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Academia and Industry Join Forces to Improve Indoor Air Quality

A research team at the Hong Kong University of Science and Technology (HKUST) has received a grant of HK\$3.5 million from the Innovation and Technology Fund (ITF), administered by the Government's Industry Department, to support the development of advanced ventilation technologies that can improve the indoor air quality. The Uni-Zone Advanced Technology Co Ltd, a local ventilation system manufacturer and supplier, has pledged to match the ITF grant with another HK\$3.5 million.

"The aim of our project is to construct two experimental facilities, one in HKUST's Annex and the other in the Nansha Information Technology Park being developed jointly by the Fok Ying Tung Foundation and the University," said Assistant Professor Christopher Chao of the HKUST's Mechanical Engineering Department and Coordinator of the project. "Ventilation systems based on the advanced floor displacement concept will be built inside the facilities for research and development." A characteristic of floor displacement systems is that their ventilators are built on the floor instead of at ceiling level. Researchers have demonstrated that displacement systems can achieve better ventilation efficiency--that is to say, these systems can bring in more fresh air for similar energy consumption as traditional systems.

Through this collaboration with HKUST researchers, Uni-Zone expects that the project will help them develop expertise in optimizing the design of advanced ventilation systems for Hong Kong and the Chinese Mainland. One goal, for example, is to find out the optimum deployment of ventilators inside a room for effective air circulation. "Our objective is to develop a new generation of intelligent energy efficient ventilation systems for use in buildings," said Mr Herbert Ma, Uni-Zone's Executive Director and Deputy Coordinator of the project. "We believe that the expertise acquired in these studies will enhance our future business."

Besides Professor Chao and Mr Ma, the HKUST research team also includes: Professor Ping Cheng, Head of the Mechanical Engineering Department and Director of the Center for Energy and Thermal Systems, who provides support on energy studies; Dr David Young, Director of the Applied Technology Center, who is responsible for project management and logistics support; and Dr Ming Fang, Director of the Institute for Environment and Sustainable Development, who offers support on environmental studies.