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Supporting Information on line

Hydrothermal Synthesis of Perovskite-type $MTiO_3$ (M= Zn, Co, Ni)/TiO_2 Nanotube Arrays from Amorphous TiO_2 Template

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†Electronic Supplementary Information (ESI†)

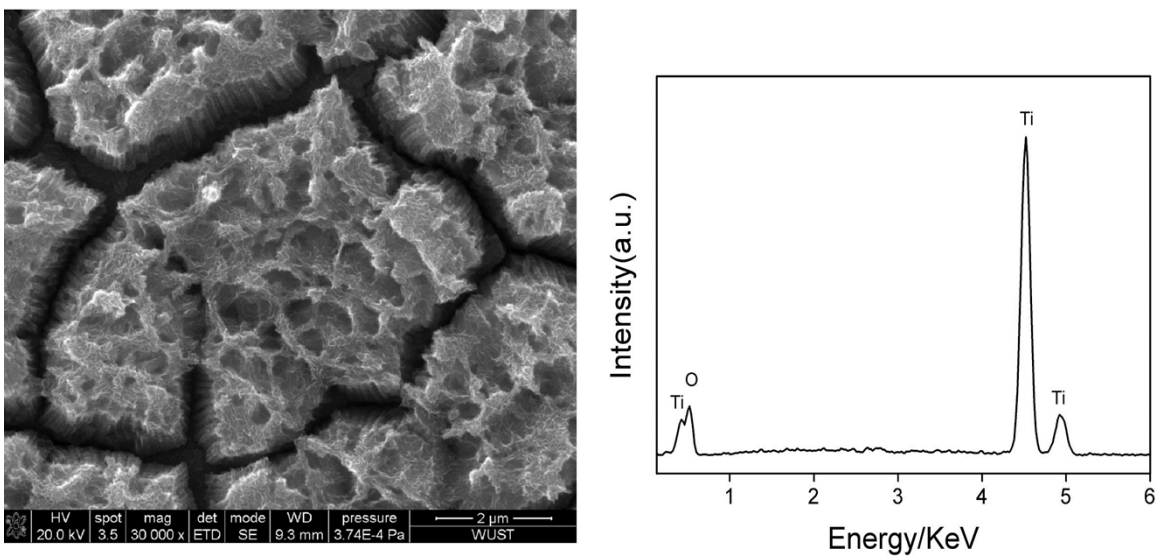

Fig. S1 FE-SEM micrograph of amorphous TiO_2 NTAs after hydrothermal treatment at 200 °C for 6 h in 0.02 M NaOH solution (pH = 12.3) and corresponding EDS spectrum on surface.

