

Supporting Information for:

ZnO nanorods prepared via ablation of Zn with millisecond laser in liquid media

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A series of additional experiments was carried out to verify certain assumptions. In all such experiments, the setup with “more classic” configuration was used (Fig.S1). Zinc plates were ablated vertically in a Petri dish in different ways: (i) with external cooling of the liquid; (ii) with starch added to water (as surface modifier); (iii) in water –ethanol mixture (1:9 by volume). The wavelength, pulse width, peak power, and frequency used in all the experiments were 1064 nm, 1 ms, 5 kW, and 5 Hz, respectively. Ablation time was 15 min. The morphology of the prepared products was observed and characterized by transmission electron microscopy (TEM).

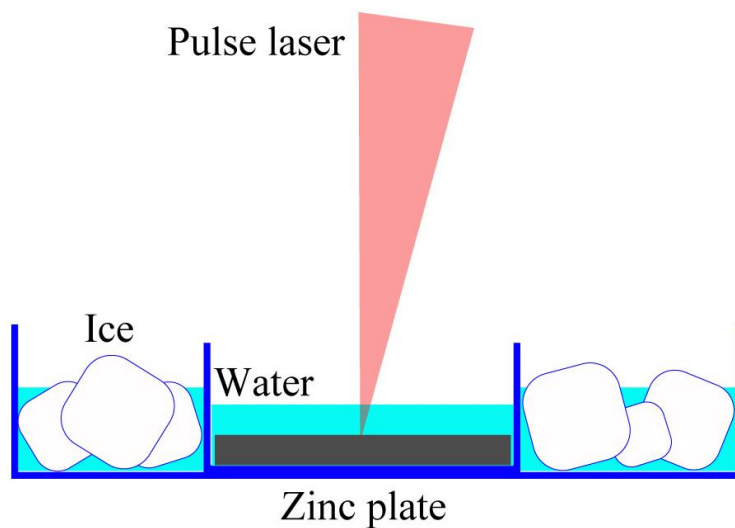


Figure S1. Liquid cooling system for laser ablation of Zn. The smaller Petri dish was used for ablating Zn plate in water, while itself being entirely immersed in water with ice cubes placed into a larger Petri dish. The temperature rise of water contained in the smaller Petri dish was essentially suppressed during this experiment.

