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(57) Abstract :

A river cleaning system is comprising, a cuboidal body-shaped robot 101 equipped with an air-inflating unit 102 at its base to maintain buoyancy on water surface and is propelled by multiple rear-mounted propellers 103, an AI-enabled camera 104 with laser fluorosensors identifies waste types and oil spills, a floating waste collection module 105 includes motorized conveyor belt 105a, L-shaped rod 105b, and vertical plate 105c, directing waste into multiple rear collection chambers 106, a polyoxypropylene-based defoamer is dispensed via a nozzle 108 upon foam detection, an oil spill containment module 109 comprises a horizontal rod 110 with first motorized roller 112 and inflatable booms 113, connected via magnetic linkages 118, an oil collection module 114 features two L-shaped rods 114a, infrared sensor, and polypropylene fiber-covered second motorized roller 114b, a pH sensor 115a on a retractable L-shaped rod 115b evaluates water quality and enables LEDs 115c indicators of water quality.

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