

CLAIMS:

1. A 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 system light (201) comprising the light source radiation (221) and the luminescent material radiation (401).
2. The 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 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 system (200) according to any one of the preceding claims 2-3, comprising a solid state light source (224), wherein the solid state light source (224) comprises a die (223), wherein the system (200) comprises a package (260) comprising the solid state light source (224).
5. The system (200) according to claim 4, wherein the package (260) further comprises the semi-transparent mirror (250).

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

7. The system (200) according to claim 6, 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).

8. The system (200) according to any one of the preceding claims, comprising a plurality of the light sources (220), wherein each light source (220) is 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) the luminescent material (400) configured to convert part of the light source radiation (221) of each of the light sources (220) into the luminescent material radiation (401), wherein system light (201) comprises the light source radiation (221) of each of the light sources (220) and the luminescent material radiation (401).

9. The system (200) according to claim 8, further comprising a plurality of the semi-transparent mirrors (250) according to any one of the preceding claims 2-7, configured downstream of each of the light sources (220) and upstream of the luminescent material (400).

10. The system (200) according to claim 9, wherein each of the light source (220) and each of the semi-transparent mirror (250) are configured to provide at least part of the UV radiation (271) of the respective light source (220) in a direction perpendicular to the respective semi-transparent mirror (250) and at least part of the UV radiation (271) of the respective light source (220) in a direction parallel to the respective semi-transparent mirror (250).

11. The system (200) according to any one of the preceding claims 8-10, wherein all light sources (220) comprise solid state light sources.

12. The 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 0.5×10^{-9} Watt/mm², averaged over the light emissive surface (2230), and wherein the light source radiation (221) comprises UV-C radiation.

5

13. 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),
10 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).

14. The system (200) according to claim 13, wherein the waveguide element arrangement (1200) further comprises a converter arrangement (130) comprising the
15 luminescent material (400).

15. The system (200) according to claim 14, wherein the semi-transparent mirror (250) is configured downstream of the waveguide element (1210) and upstream of the converter arrangement (130).

20

16. The system (200) according to any one of the preceding claims 13-15, wherein the light source (220) is at least partly embedded in the waveguide element (1210).

17. The system (200) according to claim 13, comprising a plurality of the
25 packages (260) according to any one of the preceding claims 4-7, each package (260) configured at least partly embedded in the waveguide element (1210).

18. The system (200) according to any one of the preceding claims 13-16, wherein the system (200) comprises a light emissive surface (2230), wherein the system (200) is
30 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).

19. The system (200) according to any one of the preceding claims 13-16, wherein
5 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).

10

20. The system (200) according to any one of the preceding claims 13-19, wherein the waveguide element (1210) is watertight

21. The system (200) according to any one of the preceding claims 13-20, wherein
15 the system (200) is an anti-biofouling system.

22. An object (10) comprising the system (200) according to any one of claims 1-21, wherein the 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
20 object (10) and (ii) water adjacent to said part (111) of said external surface (11).

23. The object (10) according to claim 22, wherein the object (10) is configured to be at least partly submerged in water during use.

24. The object (10) according to any one of the preceding claims 22-23, wherein
25 the object (10) is selected from the group consisting of a vessel (1) and an infrastructural object (15).

25. A method of providing a system (200) as defined in any one of claims 1-21 to
30 an object (10), the method comprising providing the system (200) to the object (10).

26. A computer program product, when running on a computer which is functionally coupled to or comprised by the system (200) according to any one of the preceding claims 1-21, is configured to control the light source (220).