

Collapse of Cavitation Bubble Inside Microalgae

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One of the interesting methods used in disrupting microalgae is ultrasonication. In this study, the Keller-Miksis equation was used to simulate the dynamics of cavitation bubble inside microalgae cell species *C. gracilis*, *C. calcitrans* and *Nannochloropsis sp.* at frequencies of 1.0, 2.2, 3.3 and 4.3 MHz at the same acoustic intensity of 2.2 W/cm^2 and the physical effects of collapsed bubble to the microalgae cell were also investigated. The result showed that using the ultrasonic intensity at 2.2 W/cm^2 and the frequencies of 2.2, 3.2 and 4.3 MHz can produce the bubble to occur inside the microalgae cell. The impulsive pressure generated by the microjet from collapsed bubble inside the microalgae cell is high enough to break the microalgae cell wall since its value is found to be greater than Young's modulus of microalgae cell.

Author: Mr THIPMAUNGPROM, Yanathip (Chulalongkorn University)

Co-author: Dr PHAISANGITTISAKUL, Nakorn (Chulalongkorn University)

Presenter: Mr THIPMAUNGPROM, Yanathip (Chulalongkorn University)

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