

Development of a Novel Sanitization Method for Aircraft Lavatory

A Prabhakaran^{1#}, D Jayatillake¹ and TGT Peiris¹

¹Faculty of Engineering, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

[#]36-acm-0020@kdu.ac.lk

Abstract

Evaluating the efficacy of aqueous ozone as a disinfectant in the field of aviation and its potential to replace traditional chemical disinfectants is a major task. Aqueous ozone is a sustainable and environmentally friendly disinfection solution that rapidly inactivates a wide range of microorganisms, including bacteria, viruses, fungi, and protozoa. Through a comparative analysis, the research found that aqueous ozone offers several benefits over conventional chemical disinfectants in terms of broad-spectrum antimicrobial activity, extended disinfection capabilities, and eco-friendliness. The study proposes the development of a compact, portable aqueous ozone generator specifically designed for use within aircraft lavatories, which serve as environments with an intensified presence of pathogens, necessitating effective disinfection measures. The research concludes that aqueous ozone is a promising disinfectant for aircraft lavatories, providing an efficient and sustainable solution for maintaining high levels of hygiene and minimizing the risk of microbial transmission and a portable aqueous ozone generator will be a better system to apply. However, practical considerations such as equipment requirements, operational protocols, and regulatory compliance need to be addressed for successful implementation. Overall, this research highlights the potential of aqueous ozone as a replacement for chemical disinfectants in aircraft lavatories, suggesting its adoption can lead to improved hygiene standards and enhanced passenger health-related safety.

Keywords: *Aqueous ozone, Aircraft lavatory, Disinfection*