

Smart cultivation platform facilitates indoor farming

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Credit: The Hong Kong Polytechnic University

Researchers in Hong Kong have developed the Smart Indoor Cultivation Platform that can be set up in urban buildings and save water consumption by 95% compared with conventional methods.

To facilitate indoor farming, a research team comprising Prof. Michael Tse, Dr Martin Chow, Dr Loo Ka-hong and Dr Lai Yuk-ming at the Department of Electronic and Information Engineering developed the Smart Indoor Cultivation Platform. It adopted novel technologies including effective photosynthetic-active-radiation lighting [system](#), hydroponic and aeroponic irrigation systems, network sensing and novel environmental control system for optimising growth profiles.

Under this system, the programmable photoperiod and light intensity with specific wavelengths in the lighting system can accelerate the

growth of the plants. The sensors and automatic control system can optimise the growth environment for different plant species. This computerised way of managing the cultivation process also helps develop optimal [growth](#) profiles. Through automatic data collection and analysis, the best [cultivation](#) methods for plants can be determined.

Compared with conventional method, this system can reduce water consumption by 95% and can be set up in urban buildings. This can encourage city dwellers to plant indoors to maintain sustainable and stable food supply.

Dr Lai Yuk-ming earlier won a silver medal at the 2016 International Invention Innovation Competition in Canada (iCAN 2016) with this invention.

Provided by Hong Kong Polytechnic University

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