Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting Information

Morphology-Controllable Synthesis of 3D Firecracker-Like ZnO Nanoarchitectures for High Catalysis Performance

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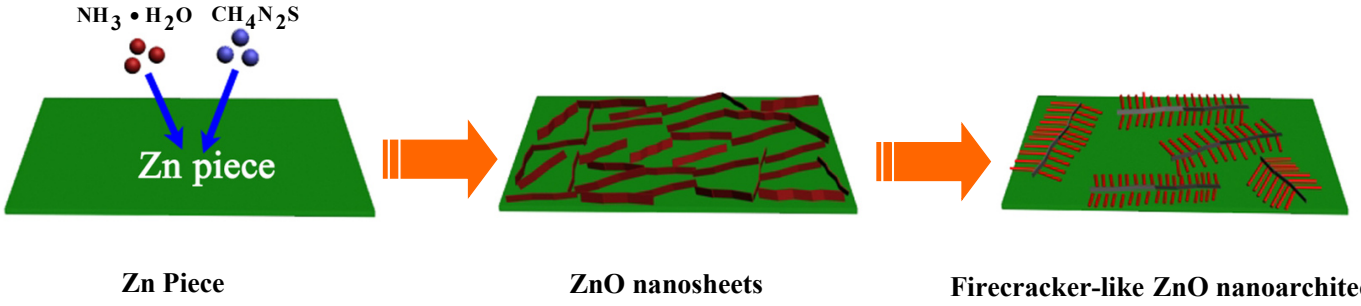

Scheme S1 Schematic illustration of the formation mechanism for 3D firecracker-like ZnO nanoarchitecture.

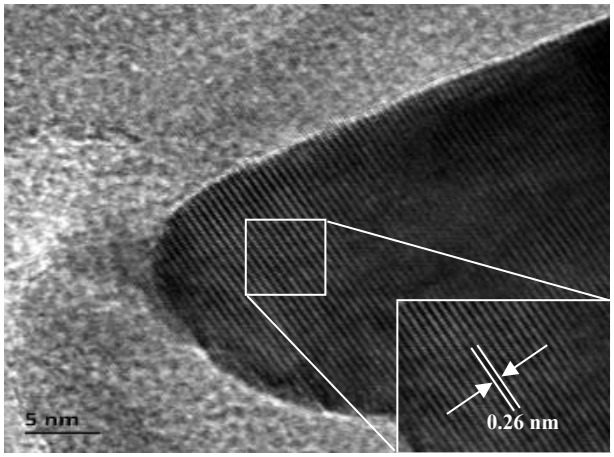

Figure S1 HRTEM image of 3D firecracker-like ZnO Nanoarchitecture. Inset show crystal lattice of an individual 3D firecracker-like ZnO nanoarchitecture.

