

## **Investigation into the efficiency of ultrasound ballast water purification**

Advancements made to the marine cargo industry have increased the speed and ease with which commodities can be transported but have also increased the chances of biological interchange between isolated regions. Ultrasound is a relatively new means of ballast water purification, although it has been used in shore side facilities for industrial cleaning purposes and water purification. However, relationships between effective frequencies, power densities, and exposure periods are not well understood. This investigation sought to add to the present body of knowledge by investigating the percent mortality of plankton cells when exposed to a high ultrasound frequency (200 kHz) from a transducer powered by 10Volts for 30 minutes under static conditions. This investigation found that there was no statistical difference in the reduction of survival of cells between the control and sonication groups. This was attributed to the static experimental design and low amount of applied energy.

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