Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Atom-scale structure of $LaCrO_3$-$NaTaO_3$ solid solution photocatalysts with enhanced electron population

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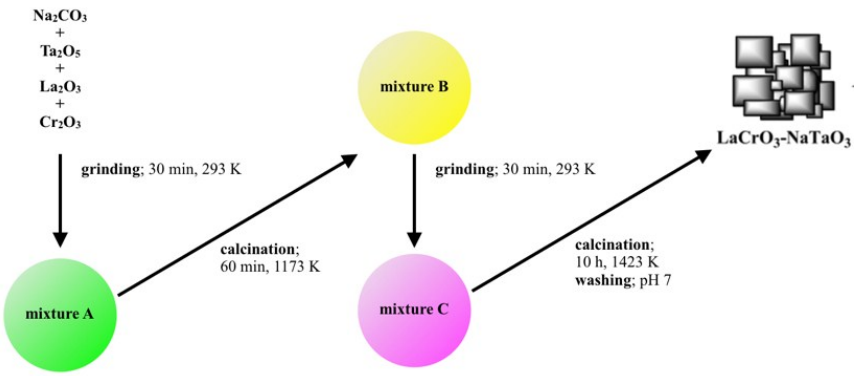

Figure S1. Illustration of the preparation of LaCr-NTO through the solid-state route.

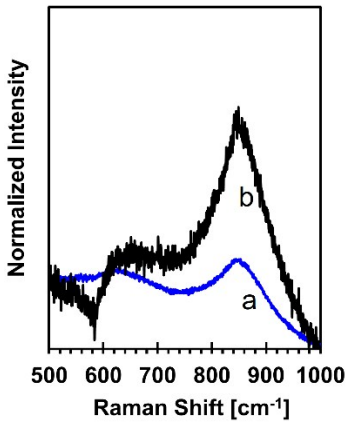

Figure S2. Raman spectra of a: LaCr-NTO (50+50 mol%) and b: LaCr-NTO (75+75 mol%).

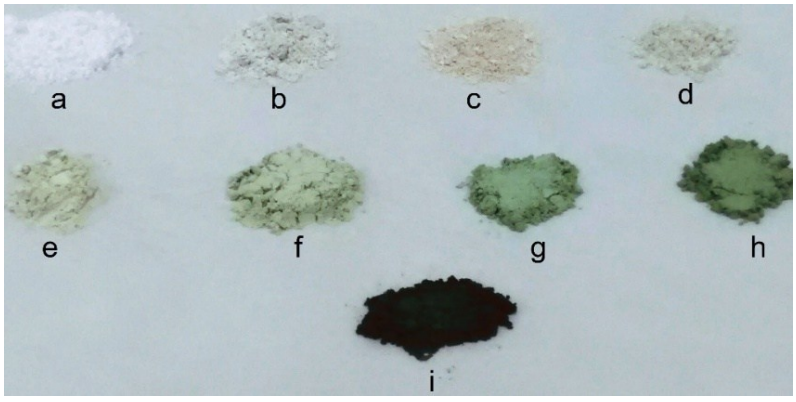

Figure S3. Photographs of a: NTO, b: LaCr-NTO (1+1 mol%), c: LaCr-NTO (2+2 mol%), d: LaCr-NTO (4+4 mol%), e: LaCr-NTO (8+8 mol%), f: LaCr-NTO (20+20 mol%), g: LaCr-NTO (50+50 mol%), h: LaCr-NTO (75+75 mol%), and i: $LaCrO_3$