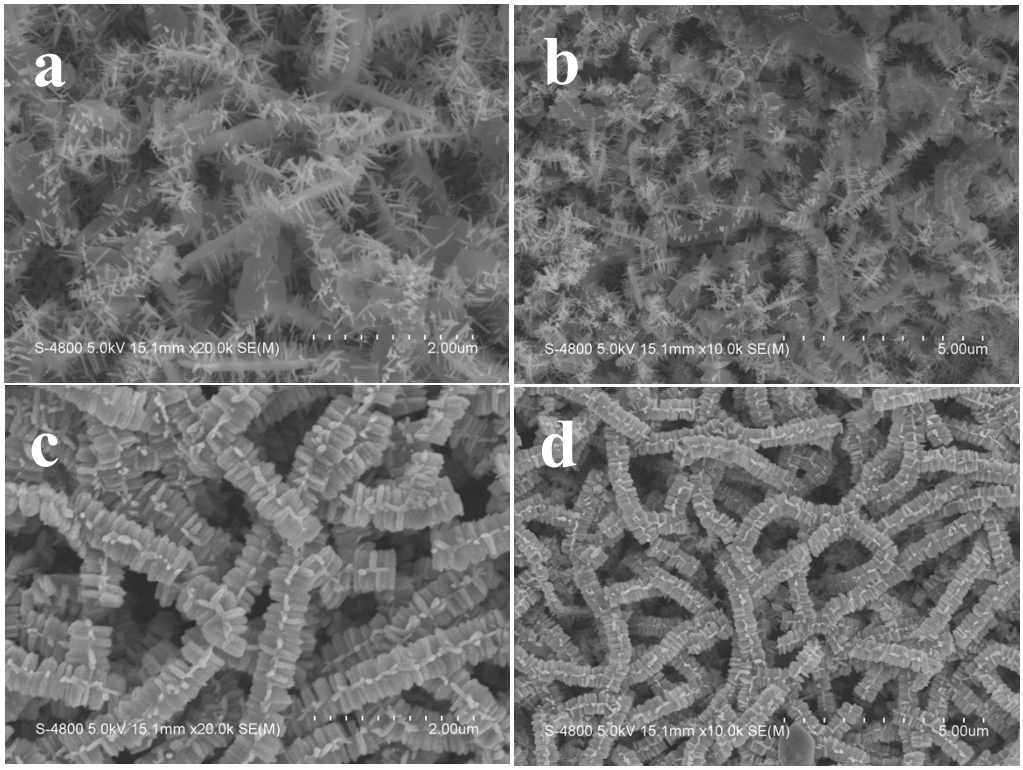

Figure S2 Typical SEM images of products obtained at different reaction temperture (a and b) 40℃; (c and d) 100℃.

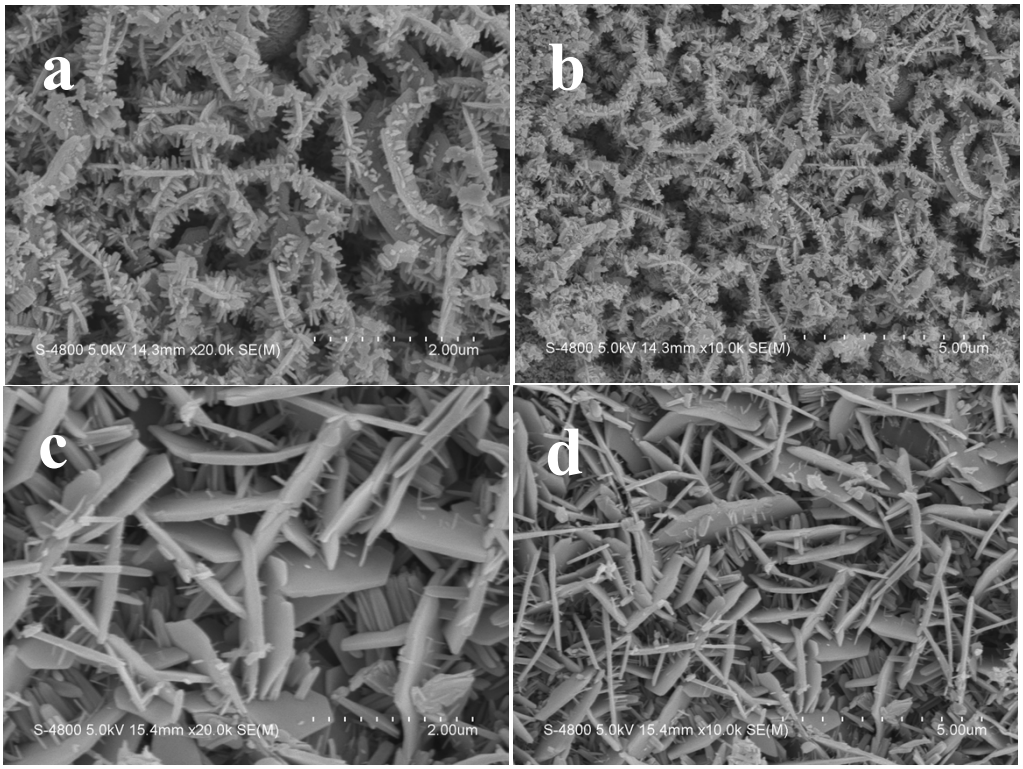

Figure S3 Typical SEM images of products obtained at different concentrations of Ammonium hydroxide.(a and b) 0.2 mol L^{-1};(c and d) 0.6 mol L^{-1}.

