CLAIMS:

1. An anti-biofouling system (200) comprising (i) a light source (220) configured to generate light source radiation (221), wherein the light source radiation (221) at least comprises UV radiation (271), wherein the system (200) further comprises (ii) a luminescent material (400) configured to convert part of the light source radiation (221) into luminescent material radiation (401), wherein the luminescent material radiation (401) comprises one or more (a) of visible light and (b) infrared radiation, wherein the system (200) is configured to generate anti-biofouling system light (201) comprising the light source radiation (221) and the luminescent material radiation (401).

2. The anti-biofouling system according to claim 1, further comprising (iii) a semi-transparent mirror (250) configured downstream of the light source (220) and upstream of the luminescent material (400), wherein the semi-transparent mirror (250) is configured to transmit part of the UV radiation (271) and to reflect at least part of the luminescent material radiation (401).

3. The anti-biofouling system (200) according to claim 2, wherein the light source (220), the semi-transparent mirror (250), and the luminescent material (400) are configured to provide at least part of the UV radiation (271) in a direction perpendicular to the semi-transparent mirror (250) and at least part of the UV radiation (271) in a direction parallel to the semi-transparent mirror (250).

4. The anti-biofouling system (200) according to claim 2 or 3, comprising a package (260) comprising a solid state light source (224) including a die (223), wherein the package (260) further comprises the semi-transparent mirror (250).

5. The anti-biofouling system (200) according to claim 4, wherein the package (260) further comprises the luminescent material (400).

6. The anti-biofouling system (200) according to claim 5, wherein the semi-transparent mirror (250) is configured in physical contact with the die (223), and wherein the luminescent material (400) is configured as luminescent material layer (402) on the semi-transparent mirror (250).

7. The anti-biofouling system (200) according to any one of the preceding claims, comprising a plurality of the light sources (220).

8. The anti-biofouling system (200) according to any one of the preceding claims, wherein the system (200) is configured to radiate in an operation mode part of the light source radiation (221) to the exterior of a sheet-like light output device (2000) via a light emissive surface (2230) with an average power over time of at least $0.5x10^{-9}$ Watt/mm^2, averaged over the light emissive surface (2230), and wherein the light source radiation (221) comprises UV-C radiation.

9. The system (200) according to any one of the preceding claims, comprising a waveguide element arrangement (1200), wherein the waveguide element arrangement (1200) comprises a waveguide element (1210) comprising a radiation exit window (230), wherein the waveguide element (1210) is (a) configured to receive the light source radiation (221), and (b) configured to radiate in an operation mode part of the light source radiation (221) to the exterior of the waveguide element (1210) via the radiation exit window (230).

10. The system (200) according to claim 9, wherein the waveguide element arrangement (1200) further comprises a converter arrangement (130) comprising the luminescent material (400).

11. The system (200) according to claim 10, wherein the semi-transparent mirror (250) is configured downstream of the waveguide element (1210) and upstream of the converter arrangement (130).

12. The system (200) according to any one of the preceding claims 9-11, wherein the light source (220) is at least partly embedded in the waveguide element (1210).

13. The system (200) according to claim 12, comprising a plurality of the packages (260) according to claim 4 or 5, each package (260) configured at least partly embedded in the waveguide element (1210).

14. The anti-biofouling system (200) according to any one of the preceding claims 9-12, wherein the system (200) comprises a light emissive surface (2230), wherein the system (200) is configured to radiate in an operation mode part of the light source radiation (221) to the exterior of the waveguide element (1210) with a first average value of the power, averaged over the light emissive surface (2230), wherein the light source (220) and the converter arrangement (130) are configured such that a local maximum value of the power of the light source radiation (221) escaping from the light emissive surface (2230) is at maximum 15 times larger than the first average value of the power of the light source radiation (221).

15. The anti-biofouling system (200) according to any one of the claims 12-14, wherein the converter arrangement (130) comprises a pattern (131) of luminescent material (400) on the radiation exit window (230), wherein the light source (220) is at least partly embedded in the waveguide element (1210), and wherein the pattern (131) of luminescent material (400) is configured to reduce intensity differences of light source radiation (221) over the light emissive surface (2230).

16. The anti-biofouling system (200) according to any one of the preceding claims 12-15, wherein the waveguide element (1210) is watertight.

17. An object (10) comprising the anti-biofouling system (200) according to any one of claims 1-16, wherein the anti-biofouling system (200) is configured to irradiate with light source radiation (221) during an irradiation stage one or more of (i) a part (111) of an external surface (11) of said object (10) and (ii) water adjacent to said part (111) of said external surface (11).

18. The object (10) according to claim 17, wherein the object (10) is configured to be at least partly submerged in water during use.

19. The object (10) according to any claim 17 or 18, wherein the object (10) is selected from the group consisting of a vessel (1) and an infrastructural object (15).

20. A method of providing an anti-biofouling system (200) as defined in any one of claims 1-16 to an object (10), the method comprising providing the anti-biofouling system (200) to the object (10).