

## **Ultrasonic atomiser system performance characterisation study for water purification system development**

### **ABSTRACT**

This paper presents a study in characterising the ultrasonic atomiser system performance for water purification system development. An experiment facility is developed for performing the water atomisation and condensation process for characterising the system performance. Ultrasonic atomiser utilised for atomising the storage water to become fine droplet or mist. The mist flowed into the mist trap to be condensed as the system product yield. The system performance characteristics (atomisation rate, yield rate, and efficiency) increased with the increment of atomiser units. System setup with four atomisers is more efficient than the system with a lesser unit of atomiser, where the system efficiency at 74.3 % with the capability of atomisation rate at 72.3 g/hr and production yield at 30.25 g/hr. The system efficiency may be affected by the system incapable of wholly diverted the mist to the mist trap for the condensation process and condensation process. Overall, the ultrasonic atomiser showed the potential in water purifying applications.