Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Synthesis of fluorescent gold nanoparticle and their application in the photothermal treatment of HCC 1395 cell lines ED KNEELAND, BIRGIT MELLIS, University of St Thomas — Monodispersed, fluorescent gold nanoparticles with gallic acid based ligand shells are synthesized at various concentrations with an average particle size of 1-2nm. Monodispersity and particle size are confirmed via dynamic light scattering. The Surface Plasmon Resonance (SPR) peak is determined via UV-Vis. Afterwards HCC 1395 cells, derived from breast cancer cells, are infused with the gold nanoparticles. Results are presented on how infusion with gold nanoparticles and photothermal treatment affect the cell viability. The photothermal treatment of the solution is performed at 532nm with a MGL III 532-300mW laser near the SPR peak over different time intervals. The photothermal treatment of the solution results in a locally raised temperature and can possibly affect cell viability. After photothermal treatment and incubation for 24hours, the cells are stained and cell viability is analyzed.

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Date submitted: 09 Jan 2020 Electronic form version 1.4