

Electronic Supplementary Information (ESI)

Carbon-doped ZnO nanostructures synthesized by using vitamin C for visible light photocatalysis

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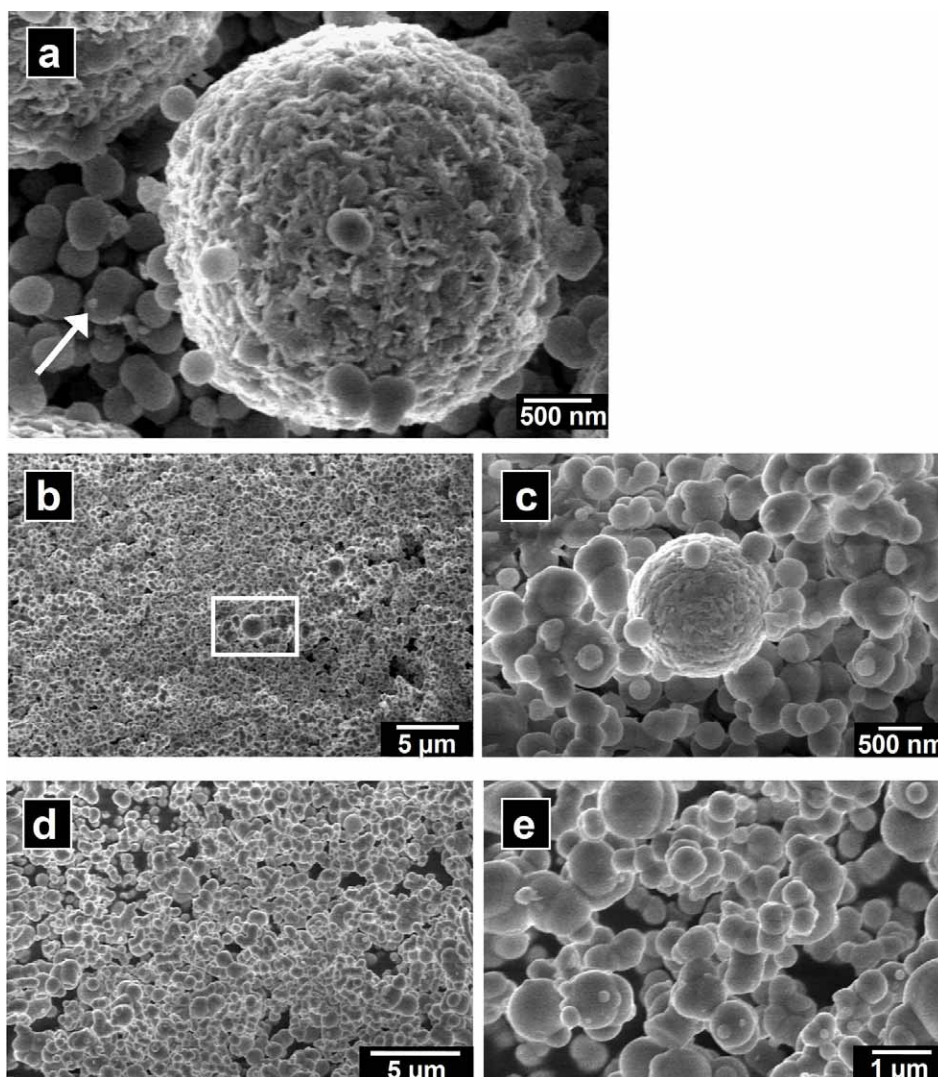


Figure S1. SEM images of the ZnO structures formed in a solution of 0.01 M zinc nitrate hexahydrate, 0.01 M HMT, and x mM vitamin C at 95°C for 1 h: (a) $x = 0.5$; (b) and (c) $x = 1$; (d) and (e) $x = 20$.

