Supporting Information

Insights into the efficient charge separated and transferred La,Cr-codoped $SrTiO_3$ modified with CoP as noble-metal-free co-catalyst for superior visible-light driven photocatalytic hydrogen generation

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Supporting table and figure captions:

Table S1. The loading weight percentage of CoP in La,Cr:$SrTiO_3$/CoP composites

Sample	Theory values	ICP values
La,Cr:$SrTiO_3$/CoP(2wt%)	2 wt%	2.19 wt%
La,Cr:$SrTiO_3$/CoP(3wt%)	3 wt%	2.89 wt%
La,Cr:$SrTiO_3$/CoP(4wt%)	4 wt%	4.09 wt%
La,Cr:$SrTiO_3$/CoP(5wt%)	5 wt%	5.10 wt%
La,Cr:$SrTiO_3$/CoP(6wt%)	6 wt%	6.17 wt%

Table S2. Calculated E_{CB} and E_{VB} for CoP and La,Cr:$SrTiO_3$

Semiconductor	Eg (eV)	E_{CB} (eV)	E_{VB} (eV)
CoP	1.74	-0.38	1.56
La,Cr:$SrTiO_3$	2.26	-1.02	1.44

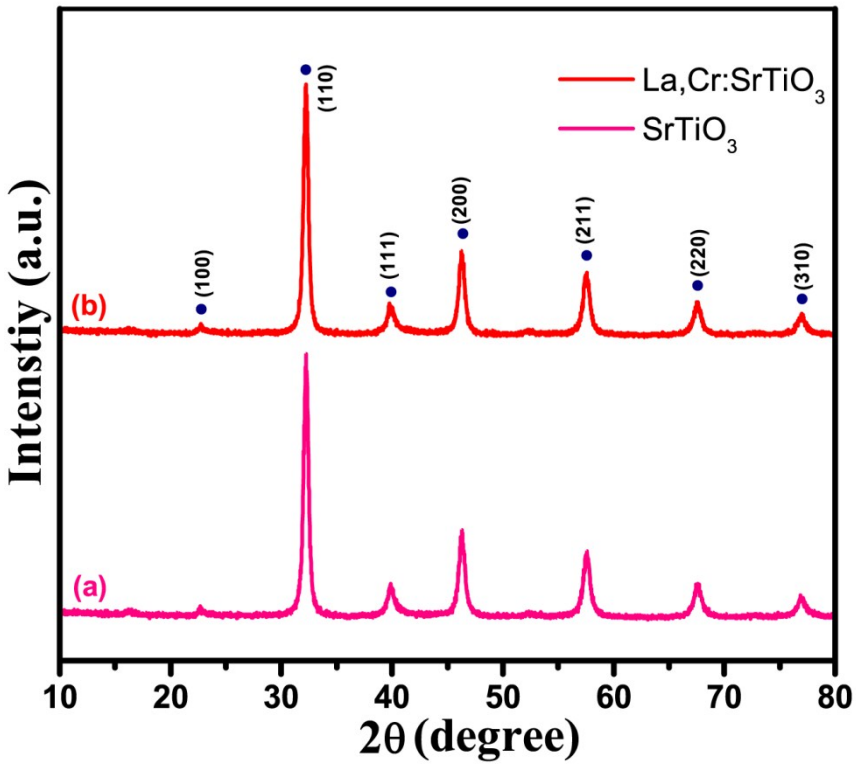

Fig.S1 XRD patterns for $SrTiO_3$ (a) and La,Cr:$SrTiO_3$ (b).

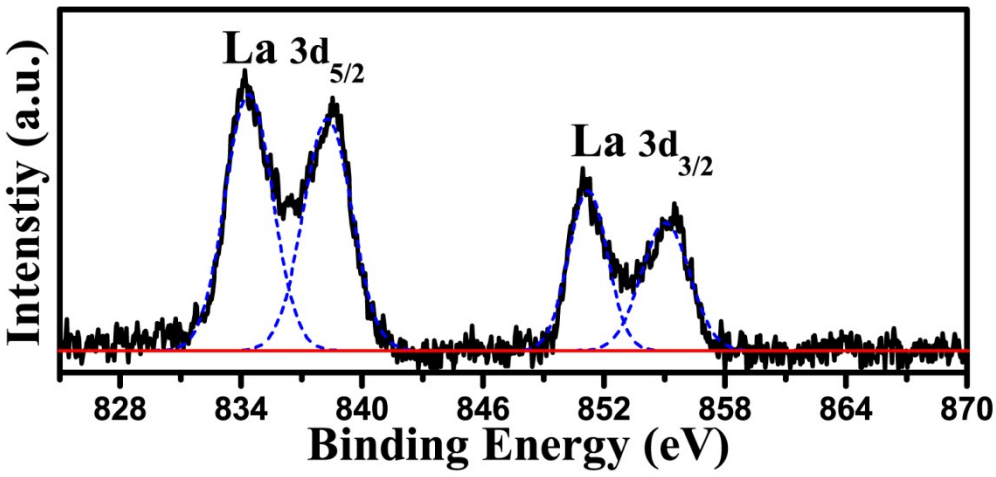

Fig.S2 The high-resolution spectra of La 3d for La,Cr:$SrTiO_3$/CoP(4wt%) sample.

