

3 June 2019

**BSE Professor Awarded Gold Medals at
The 47th International Exhibition of Inventions of Geneva**

The Department of Building Services Engineering (BSE) of The Hong Kong Polytechnic University (PolyU) was honoured to announce that Prof. Yang Hongxing of BSE and his teams received two gold medals for their inventions at the 47th International Exhibition of Inventions of Geneva held from 10 to 14 April 2019. The exhibition was regarded as the most important specialist event of its kind in the world.



Gold Medal for an Indirect Evaporative Cooler

One invention was for an indirect evaporative cooler (IEC) for efficient energy recovery. Consisting of alternating dry and wet channels, the IEC uses exhaust air and water evaporation to pre-cool fresh air for central air-conditioning systems of buildings. His research team included Dr. Chen Yi, Ms. Min Yunran and Mr. Shen Zhicheng of BSE.



Prof. Yang Hongxing, Mr. Shen Zhicheng and Ms. Min Yunran

The other gold medal was from a consultancy project to develop a prototype for the third generation in-building hydropower system for a local property company. Not only was the hydraulic design of the hydro turbine improved to enhance efficiency, the new system also features magnetic coupling for transmission and sealing, which does not require external power source, minimising the likelihood of wear-and-tear. Furthermore, a sub-system of bypass is designed to prevent excessive water pressure reduction and ensure normal water supply to the properties. The system has an output of about 200W when consuming 3 bar water pressure for replacing pressure reducing valves of water supply pipelines in buildings, generating hydroelectricity in a green and low-cost way while reducing carbon emissions. About 1.4 tonne of carbon dioxide emission can be saved per annum, which is equivalent to about 60 trees for a single power generation system. His team for this project included Dr. Du Jiyun and Mr. Shen Zhicheng of BSE.



**Gold Medal for Developing a Prototype for
the Third Generation In-building Hydropower System**

The 47th International Exhibition of Inventions Geneva has attracted over 800 exhibitors from more than 40 countries/regions. It was organized under the patronage of the Swiss Federal Government, the State and the City of Geneva as well as the World Intellectual Property Organization.

The Department would like to congratulate Prof. Yang and his teams on these excellent achievements.