

Environmental Research, Technology Demonstration and Conference Project

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| ECF Project: | ECF 2021-107 |
| Project Title: | A multi-source remote sensing based technique for monitoring oil spills |
| Principal Investigator: | Professor Wong Man Sing, Charles, Department of Land Surveying and Geo-informatics, The Hong Kong Polytechnic University |
| Total Approved Grant: | \$1,920,520 |
| Duration: | 1/11/2022 to 31/10/2025 |
| Project Status/Remarks: | On-going |
| Project Scope: | <p>A conventional method of marine water quality monitoring in Hong Kong is being carried out by the Environmental Protection Department which is conducted by collecting water samples every month through rigorous field and laboratory work. Remote sensing technology provides an alternative for identifying, mapping and monitoring unexpected marine incidents such as oil spills and leakages over waters, at large spatial coverage and high temporal resolution.</p> <p>To tackle the research gap, it is essential to develop a comprehensive technique to identify, detect and predict the trajectory of oil spills. Synthetic-Aperture Radar (SAR) and optical remote sensing imagery will be used in coupled with newly developed machine learning algorithms in this study. It will help identify the locations and extents of contaminated areas from oil spills. Furthermore, once the location of the oil spill is identified, the ocean dynamic and trajectory model, i.e. Finite-Volume Community Ocean Model (FVCOM) and OpenDrift will be used for trajectory tracing. The results will be shared to the Hong Kong Government, and the government departments/authorities in other major harbour cities.</p> |
| Summary of the Findings/Outcomes: | To be available upon completion of the project |