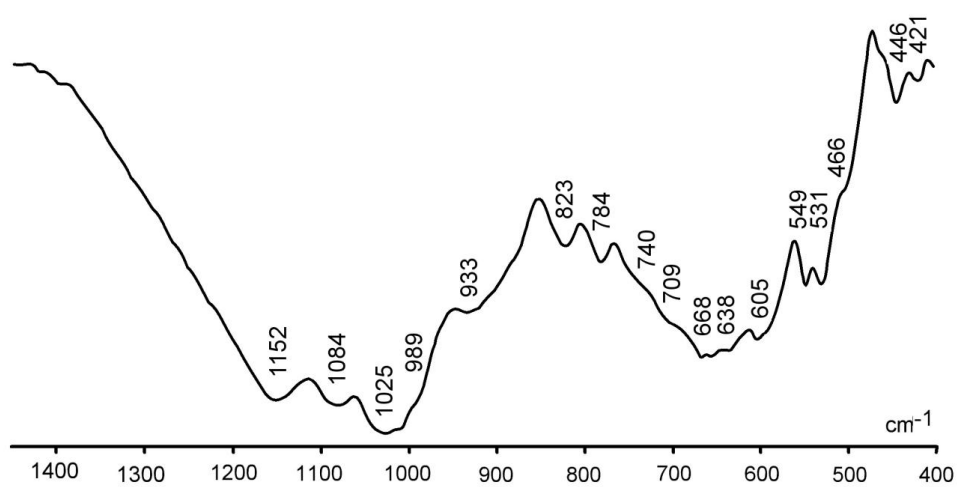


Figure S4. FTIR spectrum of $K_5Ta_8BP_4O_{34}$

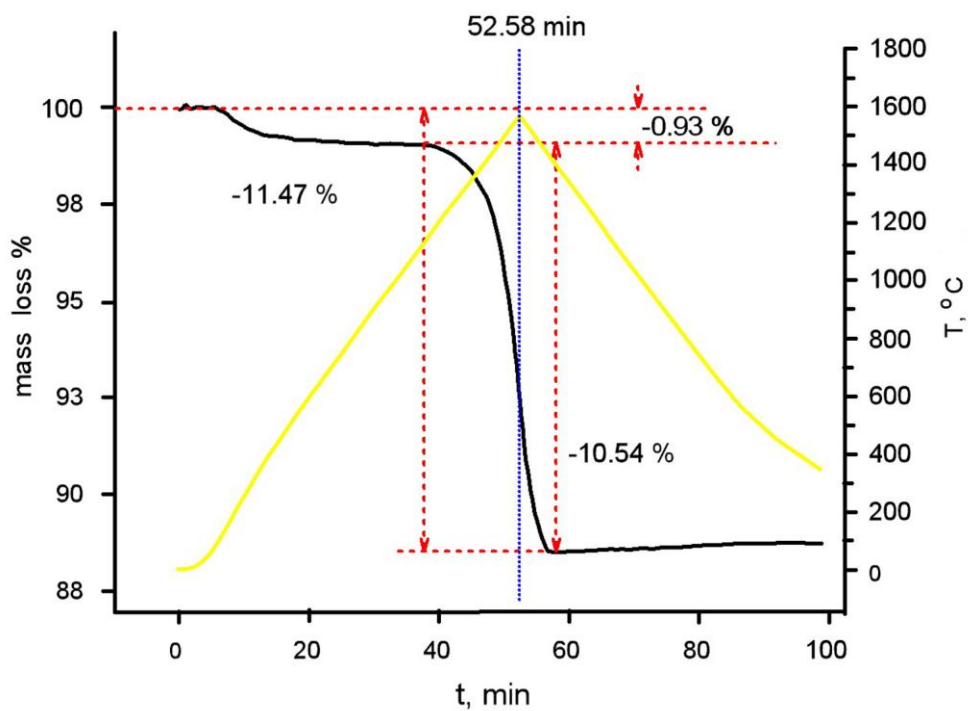


Figure S5. Thermogravimetric analysis of $K_5Ta_8BP_4O_{34}$

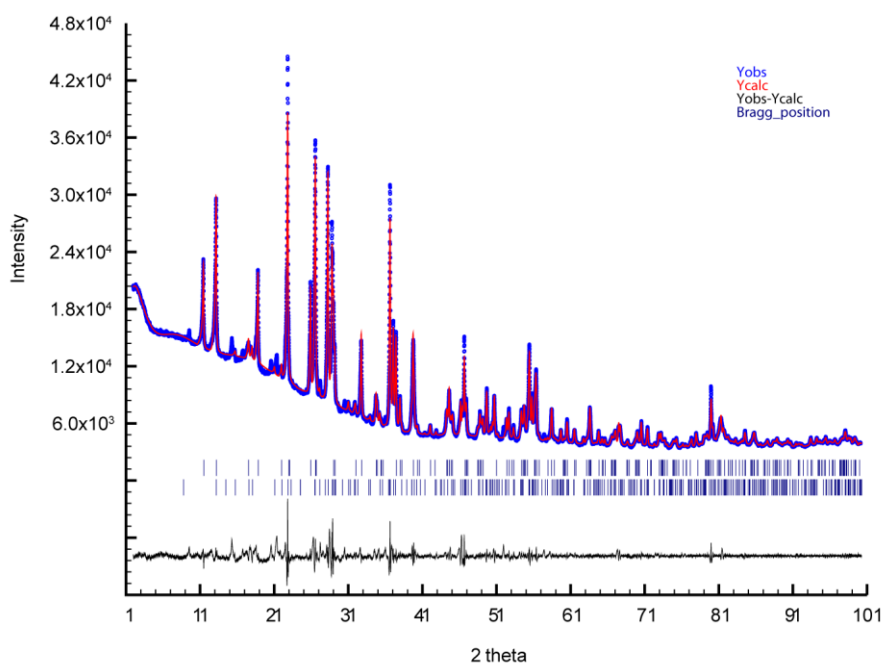


Figure S6. Le Bail profile matching of residual phases after thermogravimetric analysis (Y_{obs} is a blue crosses, Y_{calc} is