



# TUAT Fluid Dynamics Seminar

## Ultrasound-induced cavitation and hydrodynamic phenomena in water under dissolved oxygen supersaturation: Role of cavitation bubbles in ultrasonic cleaning



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Place: Building 6 - Room 501

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organized by: Assoc. Prof. Y. Tagawa (tagawayo@cc.tuat.ac.jp)

### Abstract

The dynamics of acoustic cavitation bubbles play an essential role in "efficient" ultrasonic cleaning, but may cause damage to cleaning surface in case bubble collapse is violent enough to accompany strong shock emission and re-entrant liquid jet collision against the surface. Here, the use of dissolved oxygen (DO) supersaturated water is proposed toward "damageless" low-intensity ultrasonic cleaning

where mild bubble dynamics are expected to clean surfaces softly. In this talk, visualization of ultrasound-induced acoustic and

hydrodynamic phenomena in water whose DO supersaturation is an experimental parameter will be presented to show the importance of dissolved gas supersaturation for ultrasonic cleaning to be both efficient and damageless.