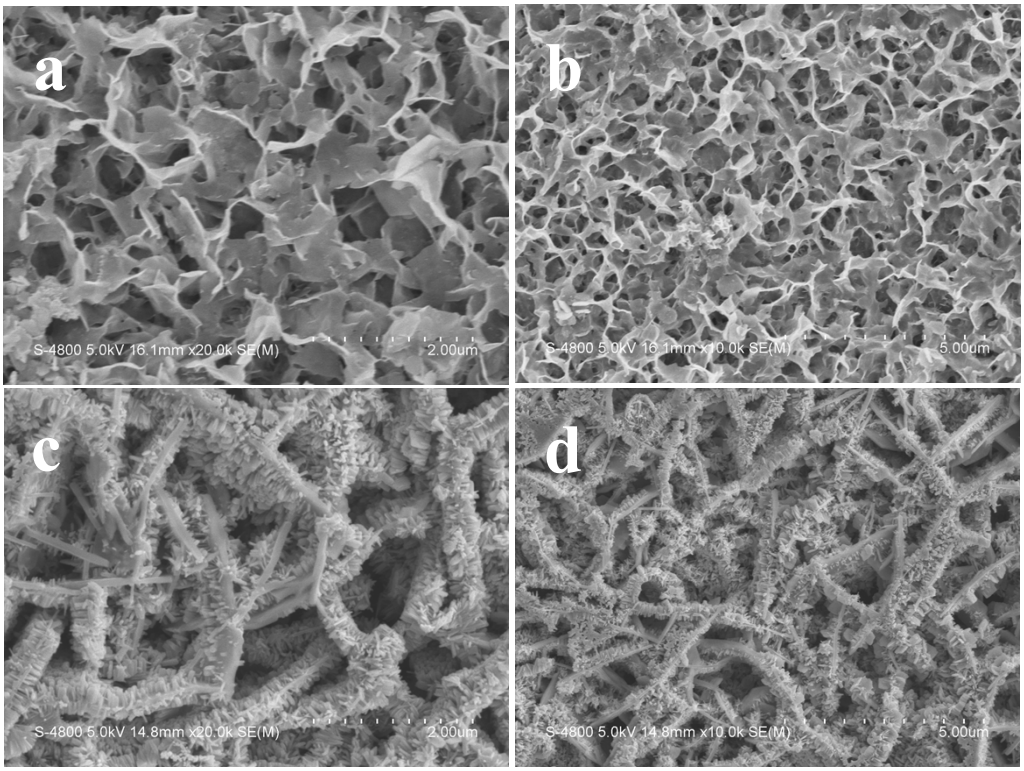

Figure S4 Typical SEM images of products obtained at different concentrations of Thiourea.(a and b)0 mol L^{-1};(c and d)0.2 mol L^{-1}.

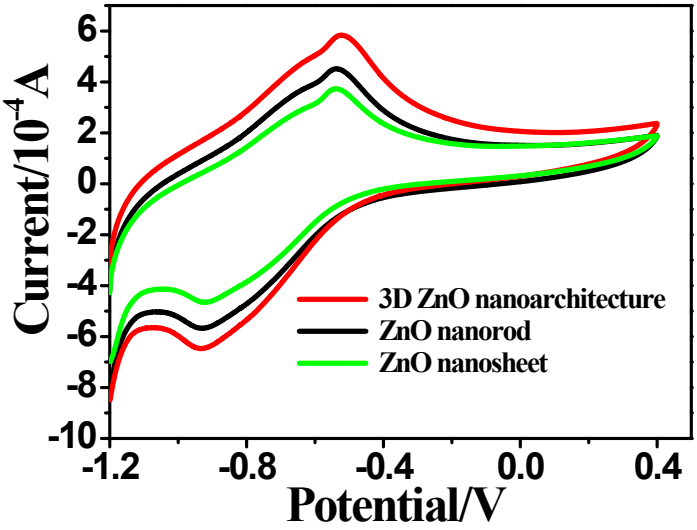

Figure S5 Cyclic voltammograms of different morphology ZnO nanomaterial in 0.1 mol L^{-1} NaOH with the same concentrations of HZ at a scanning rate of 50 mV s^{-1}.

Table S1 Comparison of performances of amperometric hydrazine sensors based on different modified electrode materials

Electrode materials	Sensitivity/ $\mu A\ mM^{-1}\ cm^{-2}$	Detection limit/ $\mu mol\ L^{-1}$	Linear range/ $\mu mol\ L^{-1}$	Reference
3D ZnO nanoarchitecture	860.2	0.1	0.1-3200	This work
ZnO nanonails	856	1	0.1–1.2	S1
ZnO nanorods	476	2.2	0.2–2.0	S2
Carbon nanotubes powder microelectrode	99.4	-	-	S3
o-aminophenol grafted GCE	16	0.5	2.0–20.0	S4
Ni(II)/BA/MWCNT/PE	66.9	0.8	2.5-200	S5

Table S2 Comparison of other materials based on the onset oxidation potential (E_{on}).

Materials	Onset potential/V	Reference
NiCo	-0.21	S6
aminopolyacrylamide	-0.127	S7
Ni/C	-0.0045	S8
Ni La/C	-0.0185	S8
Fe	0.654	S9
Pt	0.062	S9
3D ZnO	-0.80	This work

Reference:

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