a red line, $Y_{obs} - Y_{calc}$ is black line, Bragg positions are marked with dark blue vertical ticks).

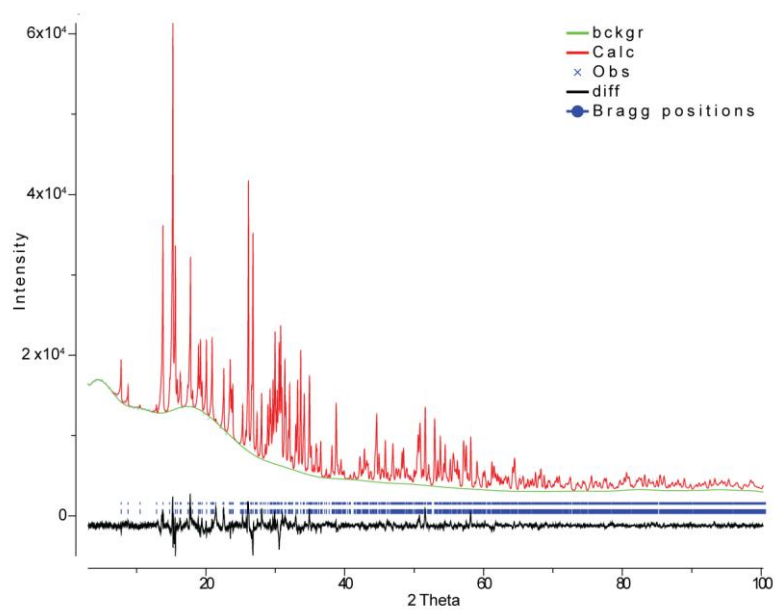


Figure S7. Rietveld refinement plot of as-synthesized $K_5Ta_8BP_4O_{34}$ (Y_{obs} is a blue crosses, Y_{calc} is a red line, $Y_{obs}-Y_{calc}$ is black line, Bragg positions are marked with dark blue vertical ticks).