CLAIMS

1. A radiation detector comprising:

(a) a conversion device configured to develop a voltage when subject to incident radiation;

(b) a first switch configured to move between a first state and a second state when triggered by a threshold voltage;

wherein the conversion device is connected to the switch such that, when the threshold voltage is developed across the conversion device, the switch is triggered to move from the first state to the second state; and

(c) an interrogation circuit operable to determine whether the switch is in the first state or the second state, thereby to determine whether the detector has been subjected to a threshold level of radiation associated with the threshold voltage,

wherein the switch is a MEMS switch, or the switch comprises a latching circuit, or the switch comprises a relay circuit.

2. The radiation detector as claimed in claim 1, wherein the switch is the MEMS switch.

3. The radiation detector as claimed in claim 1, wherein the switch comprises the latching circuit.

4. The radiation detector as claimed in claim 1, wherein the switch comprises the relay circuit.

5. The radiation detector as claimed in any one of claims 1 to 4 wherein the conversion device and the switch are operable without any further source of electrical power, and wherein the interrogation circuit is operable, when connected to a source of electrical power, to determine whether the detector has been subjected to the threshold level of radiation whilst the interrogation circuit has not been connected to electrical power.

6. The radiation detector as claimed in any one of claims 1 to 5, comprising a second switch configured to move between a first state and a second state when triggered by a threshold voltage, the second switch being connected to the conversion device via the first switch when the first switch is in the second state; and the detector further comprising a second interrogation circuit operable to determine whether the second switch is in the first state or the second state.

7. An apparatus comprising a plurality of radiation detectors as claimed in any one of the preceding claims.

8. The apparatus as claimed in claim 7, wherein each of the plurality of radiation detectors is configured to have a different threshold voltage.

9. The apparatus as claimed in claim 7 or 8, further comprising a processor in communication with the interrogation circuits of the or each radiation detector, and configured to determine further characteristics of the radiation exposure in dependence on the switch states determined by the interrogation circuits.

10. The apparatus as claimed in claim 9, wherein the further characteristics comprise one or more of the duration of the exposure to radiation, and the type of radiation.

11. A system comprising the radiation detector of any one of claims 1 to 6, or the apparatus as claimed in any one of claims 7 to 10 and a radiation sensitive apparatus, the system being configured to alert an operator if the interrogation circuit determines that the radiation detector has been subject to the threshold level of radiation.

12. A system comprising the radiation detector of any one of claims 1 to 6, or the apparatus as claimed in any one of claims 7 to 10, and a radiation sensitive apparatus, the system being configured such that, if the interrogation circuit determines that the radiation detector has been

subject to the threshold level of radiation, the radiation sensitive apparatus is disabled.

13. The system of claim 11 or claim 12, wherein the radiation detector is located adjacent to the radiation sensitive apparatus.