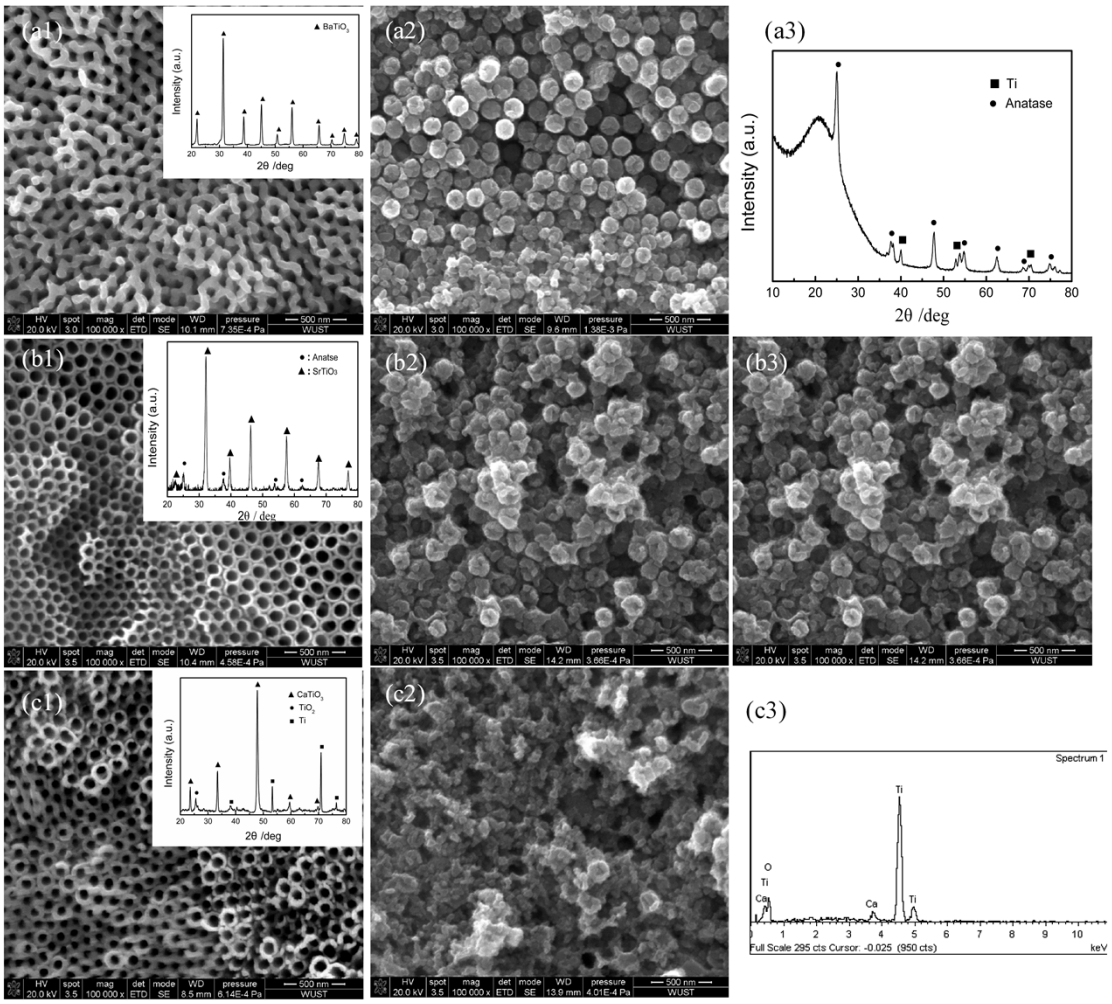

Fig. S2 FE-SEM images of amorphous TiO_2 NTAs after hydrothermal treatment at 200 °C for 6 h in 0.02 M alkali solution: (a1) $Ba(OH)_2$, (b1) $Sr(OH)_2$ and (c1) $Ca(OH)_2$. (a2) FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment in 0.02 M $Ba(NO_3)_2$ at 200 °C for 6 h. (a3) Corresponding XRD pattern of (a2). (b2) and (b3) FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment at 200 °C for 6 h in 0.2 M $SrCl_2$ and in 0.2 M $Sr(NO_3)_2$, respectively. (c2) and (c3) FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment in 0.02 M $CaCl_2$ at 200 °C for 6 h and corresponding EDS spectra.

