

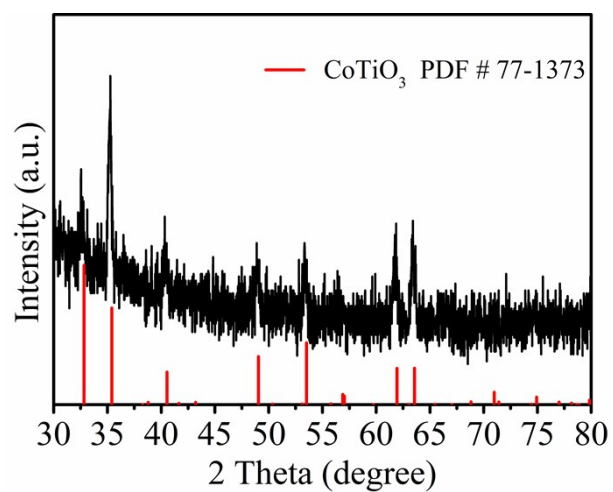
# **N-Doped TiO<sub>2</sub> Nanotube Arrays with Uniformly Embedded Co<sub>x</sub>P Nanoparticles for High-Efficiency Hydrogen Evolution Reaction**

Yong Wei,<sup>a</sup> Jijiang Fu,<sup>a</sup> Hao Song,<sup>a,b</sup> Ben Zhang,<sup>a</sup> Chaoran Pi,<sup>a</sup> Lu Xia,<sup>a</sup> Xuming  
Zhang,<sup>a\*</sup> Biao Gao,<sup>a,b</sup> Yang Zheng,<sup>a\*</sup> and Paul K. Chu<sup>b</sup>

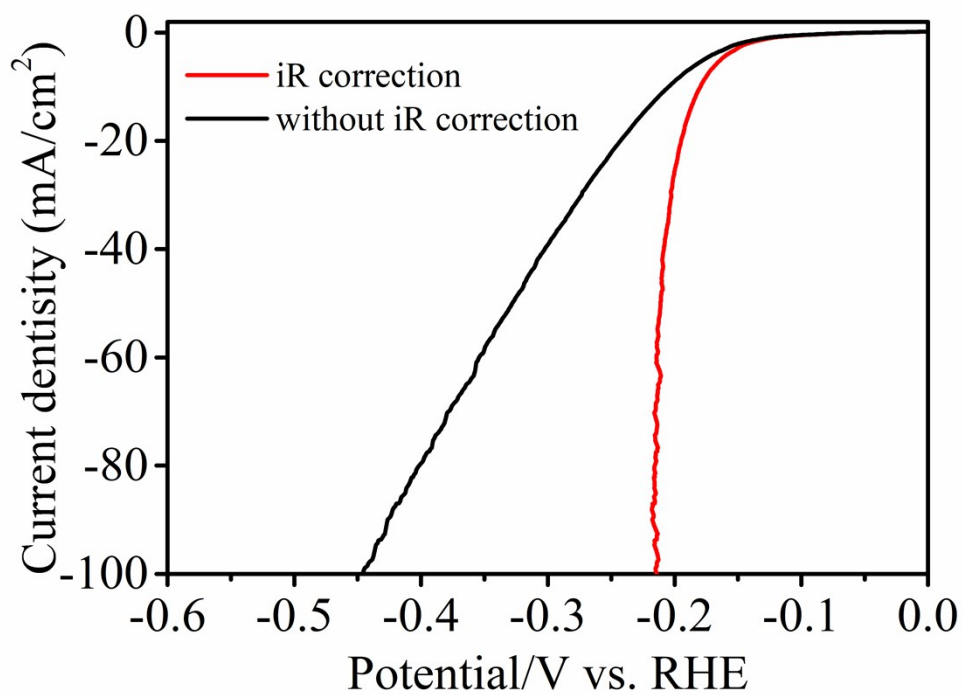
<sup>a</sup> The State Key Laboratory of Refractories and Metallurgy and Institute of Advanced  
Materials and Nanotechnology, Wuhan University of Science and Technology, Wuhan  
430081, China

<sup>b</sup> Department of Physics and Department of Materials Science and Engineering, City  
University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

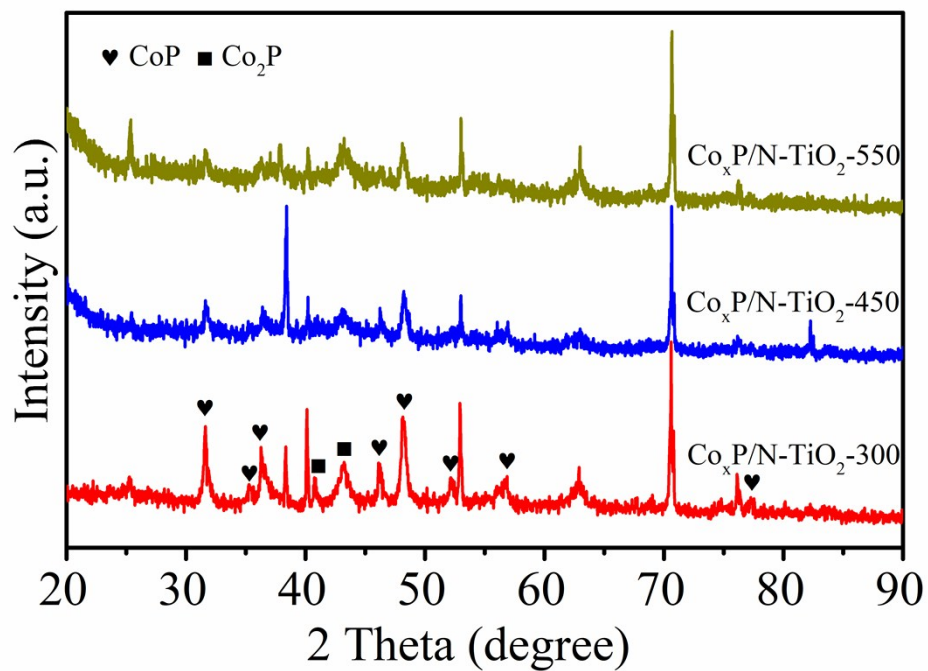
\*Corresponding authors: E-mail: xumzhang@wust.edu.cn (X.M. Zhang),  
yzheng@wust.edu.cn (Y. Zheng)



