

Electronic Supplementary Information

Observation of microporous cesium salts of 12-tungstosilicic acid by scanning transmission electron microscopy

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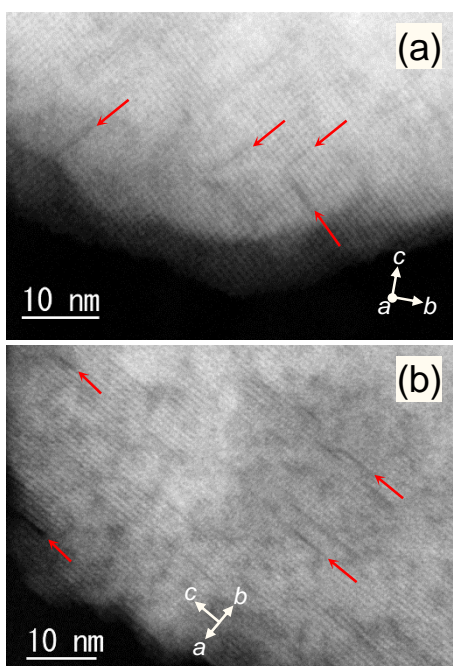


Fig. S1 Low-pass filtered HAADF images of **Cs_{2.5}** taken along the [100] (a) and [110] (b) directions. Red arrows indicate dark lines parallel to the {110} planes.

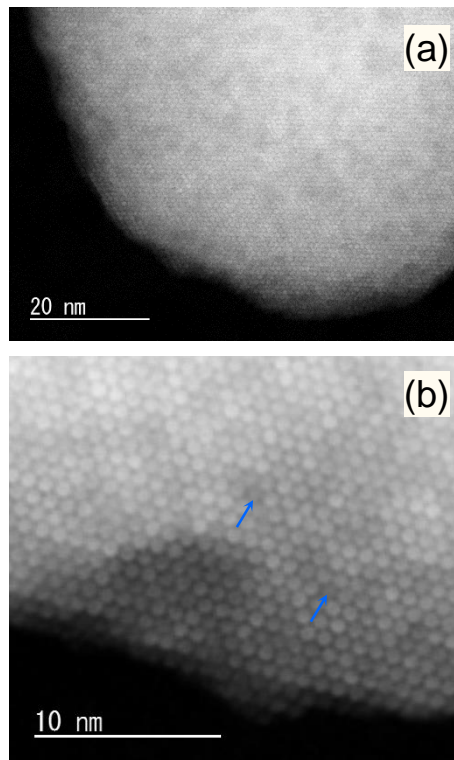


Fig. S2 Low-pass filtered HAADF images of **Cs_{4.0}** taken along the [111] direction at low (a) and high (b) magnification. Dark lines are not observed in the HAADF images of **Cs_{4.0}**. Blue arrows indicate anion columns darker than the surrounding six anion columns.

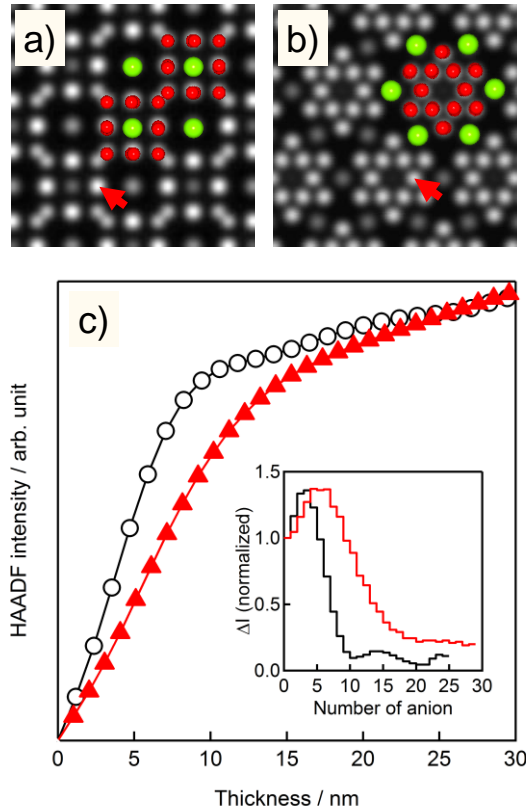


Fig. S3 Simulation of HAADF images of $\text{Cs}_4\text{SiW}_{12}\text{O}_{40}$. (Anion vacancies were not introduced in the structure model.) (a) [100] projection. (b) [111] projection. Green and red circles indicate the position of Cs and W, respectively. (c) HAADF intensity of W atomic columns arrowed in image a (\circ) and image b (\blacktriangle) as a function of crystal thickness. The interval of points plotted corresponds to the distance of $[\text{SiW}_{12}\text{O}_{40}]^{4-}$ anions along with the direction of incidence. The inset is the differential of the HAADF intensity in which the x-axis is changed to the number of $[\text{SiW}_{12}\text{O}_{40}]^{4-}$ anions stacked: black line, [100]; red line, [111].