CLAIMS:

1. An anti-fouling lighting panel for mounting over a surface to protect the surface ~~(16)~~ against biofouling while the surface is submerged in water, comprising:

a light source arrangement ~~(26);~~comprising a plurality of portions;

a non-contact water sensor ~~(60)~~ for sensing water ~~thereby~~ to detect whether or not ~~the light source arrangement, or a~~each portion of the light source arrangement, is submerged in water; and

a controller for controlling ~~the light source arrangement, or the~~ each portion of the light source arrangement, in dependence on the water sensor output~~.~~; wherein the water sensor comprises:

a capacitive sensor, comprising a sense pad, a ground electrode, and a capacitance readout circuit; or

an inductive sensor, comprising an oscillator circuit, a sensing coil, a ground shield having an opening which is exposed to water when the water sensor is submerged, and a frequency detector circuit.

2. ~~A~~The lighting panel ~~as claimed in~~of claim 1, wherein the controller is adapted to switch off the ~~light source arrangement, or the~~ portion of the light source arrangement, when not submerged in water.

3. ~~A~~The lighting panel ~~as claimed in~~of claim 1 ~~or 2~~, wherein the light source arrangement comprises a plurality of rows of light sources, each row comprising one of said portions of the light source arrangement, wherein a water sensor is provided for each row.

4. ~~A~~The lighting panel ~~as claimed in any one~~ of ~~claims~~claim 1 ~~to 3, wherein the water sensor comprises a capacitive sensor, comprising a sense pad, a ground electrode, and a capacitance readout circuit.~~

~~5. A lighting panel as claimed in claimed in any one of claims 1 to 3, wherein the water sensor comprises an inductive sensor, comprising an oscillator circuit, a sensor coil, a ground shield having an opening which is exposed to water when the water sensor is submerged, and a frequency detector circuit.~~

~~6. A lighting panel as claimed in claimed in any one of claims 1 to 3, wherein the water sensor comprises an optical sensor.~~

~~7. A lighting panel as claimed in any one of claims 1 to 6~~, further comprising:

an inductive power receiver ~~(24)~~ comprising one or more windings for alignment with one or more primary windings of an inductive power transmitter.

~~8~~5. An anti-fouling lighting system comprising:

an inductive power transmitter ~~(10)~~ for mounting over the surface ~~(16)~~ and comprising one or more primary windings; and

a lighting panel as claimed in ~~any one of claims 1 to 6~~claim 1 for mounting over the inductive power transmitter, and comprising an inductive power receiver ~~(24)~~ comprising one or more windings for alignment with the one or more primary windings.

~~9.~~ 6. ~~An~~ The anti-fouling lighting system ~~as claimed in~~of claim ~~8~~5, wherein the inductive power transmitter ~~(10)~~ comprises an elongate power strip, and the lighting panel comprises an edge region ~~(22)~~ which overlaps the elongate power strip ~~(10),~~ the inductive power receiver ~~(24)~~ being formed in the edge region ~~(22).~~.

~~10.~~ 7. ~~An~~ The anti-fouling lighting system ~~as claimed in~~of claim ~~8 or 9~~5, wherein the inductive power transmitter comprises a ferrite sheet ~~(14)~~ below the windings.

~~11.~~ 8.~~An~~ The anti-fouling lighting system ~~as claimed in any one of claims 8 to 10~~of claim 5, wherein the lighting panel comprises a printed circuit board at least for the one or more secondary windings and a silicone coating.

~~12.~~ 9.~~ An~~The anti-fouling lighting system ~~as claimed in any one~~ of ~~claims 8 to 11~~claim 5, comprising a plurality of inductive power transmitters ~~(10)~~ and a plurality of lighting panels ~~(20).~~.

~~13~~10. A method of protecting a surface ~~(16)~~ against biofouling when the surface is submerged in water by operating a light source arrangement to generate anti-fouling light, the method comprising:

sensing water by non-contact sensing thereby to detect whether or not ~~the light source arrangement, or a portion of~~ portions of the light source arrangement~~, is~~ are submerged in water; and

controlling each portion of the light source arrangement, or the portion of the light source arrangement, in dependence on the water sensor output~~.~~.

wherein water sensor comprises using:

a capacitive sensor, comprising a sense pad, a ground electrode, and a capacitance readout circuit; or

an inductive sensor, comprising an oscillator circuit, a sensing coil, a ground shield having an opening which is exposed to water when the water sensor is submerged, and a frequency detector unit.

~~14.~~ 11. ~~A~~The method ~~as claimed in~~ of claim ~~13~~10, comprising switching off the ~~light source arrangement, or the~~ portion of the light source arrangement, when not submerged in water.

~~15.~~ 12. ~~A~~The method ~~as claimed in~~of claim ~~13 or 14~~10, wherein the light source arrangement comprises a plurality of rows of light sources, each row comprising one of said portions of the light source arrangement, wherein the method comprises sensing water in the vicinity of each row.