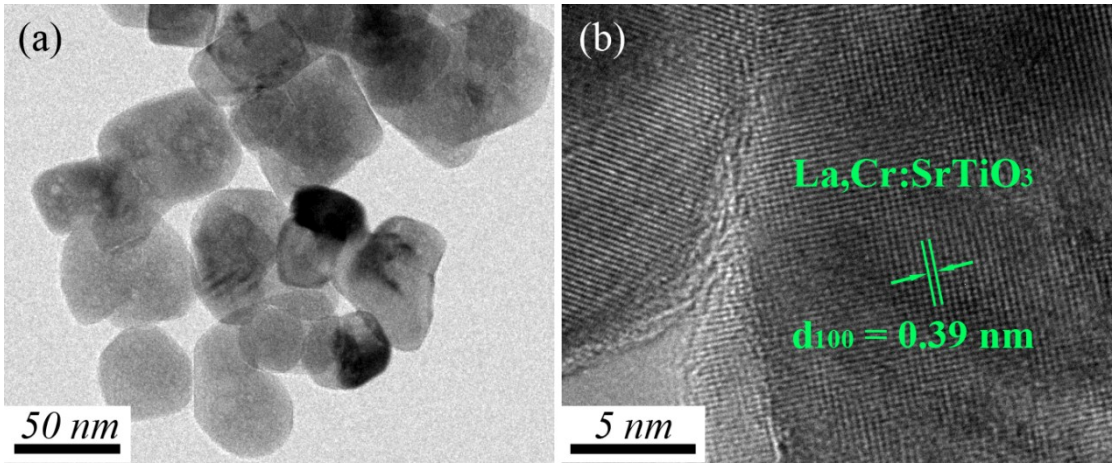

Fig.S3 TEM (a) and HRTEM (b) images of La,Cr:$SrTiO_3$ nanoparticles.

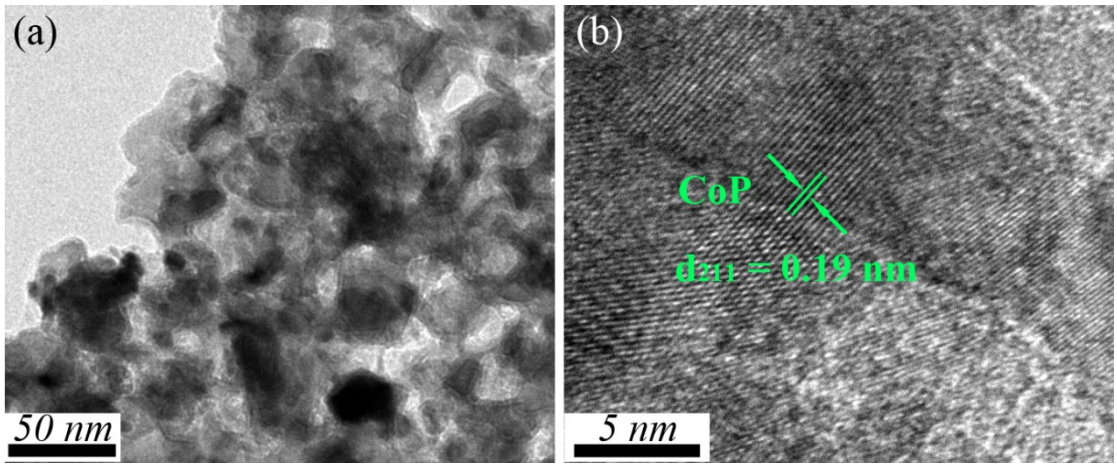

Fig.S4 TEM (a) and HRTEM (b) images of CoP nanoparticles.

