

## Supporting Information

### Enhanced Field Emission of Quasialigned 3C-SiC

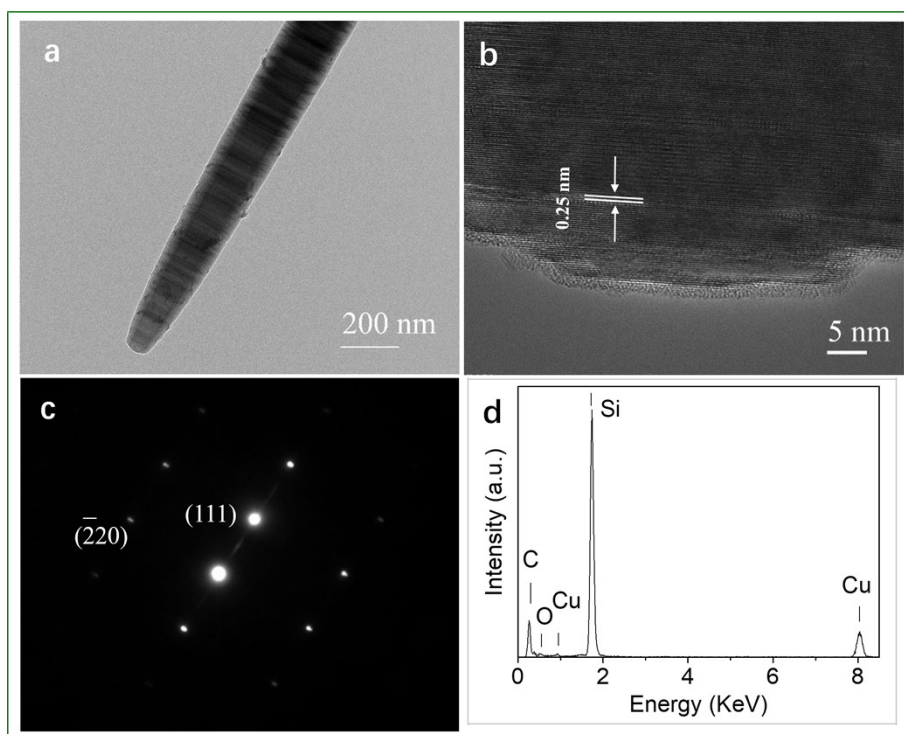
#### Nanoarrays Alloyed with Tiny Co Nano-Tips

Youqiang Chen<sup>1\*</sup> and Xinni Zhang<sup>2</sup>

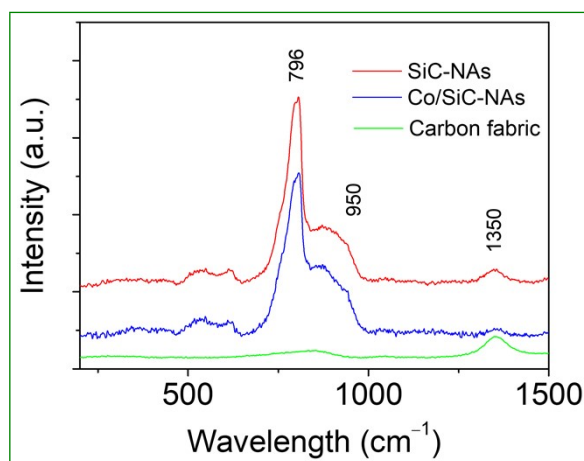
<sup>1</sup> Department of Chemistry, Tsinghua University, Beijing, 100084, P. R. China.

<sup>2</sup> State Key Lab of New Ceramics and Fine Processing, Tsinghua University, Beijing, 100084, P.R. China.

#### Characterization of SiC nanostructures



**Supplementary Figure S1.** Schematic typical characterization of as-synthesized SiC nanowires without tiny Co heads (sample B). (a) Corresponding TEM image of SiC nanowire and (b) its tip. (c) Representative SAED pattern of the nanowire. (d) Typical EDS spectrum of top parts of the nanowire.



**Supplementary Figure S2.** Typical Raman spectrum of the carbon fabric and sample A and B grown on it.

In Supplementary Figure S2, we show Raman spectra for similar probe locations for the as-synthesized SiC nanowires. Raman peaks centered at  $796\text{ cm}^{-1}$  are characteristic of the TO mode, and the peaks located within the range  $840\text{--}990\text{ cm}^{-1}$  ( $\sim 950\text{ cm}^{-1}$ ) correspond to the LO mode.<sup>[1–3]</sup> It should be noted this broad amorphous bulge also arises from the Raman peak of amorphous  $\text{SiO}_2$ <sup>[1, 2, 4]</sup> and the random stacking sequences of atomic planes, which create a virtual local mixture of polytypes, leading to the observation of additional peaks in the Raman spectrum. The  $1355\text{ cm}^{-1}$  is attributed to the Raman peak of carbon fabric.<sup>[2]</sup>

## References

- 1 Y. D. Glinka and M. Jaroniec, *J. Phys. Chem. B*, 1997, **101**, 8832–8835.
- 2 A. L. Meng, Z. J. Li, J. L. Zhang, L. Gao and H. J. Li, *J. Cryst. Growth*, 2007, **308**, 263–268.
- 3 Y. Q. Chen, X. N. Zhang, Q. Zhao, L. He, C. K. Huang and Z. P. Xie, *Chem. Commun.*, 2011, **47**, 6398–6400.
- 4 Z. J. Li, W. D Gao, A. L. Meng, Z. D Geng and L. Gao, *J. Phys. Chem. C* 2009, **113**, 91–96.