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(57) Abstract :
7. ABSTRACT OF THE INVENTION Instead of monitoring every water-related facility in a sewage canal, we propose an automated mosquito detection/larvicide spray system installed at the mosquito habitat candidate points. Additionally, instead of passive traps (no detection) or a simple object detector, which counts the presence of flying insects, we try to obtain static signals of the mosquitoes with a optica! signal processing - based mosquito sensing. The proposed system is equipped with a clean, white mosquito observation pad that lures adult mosquitoes. An attached optical reflections records signals of the mosquitoes on the pad, attracted by the lures. If the mosquito larvae proliferate at the installed point (a constant or increasing number of mosquitoes is observed), the attached robot activates and drops a Bti larvicide package into the water to exterminate the growing mosquito larvae. Therefore, our proposed system is a novel approach to controlling mosquitoes, which not only uses deep learning-based signal classification, but also uses own hardware equipped with a luring pad and Bti dropper.

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