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Luminescence from Laser-Induced Bubbles in Water-Glycerol Mixtures: Effect of Viscosity[1] ERIN ENGLERT, ALLISON MCCARN, GARY A. WILLIAMS, Dept. of Physics and Astronomy, UCLA — We have studied the luminescence emitted from collapsing laser-induced bubbles in water-glycerol mixtures, as a function of the mixture concentration and applied hydrostatic pressure. The primary effect of increasing the glycerol concentration is to increase the viscoslty of the fluid. We find that the pulse duration of the luminescence increases by more than a factor of two as the concentration increases up to 33% by volume, where the viscosity is nearly four time that of pure water. At higher concentrations the pulse duration remains nearly unchanged, until no luminescence can be observed at concentrations above 60% (viscosity greater than 15 times that of water). The pulse duration further increases with applied pressures up to 8 bars, similar to that seen earlier in pure water.

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