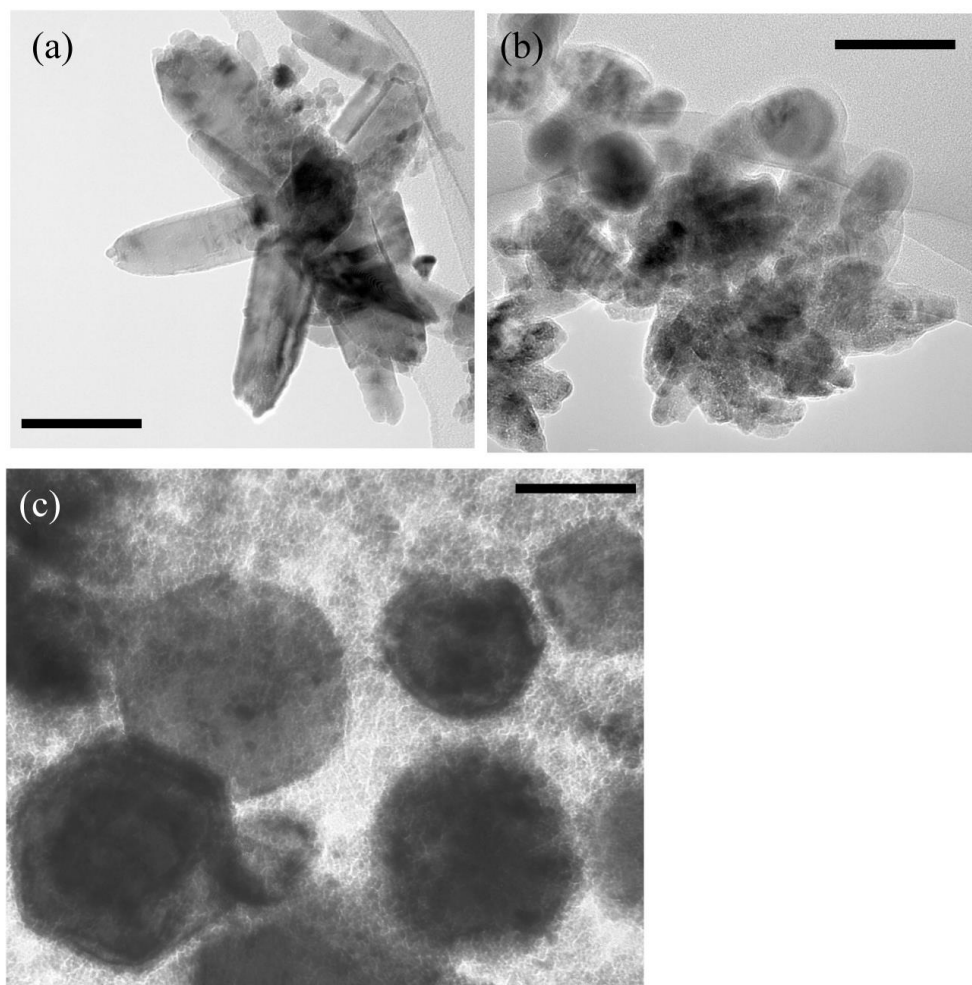


Figure S2. TEM images of products prepared in the setup shown in Fig. S1 in water without (a) and with (b) cooling. Panel (c) demonstrates ZnO nanostructures prepared under similar conditions as the products in panels (a,b) but in presence of starch and without cooling. Scale bars indicate 100 nm.

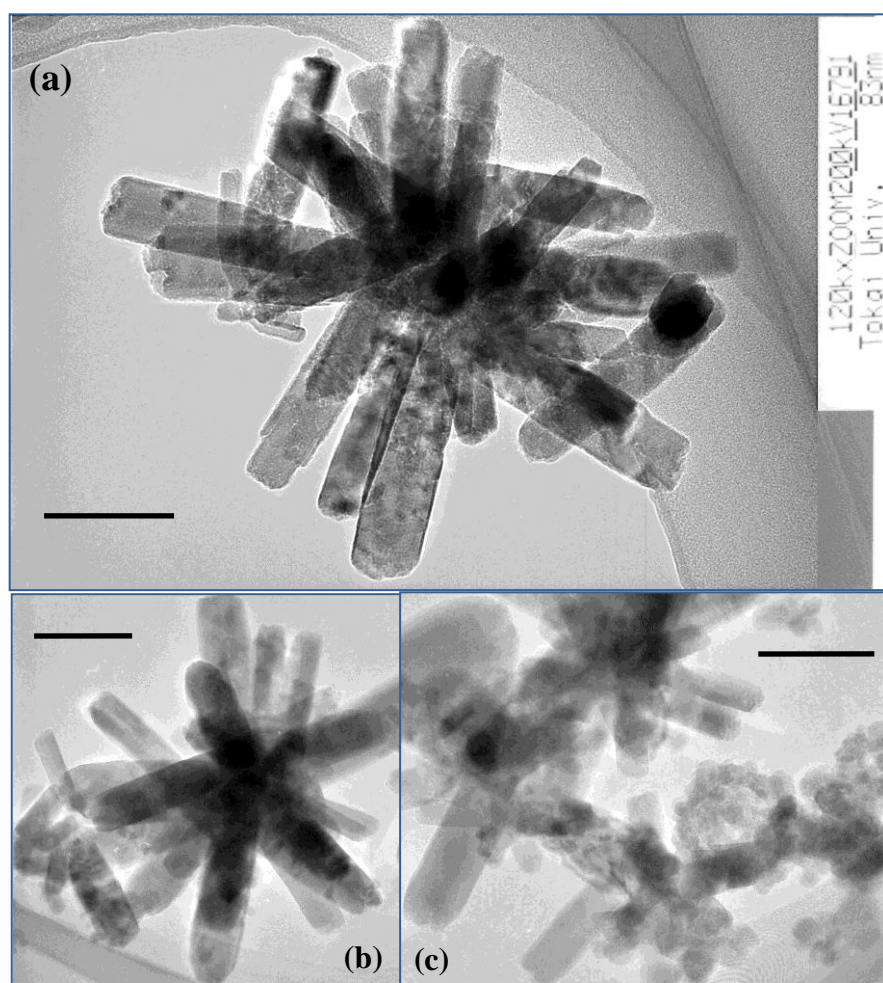


Figure S3. (a) ZnO nanorods laser-generated in water using the setup shown in Fig.S1 (with no cooling). (b,c) Similar ZnO nanorods found in the product prepared via ablating Zn plate in ethanol-water mixture (9:1 by volume). Scalebars indicate 100 nm.