integral of the PSD over an area contained in and bound by a circle in Fourier space centered at zero wavenumber and having a radius of 9 radians/micrometer times the second refractive index is no more than 4 times Var.

8. The OLED display of claim 1, further comprising an interior layer disposed between the emissive OLED layer and the nanostructured interface;
wherein when the display is fully on, a first light output from the emissive OLED layer at a view angle of zero degrees relative to a normal to the display has a first color in the interior layer and a second color exterior to the display, a second light output from the emissive OLED layer at a view angle of 45 degrees relative to the normal to the display has a third color in the interior layer and a fourth color exterior to the display, the first and third colors having a first chromaticity distance therebetween, the second and fourth colors having a second chromaticity distance therebetween, the nanostructured interface being configured such that the second chromaticity distance is less than 0.75 times the first chromaticity distance.

9. The OLED display of claim 1, wherein an annular average of the wavenumber-PSD product has a maximum annular average at a wavenumber larger than 8 radians/micrometer times the second refractive index, and wherein for any wavenumber less than 8 radians/micrometer times the second refractive index, the wavenumber-PSD product is no more than 0.1 times the maximum annular average.

10. An organic light emitting diode (OLED) display comprising:
an emissive OLED layer;
a nanostructured interface disposed proximate to the emissive OLED layer; and an interior layer disposed between the emissive OLED layer and the nanostructured interface;
wherein when the display is fully on, a first light output from the emissive OLED layer at a view angle of zero degrees relative to a normal to the display has a first color in the interior layer and a second color exterior to the display, a second light output from the emissive OLED layer at a view angle of 45 degrees relative to the normal to the display has a third color in the interior layer and a fourth color exterior to the display, the first and third colors having a first chromaticity distance therebetween, the second and fourth colors having a second chromaticity distance therebetween, the nanostructured interface being configured such that the second chromaticity distance is less than 0.75 times the first chromaticity distance.

11. The OLED display of claim 10, wherein the interior layer is an OLED encapsulating layer.

12. An organic light emitting diode (OLED) display comprising:
an emissive OLED layer; and a nanostructured interface between two adjacent layers, the nanostructured interface disposed proximate to and outside an evanescent zone of the emissive OLED layer, the nanostructured interface having a substantially azimuthally symmetric power spectral density,
wherein the nanostructured interface is configured to provide substantially no diffractive transmission for light from the emissive OLED layer at a view direction normal to the emissive OLED layer, and the

nanostructured interface is configured to provide diffractive transmission for light from the emissive OLED layer in at least some view directions at an angle greater than 10 degrees to normal.

13. The OLED display of claim 12, wherein the nanostructured interface is configured to provide diffractive transmission for light from the emissive OLED layer in at least some view directions at an angle greater than 20 degrees to normal.

14. An organic light emitting diode (OLED) display comprising:
an emissive OLED layer; and
a nanostructured interface between first and second layers, the second layer disposed between the first layer and the emissive OLED layer, the first layer having a first refractive index, the second layer having a different second refractive index, the second refractive index being at least 1.6, the nanostructured interface disposed proximate to and outside an evanescent zone of the emissive OLED layer, the nanostructured interface having a variance in displacement from a mean displacement of the interface, Var, and a substantially azimuthally symmetric power spectral density, PSD,
wherein a first integral of the PSD over an area bound by a circle in Fourier space centered at zero wavenumber and having a radius of 9 radians/micrometer times the second refractive index is no more than 4 times Var.

15. The OLED display of claim 14, wherein a second integral of the PSD over a two-dimensional annulus in Fourier space is between 0.8 and 1.0 times $(2\pi)^2$ Var, the annulus having an inner wavenumber of 9 radians/micrometer times the second refractive index and an outer wavenumber of 16 radians/micrometer times the sum of the second refractive index and 0.9.

16. The OLED display of claim 14, wherein the emissive OLED layer comprises a plurality of colored subpixels, the colored subpixels comprising a shortest center wavelength λa, a longest center wavelength, and an intermediate center wavelength, and wherein a second integral of the PSD over a two-dimensional annulus in Fourier space is between 0.8 and 1.0 times $(2\pi)^2$ Var, the annulus having an inner wavenumber in a range of $1.8\pi\ n2/\lambda a$ to $2\pi\ n2/\lambda a$ and an outer wavenumber in a range of $2\pi\ (n2+0.9)/\lambda a$ to $2.2\pi\ (n2+0.9)/\lambda a$, n2 being the second refractive index.

17. The OLED display of claim 16, wherein the inner wavenumber is $2\pi\ n2/\lambda a$, the outer wavenumber is $2\pi\ (n2+0.9)/\lambda a$, and the second integral is between 0.9 and 1.0 times $(2\pi)^2$ Var.

18. A method of reducing variation of color with view angle in an organic light emitting diode (OLED) display comprising:
providing an encapsulated emissive OLED layer;
disposing an optical stack onto the encapsulated emissive OLED layer, the optical stack including a nanostructured interface between continuous first and second layers, the second layer disposed between the first layer and the encapsulated emissive OLED layer, the first layer having a first refractive index, the

second layer having a different second refractive index, the optical stack configured to reduce color variation with view angle of light output from the OLED display,
wherein the nanostructured interface has a substantially azimuthally symmetric power spectral density.

19. The method of claim 18, wherein the emissive OLED layer comprises a plurality of colored subpixels, the disposing step comprises providing the optical stack, the providing step comprising:
determining a characteristic wavelength at zero view angle of the emissive OLED layer;
determining a highest view angle of the emissive OLED layer where it is desired to preserve a light output of the emissive OLED layer without color correction;
determining a length scale as the center wavelength divided by a sum of the second refractive index and a sine of the highest view angle; and
forming the nanostructured interface such that an integral of the power spectral density of the nanostructured interface over an area contained in and bounded by a circle in Fourier space centered at zero wavenumber and having a radius of 6 radians divided by the length scale is no more than 4 times a variance in displacement from a mean displacement of the nanostructured interface.

20. The method of claim 18, wherein the colored subpixels have a shortest center wavelength, a longest center wavelength, and an intermediate center wavelength, and the characteristic wavelength is the shortest center wavelength, wherein an integral of the power spectral density over a two-dimensional annulus in Fourier space is between 0.8 and 1.0 times $(2\pi)^2$ times a variance in displacement from a mean displacement of the nanostructured interface, the annulus having an inner wavenumber of at least 1.6π times the second refractive index divided by the shortest center wavelength and an outer wavenumber of no more than 2.2π divided by the shortest center wavelength times a sum of the second refractive index and 0.9.