

Abstract Submitted
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On the generation of mini-clusters of microbubbles using water electrolysis ANA MEDINA-PALOMO, ELENA IGUALADA-VILLODRE, JAVIER RODRIGUEZ-RODRIGUEZ, Carlos III University of Madrid — The interest on microbubbles and their behavior under ultrasound excitation has increased over the last years. Several phenomena can be observed when microbubbles interact with an ultrasound field. For instance, they can oscillate at their natural frequency, translate in the direction of the acoustic pulse (due to the well-known Bjerknes force) or coalesce (due to the secondary Bjerknes force). To study these effects, it is convenient to have an isolated bubble or a cloud consisting of a few bubbles. Using electrolysis we are able to produce mini-clusters of bubbles with controlled parameters, namely, bubble number and size distribution. We achieve this control using voltage pulses of well-defined properties. The most remarkable characteristics of this technique are its low cost and ease of implementation. We illustrate the applications of the technique with some academic examples, like the validation of the expressions for the primary and secondary Bjerknes forces. Funded by the Spanish Ministry of Economy and Competitiveness through grant DPI2011-28356-C03-02.

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