We characterized the structures obtained in a solution of 0.01 M zinc nitrate hexahydrate, 0.01 M HMT, and 1 mM vitamin C at 95°C for 1 h, followed by calcination in air at 500°C for 2 h:

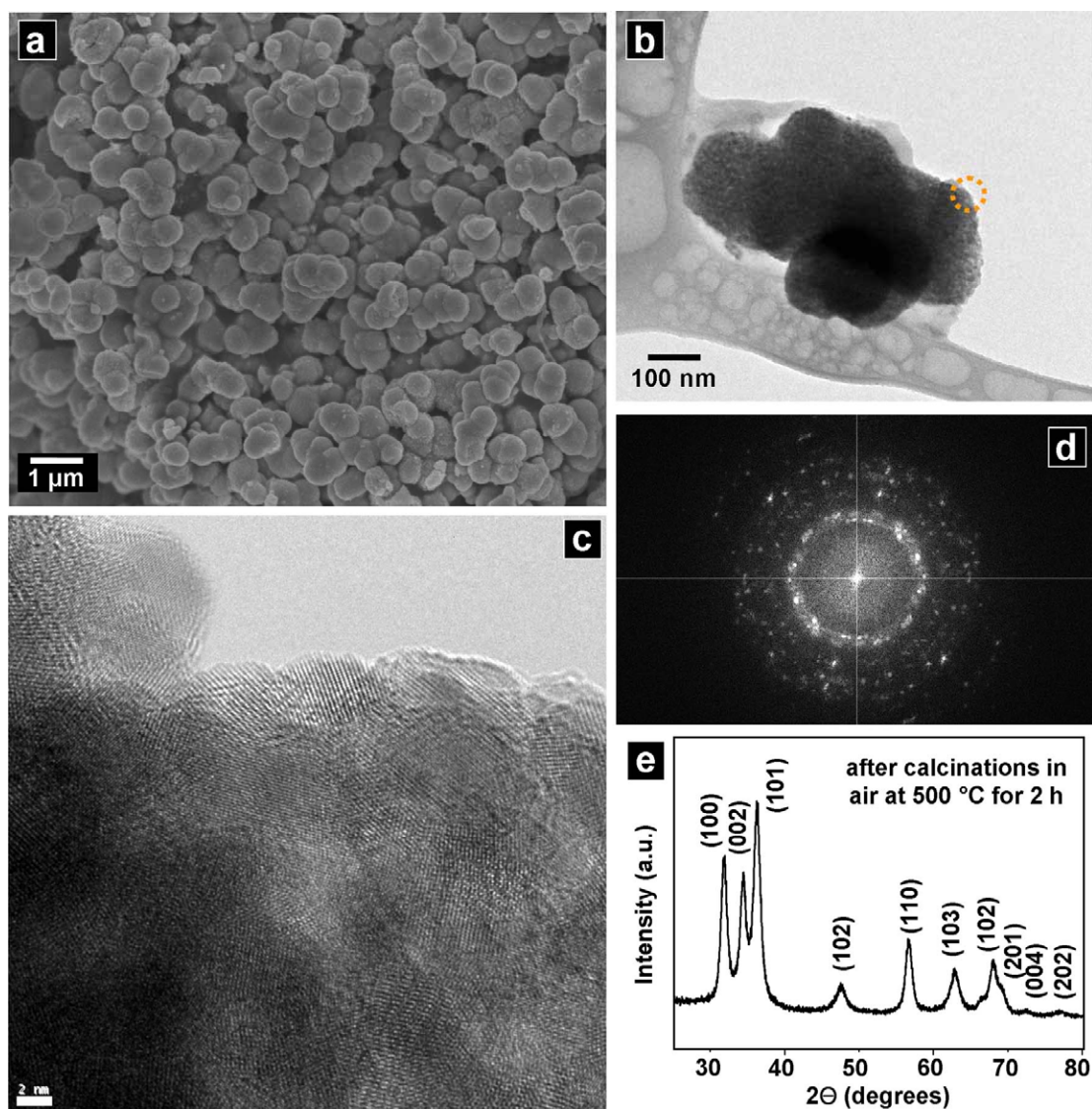


Figure S2. (a) SEM image of the structures obtained in a solution of 0.01 M zinc nitrate hexahydrate, 0.01 M HMT, and 1 mM vitamin C at 95°C for 1 h, followed by calcination in air at 500°C for 2 h; (b) TEM image of a structure; (c) HR-TEM image of the area indicated by the circle in (b); (d) The corresponding FFT image of (c); (e) XRD pattern of the powders.

Figures S2(c) and (d) show the structures also were polycrystalline. The carbon concentration in the form of carbide was estimated to be 0.41 at.% by XPS analysis. The crystallite size calculated from the XRD pattern was 7 nm.