

THE EDUCATION UNIVERSITY OF HONG KONG
FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES

Research Output/Impact/Knowledge Transfer Prize
for the Dean's Research Fund 2019/20

Brief Introduction of Awardee's
Research/KT Publication/Study/Output and Future Research/KT Development

Awardee (Dept): Dr Chow Cheuk Fai, Associate Professor (SES)
Publication Title/KT project: Catalytic Chemosensing Assay for Selective Detection of Methyl Parathion Organophosphate Pesticide

A. *Briefly introduce your research/KT publication/study/output for which you have received the prize.*

Methyl parathion pesticide is a useful but danger chemical that pollutes our freshwater system. But the situation is changing, we have successfully invented a 3-in-1 molecular device with multi-functions: "Detection, Amplification of signal, and Elimination" for handling of tthis pollutant found in water. The research work funded by the Hong Kong Research Grants Council was published in *Chemistry A European Journal* **2019**, 25, 9643 (COVER PAGE and HOT PAPER).

This new technology is developed through a special molecular design, called catalytic chemosensing assay (CCA), multifunctional properties were incorporated into a ruthenium-copper containing supramolecule. The device when detecting methyl parathion in the water bodies will give naked eye observable color signal and subsequently degrades the pesticide into harmless chemicals.

B. *How you used/will use your prize and perhaps its usefulness to your research/KT development?*

Recently, public concerns on environmental issues such as plastic waste. In response to these emerging concerns, we worked collaborative with our partners, composing of scientists, business leaders, and stakeholders from industries, to transfer our research results to community. This Dean impact prize will be used to educate our next generation about the importance of environment management. Teaching and learning activities including workshop and learning camp will be designed to facilitate the student's learning in this topic.

C. Expected research/KT outcomes/outputs/impacts arising from this prize.

By gathering all the resources, we hope to create new perspectives and ideas to solve the problems of toxic substances. Furthermore, we would like our research results to be used to improve our society.