Supplementary Information

Epitaxial growth of core-shell zeolite X-A composites

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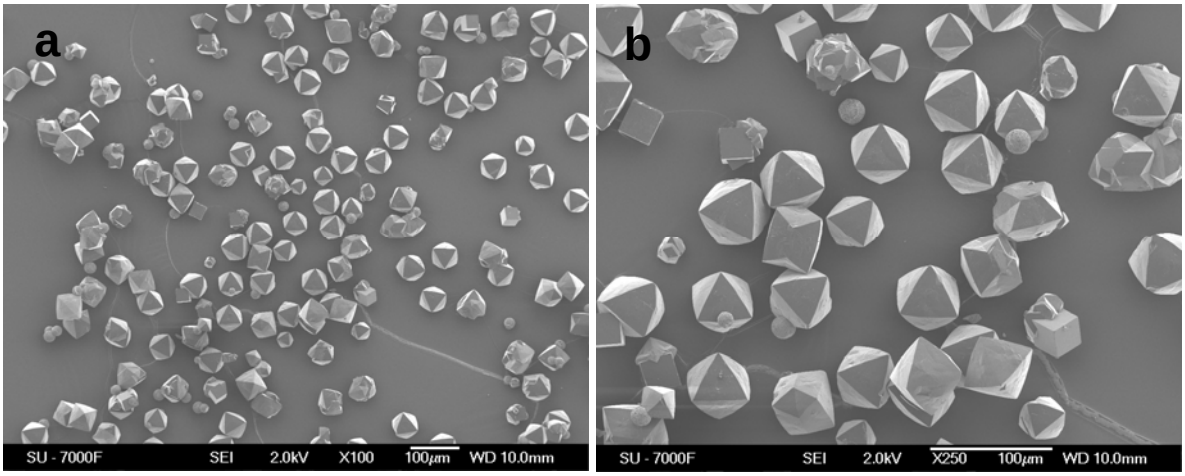

Fig. S1 SEM images of zeolite X at (a) low magnification and (b) high magnification.

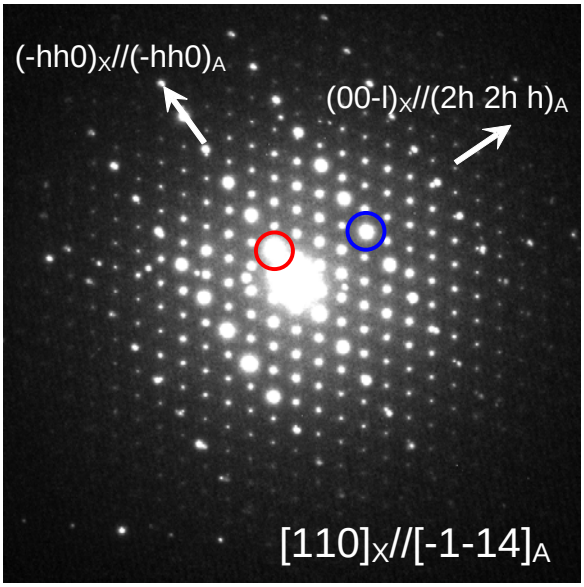

Fig. S2 Superposition of the [110] SAED pattern from the zeolite X core crystal (Fig. 6c) and the [-1-14] SAED pattern from the crystal (g) of zeolite A (Fig. 6g). The two crystals have well-defined orientation relationship. Two directions of X and A are indicated by the arrows. The overlapping reflection $(-220)_X$ and $(-220)_A$ is marked by a red circle and the blue circle indicates the overlapping $(00\text{-}6)_X$ and $(442)_A$ reflections.

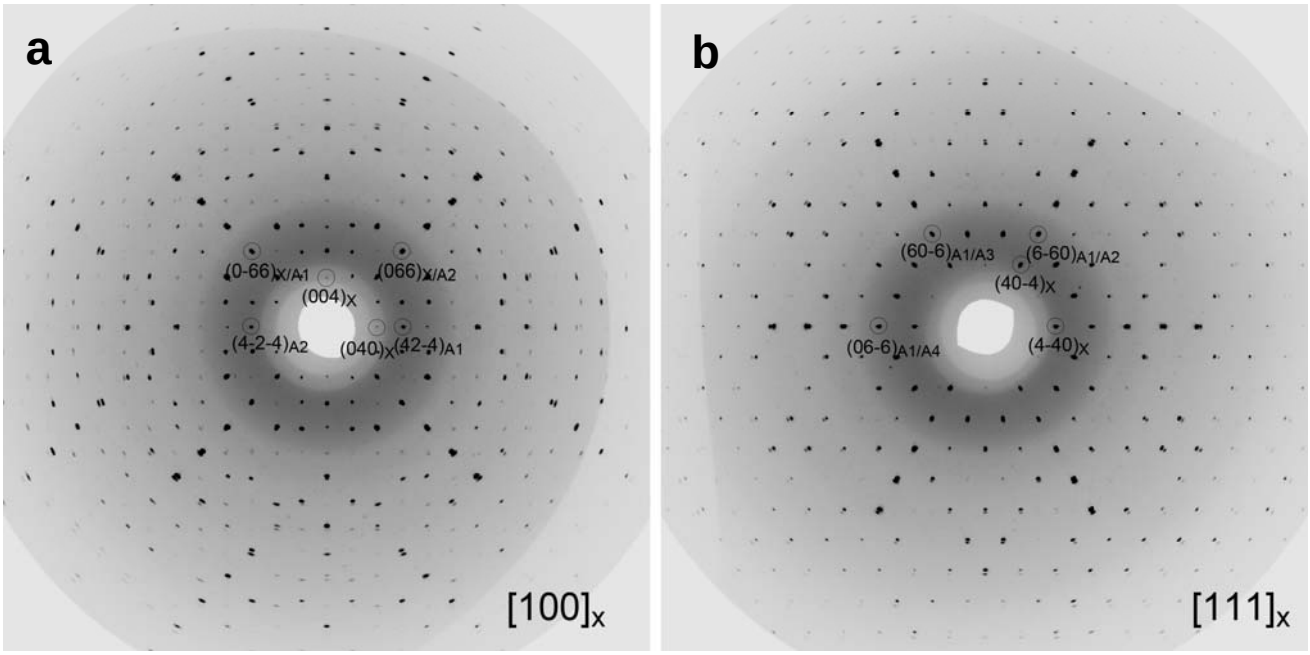

Fig. S3 Reconstructed reciprocal lattice planes from X-ray diffraction of a single composite crystal. (a) The $(0\ k\ l)_X$ plane of zeolite X where reflections from two zeolite A lattices (A1 and A2) overlap with those of zeolite X. (b) The $(h\ k\ -h\text{-}k)_X$ plane of zeolite X where reflections from four zeolite A lattices (A1-A4) are indexed.