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One-dimensional Growth of Zinc Crystals on a Liquid Surface[1]
CHENXI LU, YI CHENG, QIFA PAN, XIANGMING TAO, BO YANG, GAOXIANG YE, Department of Physics, Zhejiang University, Hangzhou 310027, P. R. China, THE LAB OF FILMS ON LIQUID SUBSTRATES TEAM — The catalyst-free growth of nanocrystals on various substrates at room temperature has been a long-standing goal in the development of material science. We report the growth of one-dimensional zinc nanocrystals on silicone oil surfaces by thermal evaporation method at room temperature (20 $\pm$ 2 °C). Uniform zinc nanorods with tunable size can be obtained. The typical length and width of the nanorods are 250-500 nm and 20-40 nm, respectively. The growth mechanism can be attributed to the effect of the liquid substrate and the preferential growth direction of the crystals. This result provides a novel and simple way to fabricate the precursors (zinc crystals) for preparation of Zn-based semiconductors and other metallic crystals on liquid substrates.

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