

Abstract Submitted
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Luminescence Spectra of Laser-induced Cavitation Bubbles¹

EMIL A. BRUJAN, GARY A. WILLIAMS, UCLA — The luminescence spectra of laser-induced cavitation bubbles near rigid boundaries are measured for various relative distances between the bubble and the boundaries. We find that the luminescence spectra of bubbles collapsing near a single boundary consist of only a blackbody continuum. Luminescence from bubbles collapsing between two parallel rigid boundaries also contains OH* emission bands similar to those found in multi-bubble sonoluminescence. In both cases, the bubble interior temperature deduced from blackbody fits decreases with the distance between bubble and boundary. The shape instabilities of the collapse near a boundary and the consequent presence of high-velocity jets inside the bubble at its minimum volume will be discussed in connection with the generation of the OH* radicals.

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