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Jin Chul Park, J Material Sci Eng 2017, 6:10 (Suppl)
DOI: 10.4172/2169-0022-C1-088

14th International Conference on

ENERGY AND MATERIALS RESEARCH

December 06-07, 2017 Dallas, USA

Window ventilation system with artificial intelligence for dust particles reduction

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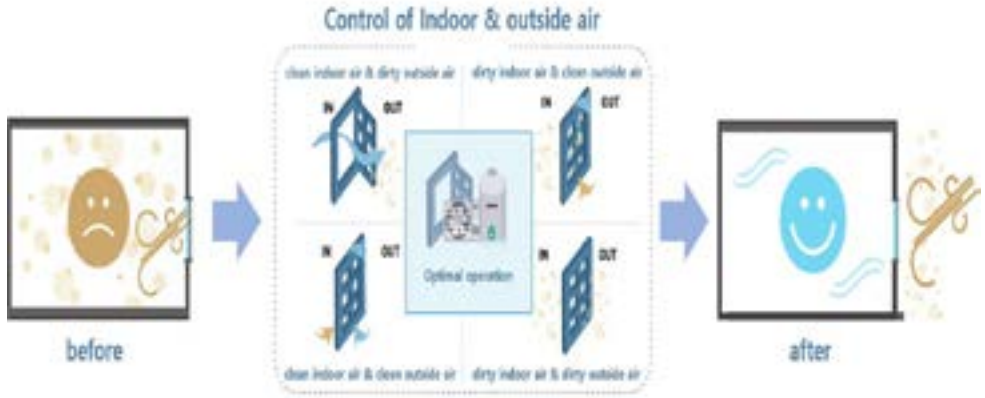
Since we humans spend more than 85% of the day indoors, the management of indoor air quality is very important for health. Particularly, most indoor dust particles are generated indoors, but they are also introduced into the room due to external environmental pollution. Therefore, in recent research, dust particles are seriously threatening the health of occupants. There are many ways to control the dust particles in the room, but ventilation is most effective. However, ventilation is only effective on the condition that the outside air is clean. That is, when the outside air is contaminated, it is necessary to purify the outside air. Therefore, this study proposes a ventilation system using windows that can control indoor and outdoor air together. In particular, it is a ventilation system that takes into account various new factors such as artificial intelligent, IoT, and behavior patterns of occupants, and indoor / outdoor and temperature / humidity. Also, in order to control polluted indoor / outdoor air, a window ventilation system with an air filter is provided. And the window ventilation system has the advantage of saving building energy by being connected with artificial intelligence. Therefore, the artificial intelligent window ventilation system will provide a comfort environment for occupants and contribute to the improvement of indoor air quality.



Biography

Jin Chul Park is an architectural engineering Professor and has been working in Chung-Ang University since 2004. He had been postdoctoral work from 2001 to 2002 in University of Michigan (Ann Arbor, USA). In association activities, he is the president of the KGBC (Korea Green Building Council) and the vice president of AIK(Architectural Institute of Korea). Also he has experienced an Editor of JABBE (Journal of Asian Architecture and Building Engineering) from 2010 to 2012. He has been interested in indoor air quality, energy saving in buildings. In his recent research, he is carrying out research to reduce greenhouse gas and save energy and to create indoor environment. He has authored or coauthored 50 fully-refereed technical articles during 10 years.

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