Electronic Supplementary Information for:

Composite $Sr_2TiO_4/SrTiO_3$(La,Cr) Heterojunction Based Photocatalyst for Hydrogen Production under Visible Light Irradiation

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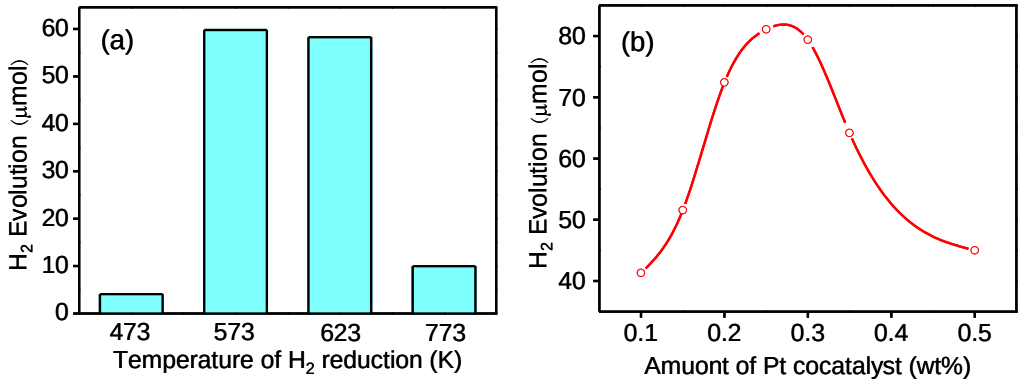

Figure S1. (a) Optimization of the Pt^{4+}→Pt reduction temperature in H_2 flow using $Sr_2TiO_4/SrTiO_3$(La,Cr) composite sample ([Cr]/([Ti]+[Cr])=0.05, [La]/[Cr]=0.75). (b) The amount of Pt loading on the $Sr_2TiO_4/SrTiO_3$(La,Cr) composite sample ([Cr]/([Ti]+[Cr])=0.05, [La]/[Cr]=1.25).

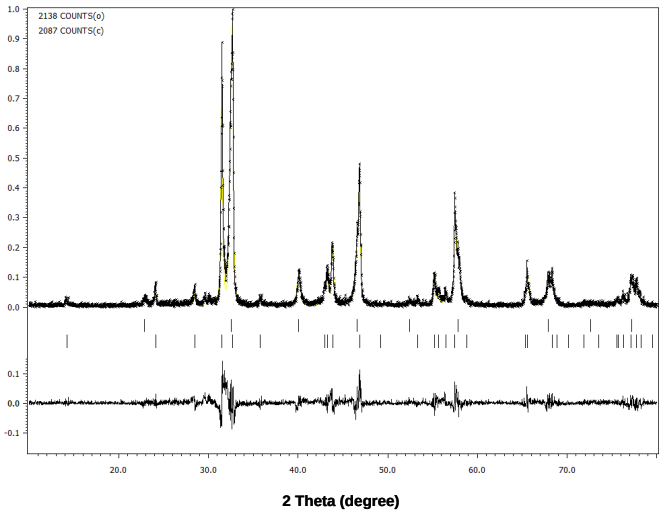

Figure S2. The composition ratio of the photocatalyts was calculated based on the XRD data. The Sr_2TiO_4(La,Cr) to $SrTiO_3$(La,Cr) ratio of 3:2 was obtained by Le Bail whole-pattern analysis method from XRD (ScanningType, Continuous Scanning) using software Jana 2006.

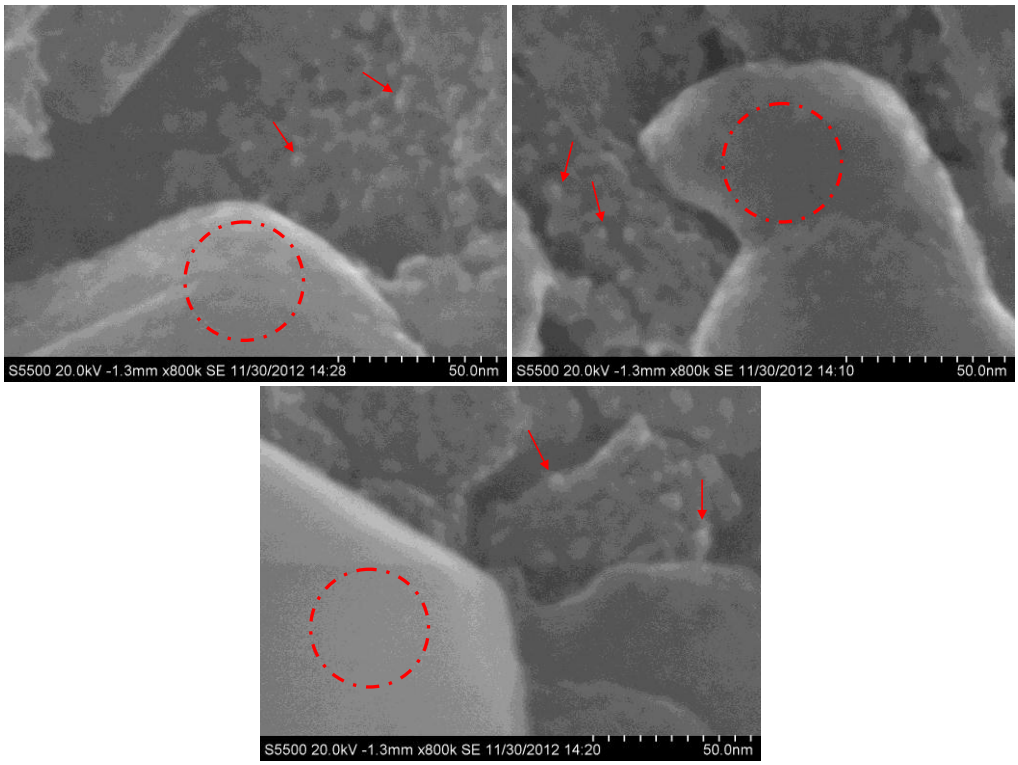

Figure S3. Three randomly selected SEM images of 1.0 wt% Pt loaded $Sr_2TiO_4/SrTiO_3$(La,Cr) samples, showing Pt preferential loading on the rough surface of the Sr_2TiO_4(La,Cr). The red circles in each images indicate the corresponding surface is the smooth surface of the $SrTiO_3$(La,Cr). The arrows in each images indicate the deposited Pt nanoparticles.