

## **P-24: Experimental evidence of viscosity influence in the cavitation structure bubbles.**

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As it is well known when a uid is irradiated with a high intensity ultrasonic wave a large number of oscillating micro-bubbles appears in it. This phenomenon is called acoustic cavitation [1]. The cavitating bubbles appear, particularly, in the vicinity of the uid container edge. During cavitation, the bubbles are organized in striking structures, such as cones, laments, rings, star sh and others [2, 3].

Several physical factors like viscosity, density and surface tension have been identi ed as in uent pa-rameters in the structure formations [4]. The progress in the knowledge of factors in uent in the shape and size of cavitating eld has great importance in di erent industrial process as well as in the scienti c research relate with the cavitation phenomena. This knowledge could maximize the bene ts of physical-chemical process produced or assisted by cavitation [5].

This paper presents experimental study of the onset of cavitation for di erent viscosity in water. The viscosity is changed in the water using a tensoactive (Poly-Ethylene Glycol [6]). The di erent cluster shape will be recorded and correlations with problem variables will be searched.

Key words: Acoustic Cavitation, Bubble Structure, Variation of Viscosity

### **Referencias**

- Leighton T.J., 1994, *The Acoustic Bubble*, Academic press.
- Mettin R., 2005, *Bubble and particle dynamics in acoustic eld: Modern Trends and Aplications*, pp 1-36.
- Moussatov A., Granger C. and Dubus B., 2003, *Ultrasonics sonochemistry* 10, 191.
- Akhatov I. and Gumerov N., 1997b, *The role of surface tension in stable single-bubble sonolumini-cence*, *Phy. Rev. Letters* 78, 227 - 230.
- Louisnard O., Gonzalez J., Tudela I., Klima J., Saez V. and Vargas Y., 2009, *Ultrasonics Sonoche-mistry* 16, 250.
- Gonzalez P., Camacho F. and Blazquez G., 1994, *J. Chem. Eng. Data* 39, 611-614.