

Abstract Submitted  
for the DFD16 Meeting of  
The American Physical Society

**Purging dissolved oxygen by nitrogen bubble aeration** TATSUYA YAMASHITA, KEITA ANDO, Department of Mechanical Engineering, Keio University — We apply aeration with nitrogen microbubbles to water in order to see whether oxygen gas originally dissolved in the water at one atmosphere is purged by the aeration. The concentration of dissolved oxygen (DO) is detected by a commercial DO meter. To detect the dissolved nitrogen (DN) level, we observe the growth of millimetre-sized bubbles nucleated at glass surfaces in contact with the aerated water and compare it with the Epstein-Plesset theory that accounts for DO/DN diffusions and the presence of the glass surfaces. Comparisons between the experiment and the theory suggest that the DO in the water are effectively purged by the aeration.

Tatsuya Yamashita  
Department of Mechanical Engineering, Keio University

Date submitted: 31 Jul 2016

Electronic form version 1.4