CLAIMS

1. A pest monitoring device, the device comprising:
a housing;
an optical sensor configured to generate optical data related to an interior surface within the housing; and
a processor in communication with the optical sensor, wherein the processor is configured to:
receive optical data from the optical sensor;
select optical data relating to at least one segment of the interior surface, the optical data relating to the at least one segment being arranged as a plurality of pixels;
evaluate if the optical data corresponding to the at least one segment meets a pre-determined condition associated with the interior surface by:
counting the number of pixels of the plurality of pixels which indicate a light intensity below a pre-determined intensity value; and
determining if the number of pixels having a light intensity below the pre-determined intensity limit is greater than or equal to a pre-determined pixel threshold value;
determine, based on whether the optical data corresponding to the at least one segment meets the pre-determined condition associated with the interior surface, if there is an indication of a pest on the interior surface.

2. A device as claimed in claim 1, wherein the processor is configured to discretize the received optical data into a plurality of discretized blocks, each discretized block including optical data corresponding to a separate segment of the interior surface.

3. A device as claimed in any preceding claim, wherein the processor is configured to evaluate if the optical data corresponding to a plurality of segments of the interior surface meets a pre-determined condition.

4. A device as claimed in claim 3, wherein the processor is configured to determine if there is an indication of a pest on the interior surface within the housing, by:
determining if there is a plurality of adjacent segments each having corresponding optical data that meets the pre-determined condition; and
determining if the plurality of adjacent segments contains a number of segments that is greater than or equal to a pre-determined segment threshold value.

5. A device as claimed in any preceding claim,
wherein the device further comprises communication means configured to transmit information to an external receiver,
wherein the processor is configured to instruct the communication means to transmit information to the external receiver if an indication of a pest is determined.

6. A device as claimed in claim 5, wherein the transmitted information comprises the optical data corresponding to the segments of the interior surface from which an indication of a pest has been determined.

7. A device as claimed in any preceding claim, wherein the processor is further configured to assign an indication that the optical data corresponding to the at least one segment has met the pre-determined condition associated with the interior surface.

8. A device as claimed in claim 7 when dependent on claim 4,
wherein the processor is further configured to assign the indication that the optical data corresponding to the at least one segment has met the pre-determined condition associated with the interior surface only if:
the at least one segment was one of the plurality of adjacent segments, the optical data for which met the pre-determined condition associated with the interior surface and from which it was determined that there was an indication of a pest on the interior surface.

9. A device as claimed in claim 7 or claim 8, wherein the processor is further configured to:
receive further optical data from the optical sensor;
select at least one segment of the interior surface for which further optical data, arranged as a plurality of pixels, has been generated by the optical sensor;
determine if there is an indication that optical data corresponding to the at least one segment has previously met the pre-determined condition associated with the interior surface;
evaluate if the further optical data corresponding to the at least one segment of the interior surface meets the pre-determined condition associated with the interior surface only if there is no indication that optical data corresponding to the at least one segment has previously met the pre-determined condition; and
determine from the evaluation if there is an indication of a pest on the interior surface.

10. A device as claimed in any preceding claim, wherein the optical data includes light intensity.

11. A device as claimed in any preceding claim, wherein the device further comprises a controller configured to switch the device between an active mode and a standby mode.

12. A device as claimed in any preceding claim, wherein the optical sensor and the processor are releasably coupled to the housing.

13. A device as claimed in claim 12, wherein the pest monitoring device further includes a casing, wherein the optical sensor and the processor are at least partially housed within the casing, wherein the casing is releasably coupled to the housing.

14. A device as claimed in any preceding claim, wherein the device further comprises a battery as a power source.

15. A device as claimed in any preceding claim, wherein the interior surface includes a tack or adhesive substance thereon for immobilising pests.

16. A pest trap comprising the device as claimed in any preceding claim.

17. A kit of parts for providing a pest monitoring device, the kit of parts comprising:
a first housing having an interior surface for accommodating pests thereon;
a second housing having an interior surface for accommodating pests thereon;
a casing, wherein the casing is configured such that in use the casing may be releasably coupled to either the first housing or the second housing;
wherein the casing houses:
an optical sensor configured to generate optical data related to the interior surface within either the first or second housing; and
a processor in communication with the optical sensor, wherein the processor is configured to:
receive optical data from the optical sensor;
select optical data relating to at least one segment of the interior surface of the first or second housing, the optical data relating to the at least one segment being arranged as a plurality of pixels;

evaluate if the optical data corresponding to the at least one segment meets a pre-determined condition associated with the interior surface of the first or second housing by:

counting the number of pixels of the plurality of pixels which indicate a light intensity below a pre-determined intensity value; and

determining if the number of pixels having a light intensity below the pre-determined intensity limit is greater than or equal to a pre-determined pixel threshold value;

determine, based on whether the optical data corresponding to the at least one segment meets the pre-determined condition associated with the interior surface of the first or second housing, if there is an indication of a pest on the interior surface of the first or second housing.

18. A method of monitoring a pest trap, the method comprising:

generating optical data related to an interior surface within a housing;

selecting optical data relating to at least one segment of the interior surface, the optical data relating to the at least one segment being arranged as a plurality of pixels;

evaluating if the optical data corresponding to the at least one segment meets a pre-determined condition associated with the interior surface of the housing by:

counting the number of pixels of the plurality of pixels which indicate a light intensity below a pre-determined intensity value; and

determining if the number of pixels having a light intensity below the pre-determined intensity limit is greater than or equal to a pre-determined pixel threshold value; and

determining, based on whether the optical data corresponding to the at least one segment meets the pre-determined condition associated with the interior surface, if there is an indication of a pest on the interior surface within the housing.

19. A method as claimed in claim 18, further comprising the step of discretizing the optical data into a plurality of discretized blocks, each discretized block including optical data corresponding to a separate segment of the interior surface.

20. A method as claimed in claim 18 or 19, further comprising the step of evaluating if the optical data corresponding to a plurality of segments of the interior surface meets a pre-determined condition.

21. A method as claimed in claim 20, wherein the step of determining from the evaluation if there is an indication of a pest on the interior surface within the housing comprises:

determining if there is a plurality of adjacent segments each having corresponding optical data that meets the pre-determined condition; and

determining if the plurality of adjacent segments contains a number of segments that is greater than or equal to a pre-determined segment threshold value.

22. A method as claimed in any of claims 18 to 21, further comprising the step of transmitting information to an external receiver if an indication of a pest is determined.

23. A method as claimed in claim 22, wherein the transmitted information comprises the optical data corresponding to the segments from which an indication of a pest has been determined.

24. A method as claimed in any of claims 18 to 23, further comprising the step of assigning an indication that the optical data corresponding to the at least one segment has met the pre-determined condition.

25. A method as claimed in claim 24 when dependent on claim 21, wherein the indication that the optical data corresponding to the at least one segment has met the pre-determined condition is only assigned if the at least one segment was one of the plurality of adjacent segments, the optical data for which each met the pre-determined condition and from which it was determined that there was an indication of a pest on the interior surface.

26. A method as claimed in claim 24 or claim 25, further comprising the steps of:

generating further optical data related to the interior surface;

selecting at least one segment of the interior surface for which further optical data has been generated;

determining if there is an indication that optical data corresponding to the at least one segment has previously met the pre-determined condition;

evaluating if the further optical data corresponding to the at least one segment of the interior surface meets a pre-determined condition only if there is no indication that optical data corresponding to the at least one segment has previously met the pre-determined condition; and

determining from the evaluation if there is an indication of a pest on the interior surface within the housing.