

## INVESTIGATION OF INTENSITIES OF SINGLE BUBBLE SONOLUMINESCENCE OF ACIDS HAVING SIMILAR VISCOSITIES

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Single bubble sonoluminescence (SBSL) is the emission of light by an acoustically trapped and periodically driven gas bubble collapses violently in the liquid medium. The intensity of light emitted by sonoluminescence (SL) bubble depends on the physical properties of the host liquid and also external conditions. Among these conditions, experimental studies on SBSL in two inorganic acids, 60 wt% H<sub>2</sub>SO<sub>4</sub> and 50 wt% H<sub>3</sub>PO<sub>4</sub> were conducted. These two inorganic acids have approximately similar viscosities in the above mentioned concentrations. A photomultiplier tube was used to obtain intensity measurements and the fiber optic spectrometer was used to obtain the spectral measurements.

The experiment demonstrates that the intensity of SBSL in 60 wt% H<sub>2</sub>SO<sub>4</sub> and 50 wt% H<sub>3</sub>PO<sub>4</sub> were thousand times higher than that in the water, but the stationary of the sonoluminescence (SL) bubbles are lower than that of the water. SBSL spectrums of both sulfuric acid and phosphoric acid are in visible region according to spectrometer readings. SBSL spectrum of sulfuric acid indicates its peaks near IR region and SBSL spectrum of phosphoric acid shows the peaks near to UV region. Therefore, the intensity of SBSL in sulfuric acid is higher than that in phosphoric acid according to our naked eye. PMT count of SBSL in phosphoric acid is higher than that in sulfuric acid as demonstrated by their spectrums also.

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