A dynamics monitoring of volatile disinfection by-products in indoor swimming pool air

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Abstract

Water chlorination is the most important method of water disinfection, and is used world wide. However, some chlorination by-products have been discovered in chlorinated water as well as indoor swimming pool environment. The presence of chlorinated disinfection by-products (DBPs) in the indoor swimming pool environment is of concern from a public health aspect, as they are suspected to be carcinogenic. Studies have indicated that the levels of DBPs in indoor swimming pool environment depend on the degree of water chlorination, the number of bathers, the number of non-swimming visitors, water temperature, air temperature, and ventilation. However, the chemical composition of swimming pool air is extremely complex and how these factors are associated with DBPs levels in indoor air is poorly understood as indicated by WHO. Therefore, this study proposed to use FTIF to monitor indoor air environment. Factors affect the level of DBPs levels in air are collected simultaneously.