Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2020-19
Project Title:	Enhancing marine biodiversity on the artificial seawall of the Integrated Waste Management Facility (IWMF) with innovative and environmentally friendly eco-engineered fixtures
Principal Investigator:	Professor Leung Mei Yee Kenneth, Department of Chemistry and State Key Laboratory of Marine Pollution, City University of Hong Kong
Total Approved Grant:	$1,200,000
Duration:	1/10/2022 to 30/9/2024
Project Status/Remarks:	To be Commenced
Project Scope:	An eco-shoreline with eco-friendly seawalls has been constructed at the Integrated Waste Management Facility (IWMF) in Shek Kwu Chau by the Hong Kong SAR Government. The seawalls are made of concrete and featured with 296 rectangular cavities within the intertidal zone. Each cavity offers a unique habitat that retains a layer of seawater and provides shade to marine organisms during low-tide period to enrich marine biodiversity. However, the seawall surface is too smooth (without groves and ridges) to facilitate colonisation of marine life, and there are no hiding places/refuges within each cavity for small organisms to avoid predation. To further augment marine biodiversity, the seawalls will be retrofitted with innovative eco-engineered fixtures, which are composed of waste materials (e.g. ash from T-Park and dredged marine sediment) and include microhabitat blocks, complex eco-tiles and eco-basins. The project team will also install stainless-steel meshes to partially enclose some of the cavities to reduce predation pressure and protect small organisms. This project aims to design and deploy the proposed eco-engineered fixtures, and evaluate their effectiveness for further enhancing the overall intertidal marine biodiversity on the eco-shoreline of IWMF, and to demonstrate and promote the concept and benefit of eco-shorelines to the general public.
Summary of the Findings/Outcomes:	To be available upon completion of the project