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(57) Abstract :
The invention discloses an IoT-enabled device for smart agricultural pest monitoring comprising a sensor unit (101), microcontroller (102), communication module (103), power supply unit (104), cloud server (105), and user interface application (106). The device enables real-time detection, wireless communication, predictive analytics, and farmer alerts. Experimental validation demonstrates reliable operation, energy sustainability, and accuracy exceeding 90% in detecting infestations. The system improves crop yield, reduces pesticide use, and supports sustainable precision farming practices.

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