

Abstract Submitted
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CuS Nanoparticles for Photothermal Ablation of Tumor Cells

WEI CHEN, Department of Physics, University of Texas at Arlington, Arlington, TX 760190059, YUEBIN LI, Department of Physics, University of Texas at Arlington, TX, CHUN LI, WEI LU, QIAN HUANG, MIAO HUANG, The University of Texas M. D. Anderson Cancer Center, Houston, Texas 77030, UNIVERSITY OF TEXAS AT ARLINGTON, ARLINGTON, TX 76019-0059 TEAM, THE UNIVERSITY OF TEXAS M. D. ANDERSON CANCER CENTER, HOUSTON, TEXAS 77030 TEAM — Here, we report the photothermal ablation effects of 3-nm CuS nanoparticles. CuS nanoparticles exhibited strong absorption in the near infrared (NIR) region. Irradiation by a laser beam at 808 nm elevated the temperature of aqueous solutions of CuS nanoparticles as a function of exposure time and nanoparticle concentration. CuS nanoparticles mediated photothermal destruction of HeLa cells in a laser dose- and nanoparticle concentration-dependent manner, and displayed minimal cytotoxic effects with a profile similar to that of gold nanoparticles. Owing to their unique optical property, small size, low cost of production, and low cytotoxicity, CuS nanoparticles are promising new nanomaterials for cancer photothermal ablation therapy.

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