

What is claimed is:

1. A system for detecting wetness on a surface of a facility comprised of:
 - a) at least one sensor for detecting surface temperatures;
 - b) a database for storing surface temperature data;
 - c) an interface; and
 - d) a processor;wherein the processor identifies baseline temperatures of surfaces;
wherein the processor identifies wetness as aberrations from baseline temperatures of surfaces; and
wherein the processor schedules cleaning and/or maintenance when wetness on the surface reaches or exceeds a threshold level.
2. The system of claim 1, wherein the at least one sensor is a thermal sensor or thermopile array that records thermal images of the surface of the facility.
3. The system of claim 1, wherein the at least one sensor has sampling rates that are time based and/or event based.
4. The system of claim 1, wherein the at least one sensor is comprised of a sensing element, a data interchange unit, a memory unit and a fluid detection unit.
5. The system of claim 1, wherein the processor is comprised of a data capture module, a fluid detection module and a belief update module.
6. The system of claim 1, wherein the at least one sensor has sampling rates that are adjusted based on patterns of facility use.
7. The system of claim 1, wherein the surface is floor, shelf, table top, sink, panel,

appliance top or counter top.

8. The system of claim 1, wherein thermal characteristics of wetness are detected by the at least one sensor; and

wherein the processor identifies fluid comprising the wetness and/or a source of wetness based on the thermal characteristics.

9. The system of claim 1, wherein the facility is a washroom, kitchen, lounge, dining area, conference center, auditorium, gym, recreational area, market, shop, elevator/lift, interior of a vehicle or other gathering area.

10. A computer implemented method for detecting wetness on a surface of a facility comprising of steps of:

- a) collecting data on surface temperatures using at least one sensor;
- b) identifying baseline surface temperatures;
- c) identifying wetness as aberrations of baseline surface temperatures;
- d) comparing data on wetness from at least two time points to improve belief; and
- e) alerting one or more workers and/or stakeholders when wetness on the surface reaches or exceeds a threshold level.

11. The method of claim 10, wherein the at least one sensor is a thermal sensor or thermopile array that records thermal images of the floor or surface of the facility.

12. The method of claim 10, wherein the step of collecting data on surface temperatures from at least one sensor has sampling rates that are time based and/or event based.

13. The method of claim 10, wherein the step of identifying wetness as aberrations of baseline surface temperatures accounts for variables including heat from the environment such as sunlight and wind, human body heat, heat from electrical sources and/or heat from light sources.

14. A computer implemented method for identifying fluid in wetness on a floor or surface comprising of steps of:

- a) collecting data on thermal characteristics of wetness using at least one sensor;
- b) compiling a database of thermal signatures of fluids based on thermal properties exhibited on one or more surfaces;
- c) identifying fluids by comparing thermal signatures of known fluids in the database;
- d) comparing detection results from at least two time points to improve belief; and
- e) alerting one or more workers and/or stakeholders with information on the fluid.

15. The method of claim 14, wherein the step of identifying fluids by comparing thermal signatures of known fluids in the database accounts for variables including heat from the environment such as sunlight and wind, human body heat, heat from electrical sources and/or heat from light sources.

16. The method of claim 14, wherein an algorithm is used in the step of identifying fluids by comparing thermal signatures of known fluids in the database, wherein the algorithm uses frequency domain techniques, time domain techniques or a hybrid approach.

17. The method of claim 14, wherein the step of identifying fluids by comparing thermal signatures of known fluids in the database further comprises a step of learning and maintaining an estimate of trends.
18. The method of claim 14, further comprising a step of maintaining a historical record of data.
19. The method of claim 14, further comprising a step of activating one or more autonomous or self-cleaning systems based on an identified fluid.
20. The method of claim 14, wherein the fluid is water, sweat, oil, paint, vomit, urine, blood and/or a beverage intended for human consumption.
21. The method of claim 10 or 14, including a step of segregating a field of view of the at least one sensor into contiguous areas of thermal properties using a continuity criterion of baseline temperatures.