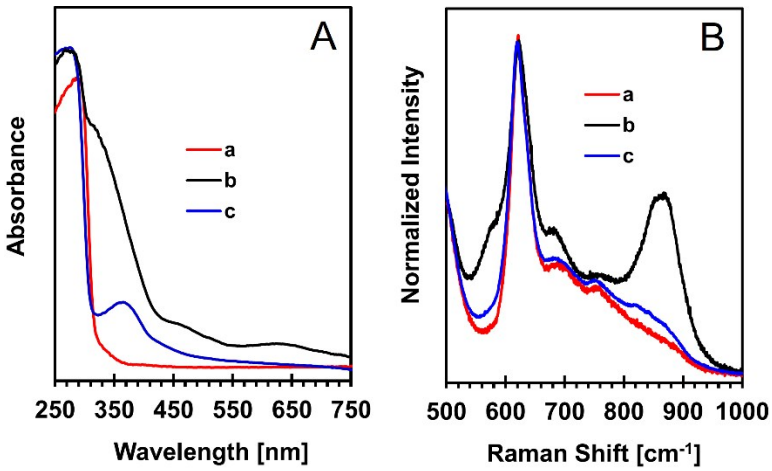

Figure S4. (A) DR spectra and (B) Raman spectra of a: NTO, b: LaCr-NTO (4+4 mol%), and c: the physical mixture of 50 wt% La-NTO (4 mol%) and 50 wt% Cr-NTO (4 mol%).

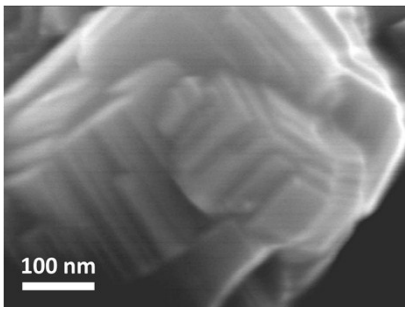

Figure S5. SEM image of La-NTO (2 mol%).

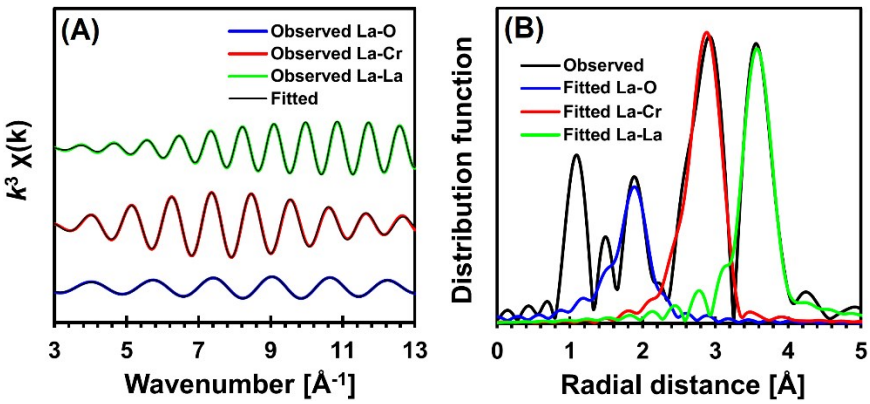

Figure S6. Comparison between observed and fitted EXAFS spectra at the La *K*-edge of $LaCrO_3$ in (A) *k* space and (B) *R* space.

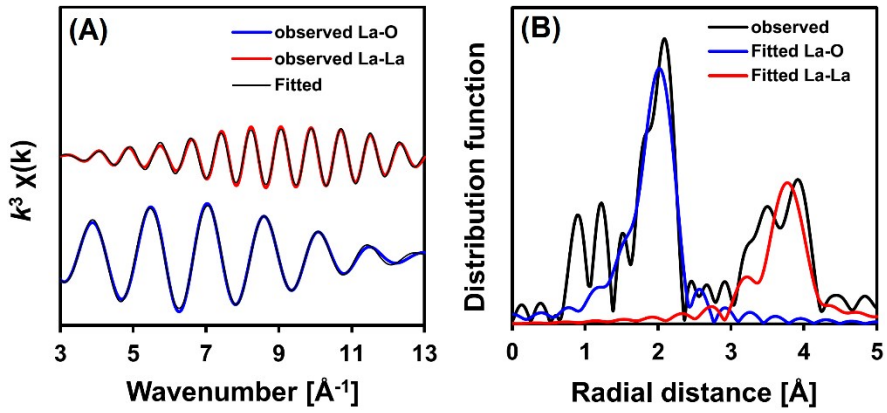

Figure S7. Comparison between observed and fitted EXAFS spectra at the La *K*-edge of La_2O_3 in (A) *k* space and (B) *R* space.