Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2020-80
Project Title:	Cumulative effects of microplastics and harmful microalgal growth on marine ecology and seafood safety in Hong Kong
Principal Investigator:	Professor Lo Chun Lap Samuel, (1/6/2021 to 30/4/2022), and Dr Fang Kar Hei James, (w.e.f. 1 May 2022), Assistant Professor, Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University
Total Approved Grant:	$481,600
Duration:	1/6/2021 to 31/5/2023
Project Status/Remarks:	On-going
Project Scope:	The project aims to evaluate the combined ecological and seafood safety hazards induced by the occurrence of marine harmful algal bloom (HAB) and accumulation of microplastics. Risk of occurrence of HAB with influences of microplastic will be assessed by determining the effects of presence of microplastics on physiological responses, growth and toxicity on the target harmful microalgal species. Further, risk of seafood poisoning will be determined by investigating the affinity of shellfish toxins on microplastic molecules, as well as the bioaccumulation of toxins on contaminated microplastics by green-lipped mussels, a shellfish commonly found in Hong Kong coastal region. Correlations among microplastic levels and microalgae populations or their toxins in seawater and in green mussels collected in local mariculture zones will also be investigated. This project is the first of its kind in Hong Kong and the results obtained will increase public awareness of relationship between microplastic pollution and HAB in Hong Kong.
Summary of the Findings/Outcomes:	To be available upon completion of the project