

103. The image display panel of claim 98, wherein said first polarization state is a first linear polarization state and said second polarization state is a second linear polarization state orthogonal to said first linear polarization state.

104. The image display panel of claim 98, wherein said first polarization state is a first circular polarization state and said second polarization state is a second circular polarization state orthogonal to said first circular polarization state.

105. The image display panel of claim 98, said broad-band reflector is a quasi-diffusive reflector.

106. The image display panel of claim 97, wherein said spatial intensity modulation structure is disposed between said backlighting structure and said spectral filtering structure- subpixel regions within each said spatially-encompassing pixel region comprise a "red" subpixel region having a "red" pass-band, a "green" subpixel region having a "green" pass-band, and a "blue" subpixel region having a "blue" pass-band.

107. The image display panel of claim 106, wherein said plurality of subpixel regions within each said spatially-encompassing pixel region comprise a "red" subpixel region having a "red" pass-band, a "green" subpixel region having a "green" pass-band, and a "blue" subpixel region having a "blue" pass-band.

108. The image display panel of claim 107, wherein said "red" pass-band transmits spectral components of light within said "red" pass-band and reflects substantially all spectral components of light within said "green" pass-band and said "blue" pass-band, wherein said "green" pass-band transmits spectral components of light within said "green" pass-band and reflects substantially all spectral components of light within said "red" pass-band and said "blue" pass-band, and wherein said "blue" pass-band transmits spectral components of light within said "blue" pass-band and reflects substantially all spectral components of light within said "red" pass-band and said "green" pass-band.

109. The image display panel of claim 106, wherein each said spectral filtering element is an optical element made from a material selected from the group consisting of liquid crystal material, holographic-type material, and interference-type material.

110. The image display panel of claim 106, wherein each said polarization modifying element is an optical element made from liquid crystal material.

111. The image display panel of claim 107, wherein said backlighting structure further comprises

a light guiding panel disposed between said broad-band reflector and said broad-band reflective polarizing filter for guiding said produced light over said predefined image display area.

112. The image display panel of claim 106, wherein said first polarization state is a first linear polarization state and said second polarization state is a second linear polarization state orthogonal to said first linear polarization state.

113. The image display panel of claim 106, wherein said first polarization state is a first circular polarization state and said second polarization state is a second circular polarization state orthogonal to said first circular polarization state.

114. The image display panel of claim 106, said broad-band polarizing reflector is a quasi-diffusive reflector.

115. The image display panel of claim 87, wherein, the spectral components of said polarized light producing said bright-type intensity level at each subpixel region within

said spatially-encompassing pixel region in said spatial intensity modulation structure are transmitted through said broad-band polarizer, and

wherein, the spectral components of said polarized light not producing said bright-type intensity level are reflected off said broad-band polarizer and transmitted back towards said backlighting structure for reflection and/or polarization conversion and retransmission towards the other said subpixel regions within said spatially-encompassing pixel region.

116. A wide incident angle reflective broadband polarizer comprising:

a first varying pitch helix cholesteric liquid crystal film for reflecting and transmitting circularly polarized light over a broad band of wavelengths,

a first constant pitch helix cholesteric liquid crystal film for rotating the elliptical axis of light from the first varying pitch helix cholesteric liquid crystal film, adjacent the first varying pitch helix cholesteric liquid crystal film,

a first homeotropic film for compensating the phase of the light from the first constant pitch helix cholesteric liquid crystal film, adjacent the first constant pitch helix cholesteric liquid crystal film such that unpolarized light entering the first varying pitch helix cholesteric liquid crystal film exits the first homeotropic film as circularly polarized light of one handedness for small and large angles of incidence.

117. A wide incident angle reflective broadband polarizer as in claim 116 wherein:

the helical axis of the first variable pitch helix cholesteric liquid crystal film is oriented perpendicular to the film surface,

the helical axis of the first constant pitch helix cholesteric liquid crystal film is oriented perpendicular to the film surface,

the long molecular axes of the first homeotropic film are aligned perpendicular to the film surface.

118. A wide incident angle reflective broadband polarizer as in claim 116 wherein:

a second varying pitch helix cholesteric liquid crystal film for reflecting and transmitting circularly polarized light over a broad band of wavelengths, adjacent the first varying pitch helix cholesteric liquid crystal film,

a second constant pitch helix cholesteric liquid crystal film for rotating the elliptical axis of light from the second varying pitch helix cholesteric liquid crystal film, adjacent the second varying pitch helix cholesteric liquid crystal film,

a second homeotropic film for compensating the phase of the light from the second constant pitch helix cholesteric liquid crystal film, adjacent the second constant pitch helix cholesteric liquid crystal film, such that unpolarized light incident on either homeotropic film of the wide incident angle broadband polarizer is transmitted as circularly polarized light of one handedness for small and large angles of incidence and reflected as circularly polarized light of the opposite handedness for small and large angles of incidence.