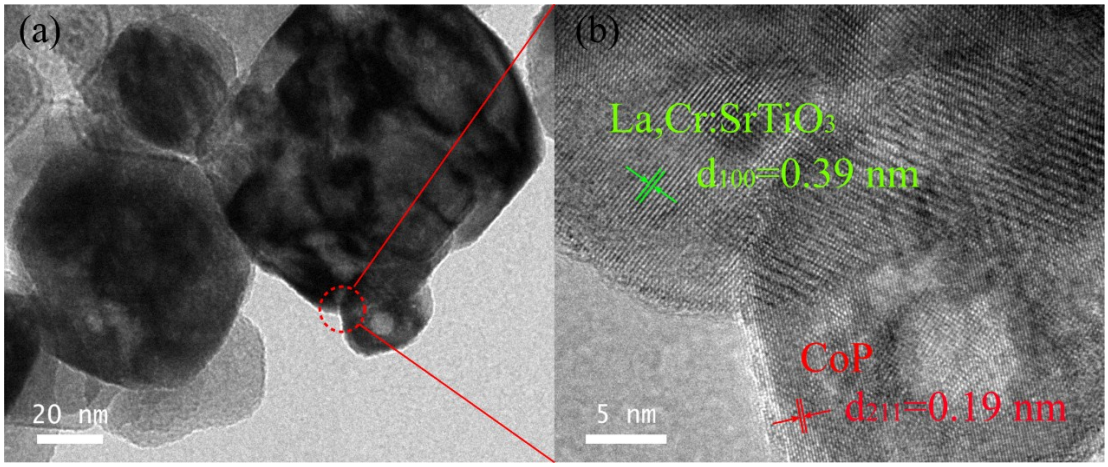

Fig.S5 TEM (a) and HRTEM (b) images of La,Cr:$SrTiO_3$/CoP(4wt%) composite.

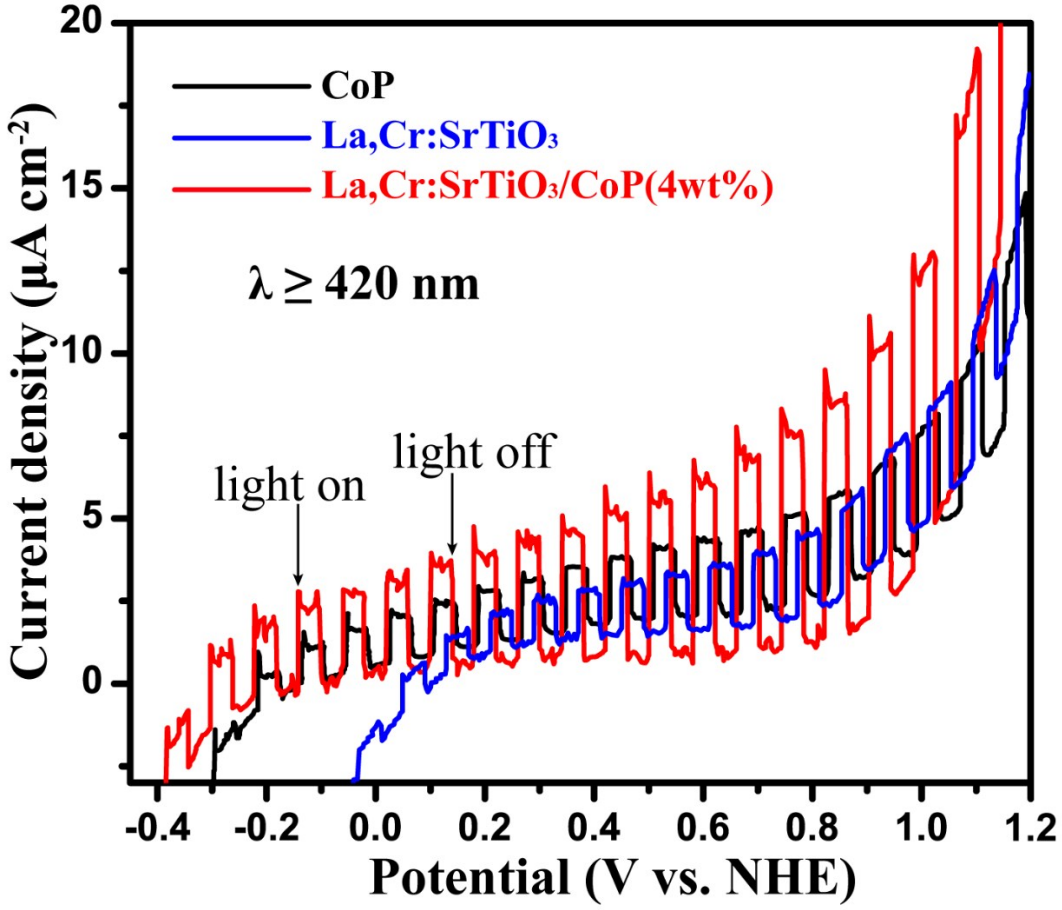

Fig.S6 Linear sweep voltammetry (LSV) of photoelectrodes fabricated from samples CoP, La,Cr:$SrTiO_3$ and La,Cr:$SrTiO_3$/CoP(4wt%) under chopped visible light illumination.