WHAT IS CLAIMED IS:

1. A pest control device comprising:

a sensor including a sensor cell, wherein a surface of a sensor cell is coated with an agent that reacts with a targeted biochemical analyte secreted by pests, wherein the agent is converted by reaction with the targeted biochemical analyte to a product with a different molecular weight thereby increasing sensor mass, and

a controller coupled to the sensor, the controller being configured to:

receive sensor data from the sensor cell indicative of a rate of change in sensor mass detected on the surface of the sensor cell, the rate of change correlating to an increase in the concentration of the targeted biochemical analyte,

determine whether the rate of change in the sensor mass based on the received sensor data exceeds a predefined threshold rate, and

transmit a pest detection alert notification to a server in response to a determination that the rate of change exceeds the predetermined threshold rate.

2. The pest control device of claim 1 further comprising a handle providing a grip for a human operator to move the pest control device to identify a localized area of the targeted biochemical analyte.

3. The pest control device of claim 1 or 2, wherein the controller is further configured to:

activate a timer when the rate of change exceeds a predefined threshold rate,

deactivate the timer when the rate of change returns to less than the predefined threshold rate,

determine an amount of time that the rate of change in the sensor mass exceeded the predefined threshold rate, and

determine whether the amount of time is greater than a predefined time period,

wherein to transmit the pest detection alert notification comprises to transmit a pest detection alert notification in response to a determination that the amount of time is greater than the predefined time period.

4. The pest control device of any one of the preceding claims, wherein the predefined threshold rate is a base mass change rate in the presence of bed bugs.

5. The pest control device of any one of the preceding claims, wherein the targeted biochemical analyte comprises an analyte found in secretion of bed bugs.

6. The pest control device of any one of the preceding claims, wherein the targeted biochemical analyte comprises trans-2-hexenal (T2H).

7. The pest control device of any one of claims 1 to 5, wherein the targeted biochemical analyte comprises trans-2-octenal (T2O).

8. The pest control device of any one of claims 1 to 5, wherein the targeted biochemical analyte comprises 4-oxo-(*E*)-2-hexenal.

9. The pest control device of any one of claims 1 to 5, wherein the targeted biochemical analyte comprises 4-oxo-(*E*)-2-octenal.

10. The pest control device of any one of the preceding claims, wherein the agent comprises dioctyl cyclic thiol intermediate (dioctyl-CTI).

11. The pest control device of any one of claims 1 to 9, wherein the agent comprises cyclic thiol intermediate (CTI).

12. The pest control device of any one of the preceding claims, wherein the sensor is a quartz crystal microbalance.

13. The pest control device of any one of claims 1 to 11, wherein the sensor cell is a quartz crystal resonator.

14. The pest control device of any one of the preceding claims, wherein the surface of the sensor cell is coated with a coating gel compound that includes a polymer gel and the agent.

15. The pest control device of claim 14, wherein the polymer gel has high viscosity and high thermal and chemical stability to form a stable coating on the surface of the sensor cell.

16. The pest control device of claim 14, wherein the polymer gel is polymethylphenylsiloxiane (PMPS).

17. The pest control device of claim 14, wherein the polymer gel is polydimethylsiloxane (PDMS).

18. The pest control device of claim 14, wherein the polymer gel is fluoroalcohol polycarbosilane.

19. The pest control device of claim 14, wherein the polymer gel is fluoroalcohol polysiloxane.

20. The pest control device of claim 14, wherein the polymer gel is bisphenol-containing polymer (BSP3).

21. The pest control device of claim 14, wherein the polymer gel is poly-2-dimethylamin-ethyl-methacrylate (PDMAEMC).

22. The pest control device of claim 14, wherein the polymer gel is polymers with silicone (Si) and iron (F).

23. The pest control device of claim 14, wherein the polymer gel is at least one of polymethylphenylsiloxiane (PMPS), polydimethylsiloxane (PDMS), fluoroalcohol polycarbosilane, fluoroalcohol polysiloxane, bisphenol-containing polymer (BSP3), poly-2-dimethylamin-ethyl-methacrylate (PDMAEMC), and polymers with silicone (Si) and iron (F).