

## PROCEEDINGS

# Attempts for Odor Reduction Caused by Railroad Vehicle Air Conditioner

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## ABSTRACT

Korea's Daegu Railway Line 3 is a line operated by three-car train of unmanned railway vehicles running over an elevated bridge. Complaints about bad odors when air conditioners are turned on during the summer and late spring and early fall are increasing. In the case of Daegu Line 3, which is exposed to the external environment, the stopping section is shorter than that of regular railways, and the congestion rate by time period/section changes rapidly. Since the perceived temperature is different for each gender/individual of the passengers, the set temperature of the air conditioner is frequently changed due to the coexistence of requests to start/stop cooling operation. Therefore, it is difficult to schedule the operation of the air conditioner, and unpleasant odors are frequently generated due to the operation and stop of the air conditioner, and the number of civil complaints resulting from this is increasing. In this study, we studied the air-conditioning odor generation mechanism of railroad cars to determine the cause of odor during cooling operation in the summer and nearby seasons, and attempted field measurements to identify the cause of odor. In addition, in order to reduce odor during operation/stop of the cooling system, various technologies (ionizer, antibacterial duct, anti-condensation, UV sterilization evaporator, etc.) to reduce odor from the cooling system in the summer were reviewed. Based on this, a prototype for reducing and removing odor was produced and its performance was evaluated.

## KEYWORDS

Air-conditioner in railway vehicle; reduction of odors

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