silicon (Si) sensor, an indium gallium arsenide (InGaAs) sensor, or an extended-InGaAs sensor. At least one sensor may include multiple encoded masks with a gray code matrix pattern. The sensor module may be included in a sensor unit and the processor may be included in a control unit situated at a separate location from the sensor unit, where the control unit is wirelessly coupled with the sensor unit. The flash event may include a light flash resulting from: a rocket launch, a missile launch, a torpedo launch, an artillery projectile or ammunition firing, a mortar firing, a cannon firing, and/or a gun firing. At least a portion of the system may be installed on: a vehicle, an armored military vehicle, an aircraft, a marine vessel, a guard post, a mobile platform, and/or a stationary platform.

In an example, there is provided a dual threat warning method for detecting a flash event of a threat source and for detecting a laser transmission of a threat source. The method includes the procedures of: receiving incoming radiation at at least one sensor module, filtering the incoming radiation according to at least one filtering criteria, and detecting the filtered incoming radiation at at least one discrete impact recognition sensor of the sensor module. The method further includes the procedure of detecting at least the spectral range and the frequency of the incoming radiation with

CLAIMS

1. A dual threat warning system, operative for detecting a flash event of a threat source and further operative for detecting a laser transmission of a threat source, the system comprising:

at least one sensor module, operative to receive incoming radiation, said sensor module comprising:

at least one discrete impact recognition sensor, operative to detect the presence of said incoming radiation;

at least one discrete spectral sensor, operative to detect the spectral range of said incoming radiation;

at least one discrete frequency sensor, operative to detect the frequency of said incoming radiation; and

at least one filter, operative for filtering said incoming radiation according to at least one filtering criteria, and

a processor, coupled with said sensor module, said processor operative for determining if said incoming radiation is resulting from a light flash associated with the launching of a threat and if said incoming radiation is resulting from laser radiation transmitted by a threat source, based on spectral characteristics and temporal characteristics of said incoming radiation.

2. The system of claim 1, wherein at least one of said sensor modules further comprises a plurality of azimuth angular sensors, operative for detecting the azimuth angle of arrival of said incoming radiation.

3. The system of claim 1, wherein at least one of said sensor modules further comprises a plurality of elevation angular sensors, operative for detecting the elevation angle of arrival of said incoming radiation.

4. The system of claim 1, wherein at least one of said sensor modules further comprises a plurality of power sensors, operative for detecting the intensity of said incoming radiation.

5. The system of claim 1, wherein said filter comprises a wavelength filter, coupled with at least one of said impact recognition sensors, said wavelength filter operative for filtering out selected wavelengths of said incoming radiation.

6. The system of claim 5, wherein said wavelength filter is operative to pass wavelengths between a spectral range of 0.3 – 2.2 μm.

7. The system of claim 1, wherein said sensor module comprises sensors arranged along a circular perimeter across an azimuthal plane and operative to obtain 360° azimuth detection coverage.

8. The system of claim 1, wherein said impact recognition sensor operates in an activated state during standby system mode and triggers the activation of at least a subset of other sensors of said sensor module upon detection of said incoming radiation.

9. The system of claim 1, wherein said processor is further operative to identify and characterize an incoming threat using the characteristics of said incoming radiation.

10. The system of claim 9, wherein said processor generates a temporal pulse mapping of said incoming radiation, and compares said mapping with a database comprising information associating different threats with radiation characteristics.

11. The system of claim 1, wherein at least one of the sensors of said sensor module is associated with a particular threat type or with particular radiation characteristics.

12. The system of claim 11, wherein said threat type or radiation characteristics is selected from the list consisting of:

laser rangefinder (LRF) pulses;

laser target designator (DES) pulses;

beam-riding laser guidance pulses;

projected infrared (IR) radiation;

continuous wave (CW) pulses; and

pulses with a selected bandwidth.

13. The system of claim 1, wherein at least one sensor of said sensor module is selected from the list consisting of:

a silicon (Si) sensor;

an indium gallium arsenide (InGaAs) sensor; and

an extended-InGaAs sensor.

14. The system of claim 1, wherein at least one sensor of said sensor module comprises multiple encoded masks with a gray code matrix pattern.

15. The system of claim 1, wherein said sensor module is comprised in a sensor unit, and said processor is comprised in a control unit situated at a separate location from said sensor unit, said control unit being wirelessly coupled with said sensor unit.

16. The system of claim 1, wherein said flash event comprises a light flash resulting from at least one event selected from the list consisting of:

a rocket launch;

a missile launch;

a torpedo launch;

an artillery projectile or ammunition firing;

a mortar firing;

a cannon firing; and

a gun firing.

17. The system of claim 1, wherein at least a portion of said system is installed on a structure selected from the list consisting of:

a vehicle;

an armored military vehicle;

an aircraft;

a marine vessel;

a guard post;

a mobile platform; and

a stationary platform.

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