

## Environmental Research, Technology Demonstration and Conference Project

<b>ECF Project:</b>	ECF 2022-70
<b>Project Title:</b>	Environment and Conservation Fund - Upcycling of black soldier fly larvae oil for sustainable food waste treatment
<b>Principal Investigator:</b>	Dr Wong Chun Yuen, Department of Chemistry, City University of Hong Kong
<b>Total Approved Grant:</b>	\$495,000 (ECF & WWGF: 50/50)
<b>Duration:</b>	1/9/2023 to 28/2/2025
<b>Project Status/Remarks:</b>	On-going
<b>Project Scope:</b>	<p>Insect-based bioconversion is anticipated to be a promising approach to upcycle food waste into precious biomass. Black soldier fly larvae (BSFL) have been demonstrated to be an efficient converter of food waste back into lipids that are rich in lauric acid, oleic acid, linoleic acid and palmitic acid. Although these fatty acid contents revealed the potential use of BSFL oil as cosmetic and detergent ingredients, the possibility of upcycling BSFL oil for laundry and cosmetic applications has not been explored. This project is a collaboration between a cosmetic science research group in CityU and a black soldier fly farm in Hong Kong, aiming to develop surfactants for heavy-duty detergents and demonstrate the possibility of utilising them in cosmetic cleansing products through upcycling BSFL oil. The success of this project not only would reduce the burden of landfill, but also act as a lure to attract more individuals or organisations to engage in upcycling.</p>
<b>Summary of the Findings/ Outcomes:</b>	To be available upon completion of the project