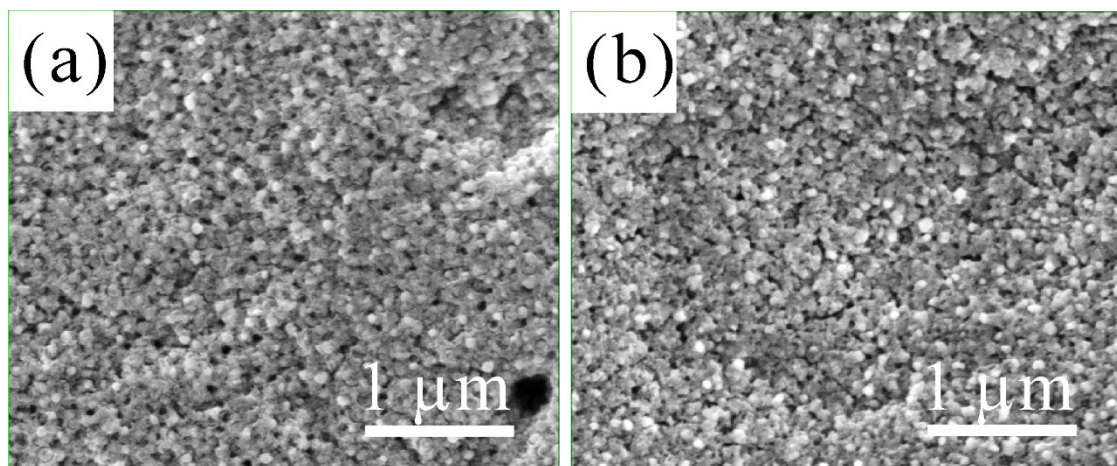
**Fig. S1** The glancing angle XRD pattern of as-hydrothermal CoTiO<sub>3</sub> NTAs after annealing at 750 °C for 3h in air.



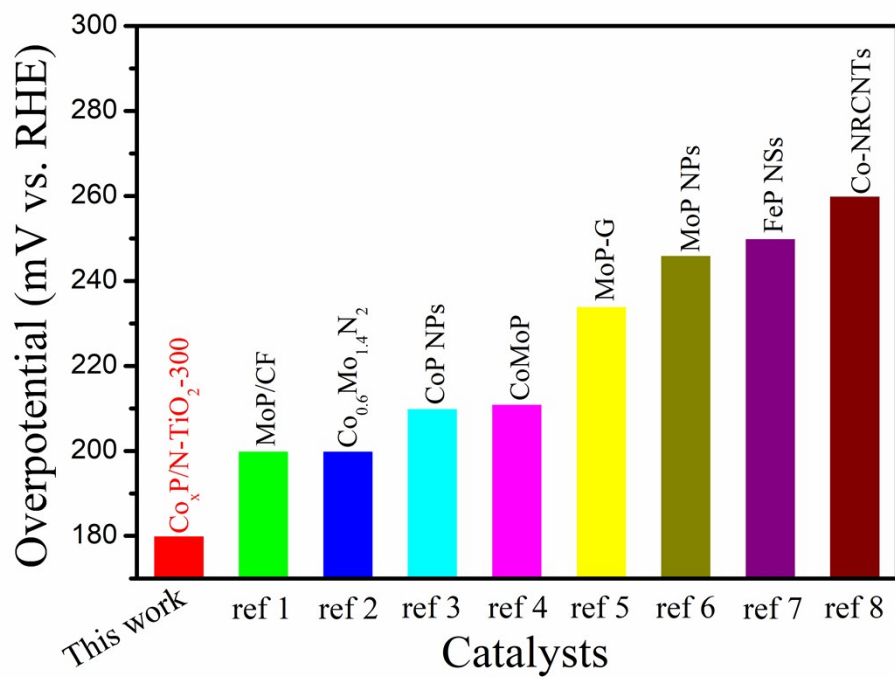
**Fig. S2** Polarization curves of Co<sub>x</sub>P/N-TiO<sub>2</sub> NTAs-300 with and without *iR* correction.



**Fig S3** The XRD patterns of  $\text{Co}_x\text{P/N-TiO}_2$  NTAs after phosphorization at 300 °C, 450 °C and 550 °C, respectively.



**Fig. S4** SEM images of  $\text{Co}_x\text{P/N-TiO}_2$  after phosphorization at (a) 450 °C and (b) 550 °C, respectively.



**Fig. S5** Summarized overpotentials at 10 mA cm<sup>-2</sup> for other catalysts in 0.5 M H<sub>2</sub>SO<sub>4</sub>.

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## References

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