

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Spectrum and Dynamics of Luminescence from Laser-created Bubbles in Pressurized Water¹ FRANK LEE, DAVID HECHT, EMIL A. BRUJAN, GARY A. WILLIAMS, UCLA — The properties of the luminescence pulse from laser-created bubbles in pressurized water are studied for pressures between 0.25 and 15 bars. The duration of the light pulse is linear in the maximum bubble size, but for a given bubble size it increases with pressure. The spectrum of the light is blackbody in form, with a temperature that increases somewhat with pressure, from 8100 K at 1 bar to 9400 K at 10 bars. At higher pressures the blackbody temperature drops, but this is primarily due to the rapid onset above 10 bars of a fission instability, where the bubbles split into two just before the collapse point.

¹Work supported by the NSF, DMR 01-3111, E. A. B. supported by a Fulbright Fellowship

Gary Williams
UCLA

Date submitted: 23 Nov 2004

Electronic form version 1.4