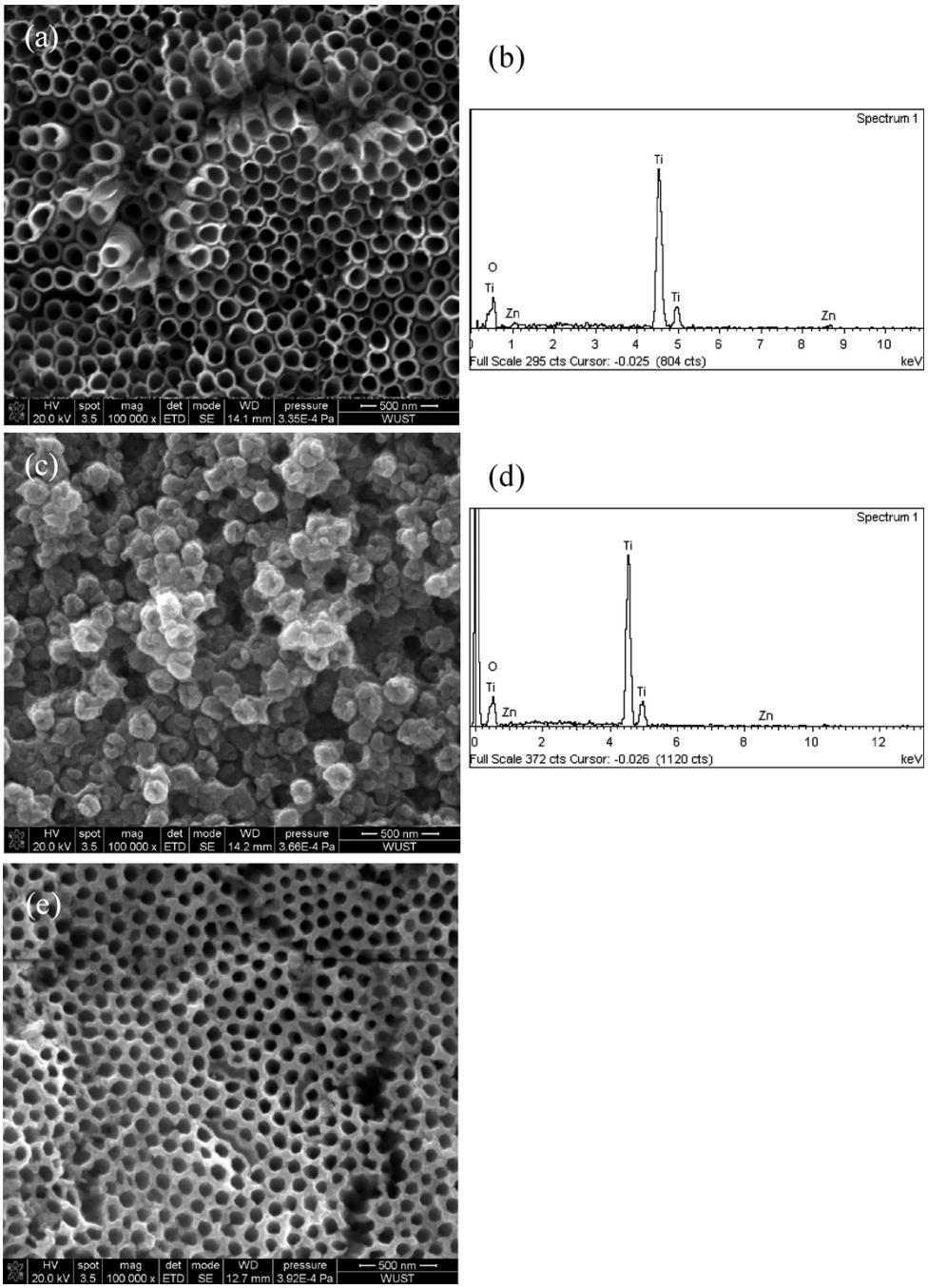

Fig. S3 (a) FE-SEM image of anatase TiO_2 NTAs after hydrothermal treatment in 0.2 M $Zn(Ac)_2$ at 200 °C for 6 h. (b) Corresponding EDS spectra of (a). (c) FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment in 0.2 M $ZnCl_2$ at 200 °C for 6 h. (d) Corresponding EDS spectra of (c). (e) $ZnTiO_3$ NTAs annealed at 750°C for 3 h.

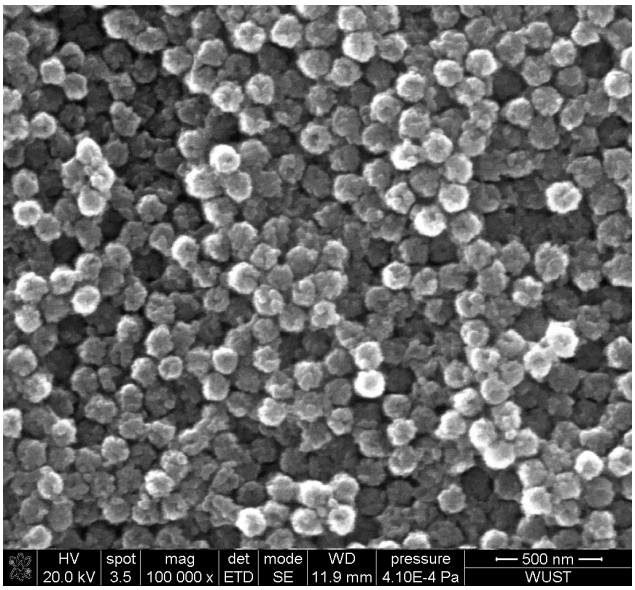

Fig. S4 FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment in 0.2 M $Co(NO_3)_2$ at 200 °C for 6 h.

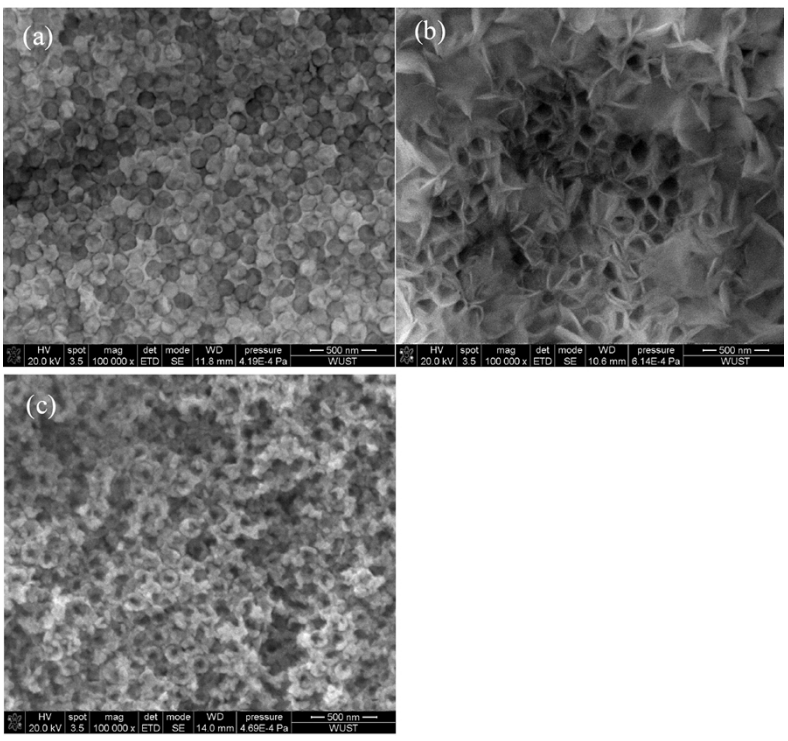

Fig. S5 FE-SEM images of amorphous TiO_2 NTAs after hydrothermal treatment in (a) 0.1 M $Ni(Ac)_2$ (pH=7.18) and (b) 0.5 M $Ni(Ac)_2$ (pH=6.74) at 200 °C for 6 h. (c) FE-SEM image of amorphous TiO_2 NTAs after hydrothermal treatment in 0.2 M $Ni(NO_3)_2$ at 200 °C for 6 h.