Electronic Supplementary Information

3-D Flower-like NiCo Alloy Nano / Microstructures Grown by a Surfactant-assisted Solvothermal Process

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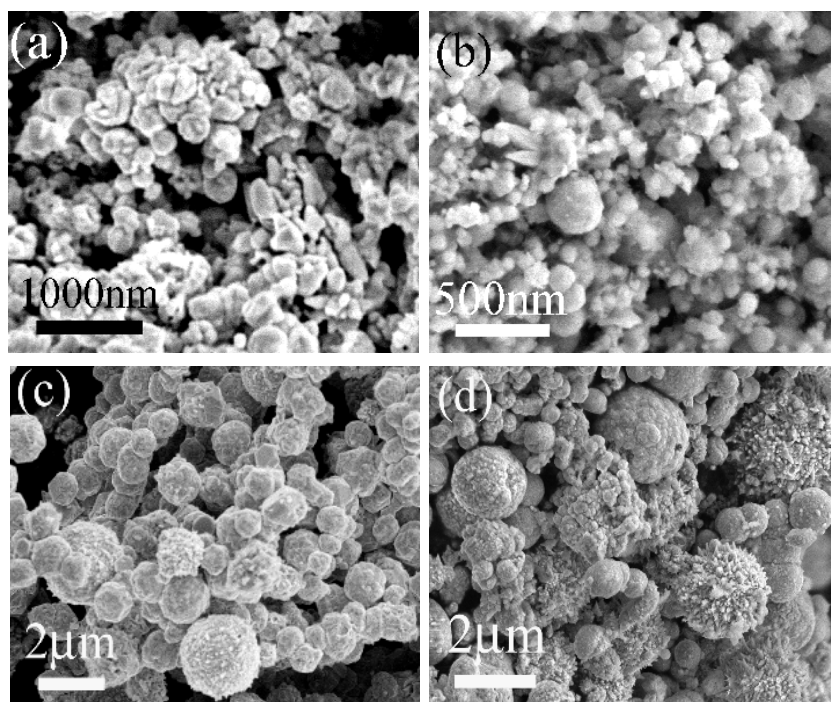Anhui Normal University, Wuhu, 241000, P. R. China.

Figure S1. SEM images of the NiCo alloy obtained at different surfactants and solvents with other parameters constant: (a) no surfactant, (b) SDS. (c) H_2O and (d) EG, respectively.

Table S1. The initial NiCo composition, the final composition and the morphology obtained for the Ni_xCo_{1-x} alloys synthesized by a specified ratio of Ni^{2+} and Co^{2+} salts (total 0.2 mol/L) in ethanol at 120 °C for 10 h with other parameters constant.

Initial Ni_xCo_{1-x}	Final composition	Morphology
Ni_{100}	Ni_{100}	Aggregated nanoparticles (Figure 4a)
$Ni_{80}Co_{20}$	$Ni_{76}Co_{24}$	Mixture of nano- to micro-spheres with rough surface (Figure 4b)
$Ni_{60}Co_{40}$	$Ni_{59}Co_{41}$	Submicrospheres with pleat surface (Figure 4c)
$Ni_{50}Co_{50}$	$Ni_{48}Co_{52}$	Flower-like submicrospheres with hierarchical structures on their surface (Figure 2)
$Ni_{40}Co_{60}$	$Ni_{39}Co_{61}$	Mixture of dendrites and flower-like spheres (Figure 4d)
$Ni_{20}Co_{80}$	$Ni_{15}Co_{85}$	Dendrites (Figure 4e)
Co_{100}	Co_{100}	Dendrites (Figure 4f)
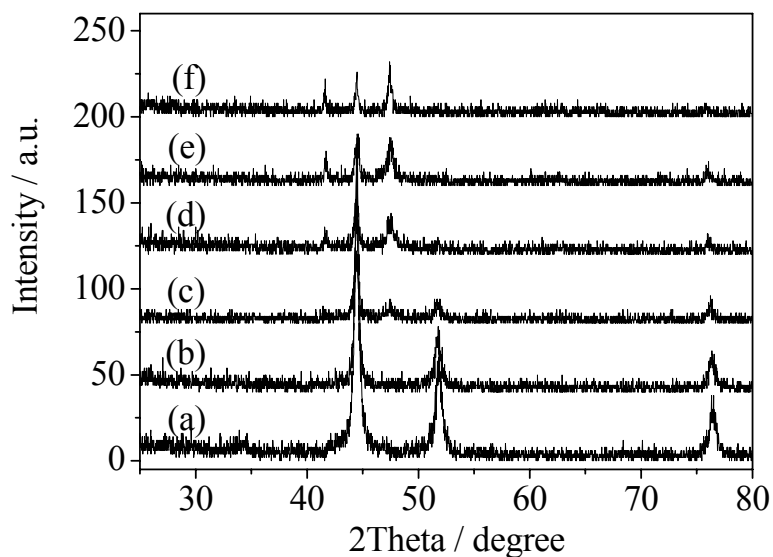
Figure S2. XRD patterns of different compositions of NiCo alloys: a) Ni_{100}, b) $Ni_{76}Co_{24}$, c) $Ni_{59}Co_{41}$, d) $Ni_{39}Co_{61}$, e) $Ni_{15}Co_{85}$, and f) Co_{100}.

Table S2. Magnetic Data of Obtained NiCo Alloy Samples.

Samples	NiCo final compotition	Ms (emu/g)	Mr (emu/g)	Mr/Ms	Hc (Oe)
Sample 1	$Ni_{48}Co_{52}$	111.33	5.643	0.044	84.27
Sample 2	$Ni_{47}Co_{53}$	103.58	4.593	0.051	52.71