CLAIMS

~~1. A non-coherent light emitting device comprising at least one organic light emitting or organic charge transporting layer and a structure providing a Bragg grating associated with the light emitting layer.~~

~~2. A non-coherent light emitting device according to claim 1 wherein the structure provides a 1-D Bragg grating associated with the light emitting layer~~

~~3.~~1. A non-coherent light emitting device ~~according to claim 1 or claim 2~~ comprising at least one organic light emitting or organic charge transporting layer and a structure providing a Bragg grating associated with the light emitting layer wherein the ~~aforesaid~~ at least one organic light emitting or organic charge transporting layer comprises alternating zones of isotropic and liquid crystalline material.

~~4.~~2. The device~~light source~~ of claim 1~~3~~ wherein the at least one organic light emitting or organic charge transporting layer comprises a liquid crystalline having uniformly aligned ~~the~~ molecular cores. ~~of the liquid crystalline material are uniformly aligned.~~

~~5.~~3. The ~~light source~~device of claim 2~~4~~ wherein the alignment of the molecular cores is in a~~the~~ plane of the light emitting device.

~~6.~~4. The ~~light source~~device of claim ~~4~~ 2 wherein the alignment of the molecular cores is ~~in the plane of the light emitting device and~~ parallel to ~~the~~ zone boundaries in the layer in which they are contained.

~~7.~~5. The device of claim ~~3~~ 1in which at least one of the isotropic or liquid crystalline zones is a crosslinked polymer.

~~8.~~6. The device of claim ~~3~~ 1 in which the at least one organic light emitting or organic charge transporting layer comprises a liquid crystalline material, when uniformly aligned, is dichroic in nature with a dichroic ratio in excess of 2:1.

~~9.~~7. The device of claim ~~3~~ 1 in which the alternating zones of isotropic and liquid crystalline material have a uniform period of alternation over a distance equivalent to at least 20 zones.

~~10.~~8. The device of claim ~~9~~ 7 in which the uniform period of alternation is within ± 20% of kλ/2, where λ is the wavelength of maximum emission intensity of the light emitting material of the light emitting device.

~~11.~~9. The device of claim ~~9~~ 7 in which light emission in the plane of the device is suppressed by the combination of dichroism in the emitting material and the suppression of light propagation modes through the medium of alternating isotropic and liquid crystalline zones.

~~12.~~10. A non-coherent light emitting device comprising at least one organic light emitting or organic charge transporting layer wherein the aforesaid light emitting or charge transporting layer comprises a regular two-dimensional matrix array of areas of liquid crystalline material surrounded by an area of isotropic material.

~~13.~~11. The device of claim ~~12~~ 10 in which the areas of liquid crystalline material are square or rectangular in shape.

~~14.~~12. The device of claim ~~12~~ 10 in which the areas of liquid crystalline material are in the shape of rhombuses or parallelograms.

~~15.~~13. The device of claim ~~12~~ 10 in which the areas of liquid crystalline material are circular or oval in shape.

~~16.~~14. The device of claim ~~12~~ 10 in which the two-dimensional matrix is a square matrix.

~~17.~~15. The device of claim ~~12~~ 10 in which the two-dimensional matrix is an octagonal matrix.

~~18.~~16. The device of claim ~~12~~ 10 in which the regular two-dimensional matrix is extant in a plane parallel to the plane of the device.

~~19.~~17. The device of claim ~~12~~ 10 in which the regular two-dimensional matrix is extant in a plane perpendicular to the plane of the device.

~~20.~~18. The device of claim ~~12~~ 10 in which the liquid crystalline material, when uniformly aligned, is dichroic in nature with a dichroic ratio in excess of 2:1.

~~21.~~19. The device of claim ~~12~~ 10 in which the alternation between isotropic and liquid crystalline material in the regular two-dimensional matrix interacts with the pattern of material layers in the light emitting device so as to localise light in the light emitting layer of the device.

~~22.~~20. The device of claim ~~12~~ 10 in which light emission in the plane of the device is suppressed by the combination of dichroism in the emitting material and the suppression of light propagation modes through the medium of alternating isotropic and liquid crystalline areas.

~~23.~~21. The device of claim ~~12~~ 10 in which the alternation between isotropic and liquid crystalline material along an axis in the plane of the two-dimensional matrix is within ± 20% of kλ/2, where λ is the wavelength of maximum emission intensity of the light emitting material of the light emitting device.

~~24.~~22. A non-coherent light emitting device comprising at least one organic light emitting or organic charge transporting layer wherein the aforesaid light emitting or charge transporting layer comprises a regular three-dimensional matrix array of zones of liquid crystalline material surrounded by and interspersed in isotropic material.

~~25.~~23. The light emitting device of claim ~~24~~ 22 in which the zones take the form of cubes, rectangular cuboids, or parallelipipeds.

~~26.~~24. The light emitting device of claim ~~24~~ 22 in which the zones take the form of cylinders, elliptic cylinders, spheres or ellipsoids.

~~27.~~25. The light emitting device of claim ~~24~~ 22 in which the matrix array forms either a simple cubic, a face-centered cubic or a hexagonal close-packed matrix lattice.

~~28.~~26. The device of claim ~~24~~ 22 in which the liquid crystalline material, when uniformly aligned, is dichroic in nature with a dichroic ratio in excess of 2:1.

~~29.~~27. The device of claim ~~24~~ 22 in which the alternation between isotropic and liquid crystalline material in the regular three-dimensional matrix interacts with the pattern of material layers in the light emitting device so as to localise light in the light emitting layer of the device.

~~30.~~28. The device of claim ~~24~~ 22 in which light emission in the plane of the device is suppressed by the combination of dichroism in the emitting material and the suppression of light propagation modes through the medium of alternating isotropic and liquid crystalline areas.

~~31.~~29. The device of claim ~~12~~ 10 in which the alternation between isotropic and liquid crystalline material along an axis through the two-dimensional matrix is within ± 20% of kλ/2, where λ is the wavelength of maximum emission intensity of the light emitting material of the light emitting device.

~~32. An electroluminescent device comprising at least one organic light emitting or organic charge transporting layer comprising liquid crystalline material, wherein the liquid crystalline material layer comprises a photonic band gap effect.~~

~~33.~~30. A method of manufacturing a layered electroluminescent device, which method comprises depositing an organic liquid crystalline emitter material as a layer, uniformly aligning the liquid crystal molecules' rod-like molecular cores within the layer, exposing selected regions of the aligned layer below the liquid crystal to isotropic phase transition temperature of the material to phase setting conditions in order to set the phase of the selected exposed regions, heating the layer comprising phase set regions above the material's liquid crystal to

isotropic phase transition temperature to a second exposure to phase setting conditions.