

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

**Impact Case Study Prize**  
**for the Dean's Research Fund 2020-21**

**Brief Introduction of Awardee's  
Impact Case Study and Future Research/KT Development**

<b>Awardee (Dept):</b>	Dr Deng Wenjing, Assistant Professor (SES) Prof Wu Shiu Sun Rudolf, Advisor (Environmental Science) (SES) Prof Ho Wing Kei, Professor (SES)
<b>Impact Case Study:</b>	UV-filters and plasticizers contamination in the urine and hair of preschool children, airborne particles in kindergartens, and drinking water in Hong Kong

A. *Briefly introduce your impact case study for which you have received the prize.*

This study showed that children in Hong Kong are exposed to some emerging endocrine disruption chemicals (EDCs) such as BP type UV-filters and plasticizers. These chemicals were detected ubiquitously in samples of the children's hair and urine, in tap water and bottled water, and airborne particles collected from kindergartens in Hong Kong. To the best of our knowledge, **we are the first research group to detect the above new chemicals in so many matrixes (air, tap water, bottled water, and urine/hair)**. These data indicate that non-dietary exposure may serve as a route of human exposure to these potentially harmful compounds. In conclusion, the study can help us to **better understand the health effects associated with children's exposure to these new chemicals, given the potential toxicity of low-dose exposure.**

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

In this case study we sought to **better understand the species of UV filters and plasticizers and perfluoroalkyl substances and the burden in Hong Kong's child population.** We therefore quantified common EDCs and their metabolites, and the new alternatives in urine and hair samples of Hong Kong children, in drinking water (tap water and bottled water) and airborne particles, using high-performance liquid chromatography electrospray ionization-tandem mass spectrometry (HPLC-ESI-MS/MS). We also performed a children's health risk-assessment. **This is the first report of EDCs levels in paired urine/hair and in kindergarten air samples in Hong Kong.** Our results indicate that further information on human exposure to EDCs via drinking water intake would be of special interest.

**With this prize, we will expend this impact to more emerging chemicals, such as disinfection by-products, so that we can picture out the health impact of children in Hong Kong.**

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

One output (journal paper) will be published. The data obtained will be used for drafting some media papers to arouse more attention of children's exposure of chemicals in different environmental matrix. This impact prize will trigger a better and complete study on children's exposure on EDCs and will make international impact.