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- Fig. S1: SEM image of the urchin-like ZnO/Zn microspheres
- Fig. S2: (a) TEM image of the outer shell of the microsphere, (b) SAED pattern of the shell and (c) HR-TEM image of the shell
- Fig. S3: (a) UV-vis spectrum and (b) photoluminescence spectrum of the microspheres
- Fig. S4: Temperature profile for the formation of the urchin-like microsphere
- Fig. S5: SEM images correspond to oxidation of microspheres at various temperatures and dwell times
- Fig. S6: (a) Weight gain of the urchin-like microspheres with various oxidation temperatures and dwell times, and (b) the thermogravimetric analysis (TGA) and differential thermal analysis (DTA) of the Zn microspheres with a ramping rate of 5 °C /minute in air

Supplemental Information

Kirkendall void formation and selective directional growth of urchin-like ZnO/Zn microspheres through thermal oxidation in air

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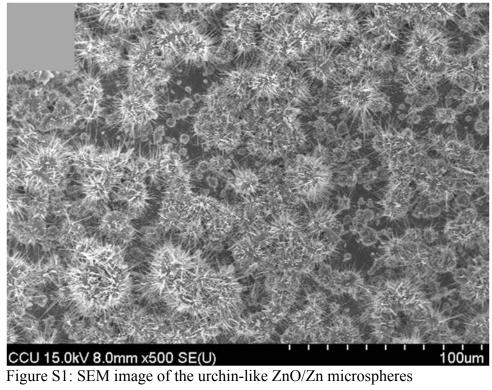
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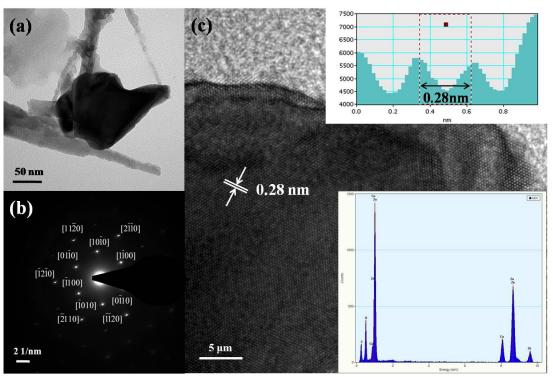


Figure S2: (a) TEM image of the outer shell of the microsphere, (b) SAED pattern of the shell, and (c) HR-TEM image of the shell

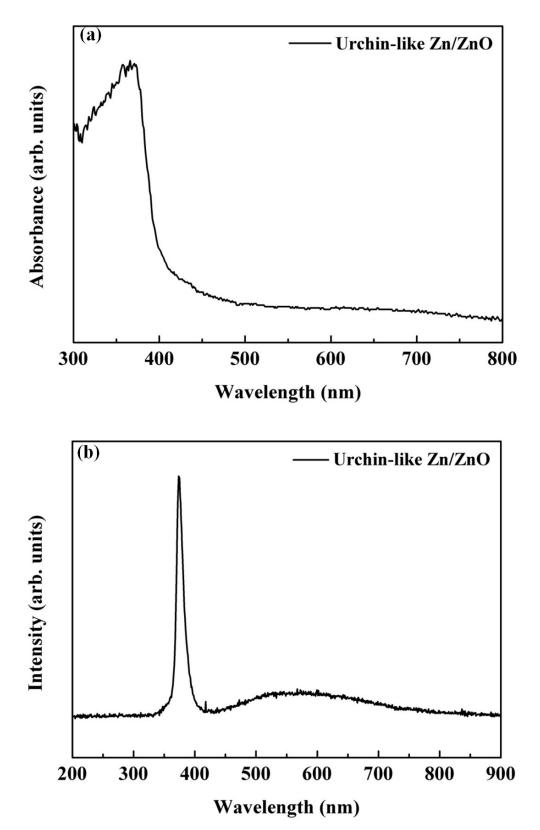


Figure S3: (a) UV-vis spectrum and (b) photoluminescence spectrum of the microspheres

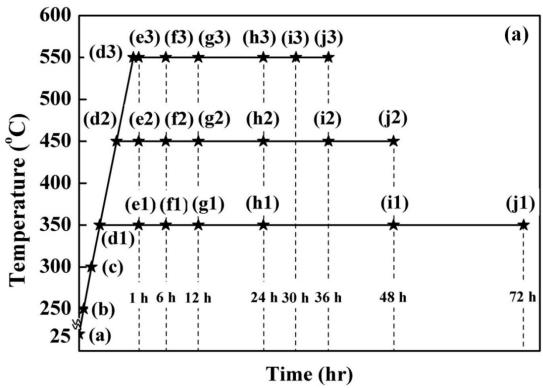
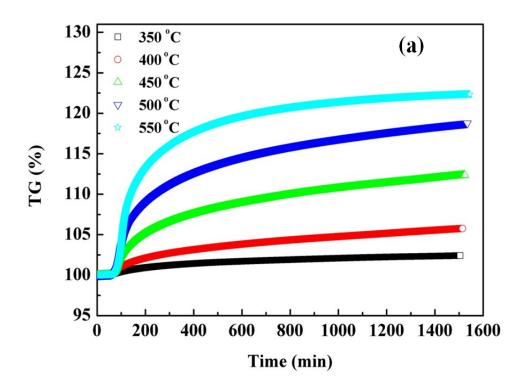


Figure S4: Temperature profile for the formation of the urchin-like microsphere

No.	350 °C	No.	450 °C	No.	550 °C
d1	O h	d2	CCU 15 GAV 6 Serve +15 GA SEGS	d3	CCU 15 GWY 3 Mens et 8 Go SEG) E Objets
e1	CCU 15 Say # Borns vit Dis 36(3) \$ Saluri	e2	CCU 15 DAY 8 arms 15 Dt. SE(3) Soluti	e3	2CO 15 Boy 7 John 15 LB
f1	CCU 15 SW 7 Semant Ed. SECI.	f2	CCU 15 GW 8 James 115 Os ERGS Solver	f3	CCU 15 GW 4 Birms 115 Ox 156.0 \$ 00.un
g1	CCU 15 GN 7 Serve 15 CA SEGS Solve	g2	CCU 15 OV 9 Serve of OO SE(s) 5 OU.	g3	12 h
h1	CCU 15 GAV 8 Sement Co. SEGS. Solver	h2	2.4 h	h3	24 h
i1	CCU 15 GAV 8 term s12 GA SEGG Schur	i2	36 h	i3	30 h
j1	72 h	j2	48 h	j3	36 h

Figure S5: SEM images correspond to oxidation of microspheres at various temperatures and dwell times



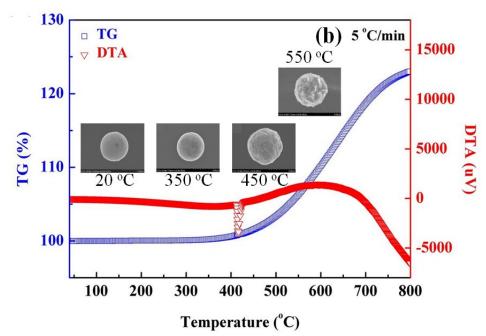


Figure S6: (a) Weight gain by the urchin-like microspheres with various oxidation temperatures and dwell times, and (b) the thermogravimetric analysis (TGA) and differential thermal analysis (DTA) of the Zn microspheres with a ramping rate of 5 °C/minute in air