

## Development of Surface Cleaning Robot for Shallow Water

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### ABSTRACT

Aqua pollutant (river, sea, lake, etc.) is one of the major problem that occurs around the world including Malaysia. One of the major cause of the pollution come from rubbish and illegal toxic waste dumping. This cause the destruction to the aquatic species and ecosystem. River cleaning is usually done when river pollution is in critical condition. This is due to the labor cost of each cleaning project, scheduling problems and shallow water environment. Therefore, the river cleaning system is crucial to ensure that rivers are clean and free from pollution. This project aims to design and develop river cleaning robot to enable real-time monitoring of water cleanliness. Inspired by Indian lake cleaning project, the Waste Hunter Surface Robot is smaller in size and portable. The Waste Hunter Surface Robot is tele-operated robot with two main functions, which are surface cleaning and water quality monitoring. It has a flexible design to clean the various impurities on the surface and below the river's surface and trench. By implementing an automation system, the system enables in monitoring 24/7 the cleanliness of the water. This project is expected to reduce labor costs and save a large number of states or districts of money.

### KEYWORDS

Surface cleaning robot; Shallow water; Water quality monitoring

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