

Abstract Submitted
for the OSF12 Meeting of
The American Physical Society

Photothermal Therapy of Cancer Cells mediated by Blue Hydrogel Nanoparticles TAEYJUANA CURRY, University of Michigan, Ann Arbor, MI, USA 48108, TAMIR EPSTEIN, H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL, USA 33612, RAOUL KOPELMAN, University of Michigan, Ann Arbor, MI, USA 48108 — Coomassie Blue dye has been covalently linked into a polyacrylamide nanoparticle matrix, so as to form nontoxic, biologically compatible, biodegradable and cell-specific targetable nanoparticles for photothermal therapy (PTT) of cancer. The nanoparticles were found to be approximately 80-95 nm in diameter, with an absorbance value of 0.52. Using an inexpensive, low intensity LED array light source (590nm, 25mW/cm²), with 20 minute excitation times, at 37 °, PTT induced hyperthermia/thermolysis in HeLa cells, in vitro, resulting in virtually complete cell death when observed 3 hours after exposure. These multi-functional particles have been previously used in cancer delineation, for surgery, and in photoacoustic imaging studies; the addition of the PTT function now enables a multi-pronged medical approach to cancer.

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Date submitted: 04 Sep 2012

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