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Window ventilation system with artificial neural network for reducing fine dust indoors

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This study proposes a window ventilation system according to the of indoor and outdoor air quality. system artificial intelligence (AI) ventilation monitor indoor and outdoor air quality in real time based on the Internet of Things (IoT). maximizes ventilation efficiency Bernoulli's principle. The study results of this study are as follows: designed to create comfortable indoor environments using weather and air quality information. functions applied. First, AI technology used to predict the ventilation operation according to indoor . based IoT used to monitor indoor and outdoor in real time. Bernoulli's principle ued to maximize the ventilation efficiency. The AI-based window ventilation system is expected to respond to various environmental changes to improve indoor air quality. can minimize building energy consumption automatically ventilation.

Fig. 1.1 Comparison of operation between existing ventilation and window ventilaton with artificial intelligence

Fig. 1.2 Artificial intelligent Window ventilation system.

Recent Publications:

1. 2015, Effect of the solar radiative properties of existing building roof materials on the energy use in humid continental climates, [Energy & Buildings]
2. 2016, Development of PCM cool roof system to control urban heat island considering temperate climatic conditions [Energy & Buildings]
3. 2016, Development of a small wind power system with an integrated exhaust air duct in high-rise residential buildings, [Energy & Buildings]
4. 2017, Proposal of a PCM underfloor heating system using a web construction method, [International journal of polymer science]
5. 2017, Effect of PCM cool roof system on the reduction in urban heat island phenomenon, [Building & Enveironment].

Biography

Young Kwon Yang is currently a PhD candidate with the Centre for Sustainable Architecture and Building Systems Research at Chung-Ang University. Yang obtained patents for auto-ventilation systems, latent heat of phase change materials and solar heat exchange system, and phase change materials as roof finishing materials while completing a doctoral course in 2016-2017.

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