

Claims

- 5 1. An array comprising a plurality of light emitting pixels, wherein at least two of the plurality of light emitting pixels are separated by organic semiconductors dispersed in a medium, wherein the organic semiconductors are configured to absorb light of a predefined wavelength, thereby to reduce optical crosstalk across the medium between the at least two of the plurality of light emitting pixels.
- 10 2. The array according to claim 1, wherein the at least two of the plurality of light emitting pixels are separated by a distance of less than or equal to 2 μm and preferably less than or equal to 1 μm .
- 15 3. The array according to any preceding claim, wherein the at least two of the plurality of light emitting pixels each comprise a micro light emitting diode device.
- 20 4. The array according to claim 3, wherein at least one of the plurality of light emitting pixels comprise a light conversion layer arranged to receive input light with a primary peak wavelength and convert the input light to output light with a different primary peak wavelength.
- 25 5. The array according to claim 4, wherein the light conversion layer comprises organic semiconductors configured to convert the input light to output light.
- 30 6. The array according to any preceding claim, wherein the organic semiconductors are conjugated organic semiconductors comprising a plurality of conjugated structures, preferably wherein the organic semiconductors are organic semiconductors, more preferably wherein the plurality of conjugated structures comprise a core and an arm.
7. The array according to claim 6 wherein at least two of the plurality of conjugated structures have a different functional property.

8. The array according to any preceding claim, comprising further organic semiconductors configured to absorb light of a further predefined wavelength different to the predefined wavelength.
- 5 9. The array according to any preceding claim, wherein the organic semiconductors are configured to absorb light of a predefined range of wavelengths comprising the predefined wavelength.
- 10 10. The array according to any preceding claim, wherein the medium is at least one of a resin and a polymer medium.
11. The array according to any preceding claim, wherein the array is a high resolution micro LED array with a pixel pitch less than 10 μm , preferably less than 4 μm .
- 15 12. The array according to any preceding claim, wherein the plurality of light emitting pixels each have a light emitting surface that is less than or equal to 100 μm^2 , preferably less than 16 μm^2 .
- 20 13. A method of forming an array comprising a plurality of light emitting pixels, wherein at least two of the plurality of light emitting pixels are separated by organic semiconductors dispersed in a medium, wherein the organic semiconductors are configured to absorb light of a predefined wavelength, thereby to reduce optical crosstalk across the medium between the at least two of the plurality of light emitting pixels.
- 25 14. The method according to claim 13, wherein the at least two of the plurality of light emitting pixels are separated by a distance of less than or equal to 2 μm and preferably less than or equal to 1 μm .
- 30 15. The method according to of claims 13 and 14, wherein the at least two of the plurality of light emitting pixels each comprise a micro light emitting diode device.

16. The method according to any of claim 13 to 15, wherein at least one of the plurality of light emitting pixels comprise a light conversion layer arranged to receive input light with a primary peak wavelength and convert the input light to output light with a different primary peak wavelength.
- 5 17. The method according to claim 16, wherein the light conversion layer comprises organic semiconductors configured to convert the input light to output light.
- 10 18. The method according to any of claims 13 to 17, wherein the organic semiconductors are conjugated organic semiconductors comprising a plurality of conjugated structures, preferably wherein the organic semiconductors are organic semiconductors, more preferably wherein the plurality of conjugated structures comprise a core and an arm.
- 15 19. The method according to claim 18, wherein at least two of the plurality of conjugated structures have a different functional property.
- 20 20. The method according to any of claims 13 to 19, wherein the array comprises further organic semiconductors dispersed in the medium, wherein the further organic semiconductors are configured to absorb light of a further predefined wavelength different to the predefined wavelength.
- 25 21. The method according to any of claims 13 to 20, wherein the organic semiconductors are configured to absorb light of a predefined range of wavelengths comprising the predefined wavelength.
- 30 22. The method according to any of claims 13 to 21, wherein the medium is at least one of a resin and a polymer medium.
23. The method according to any of claims 13 to 22, wherein the array is a high resolution micro LED array with a pixel pitch less than 10 μm , preferably less than 4 μm .

24. The method according to any of claims 13 to 23, wherein the plurality of light emitting pixels each have a light emitting surface that is less than or equal to $100\text{ }\mu\text{m}^2$, preferably less than $16\text{ }\mu\text{m}^2$.