INDEX

t refers to tables, f refers to figures.

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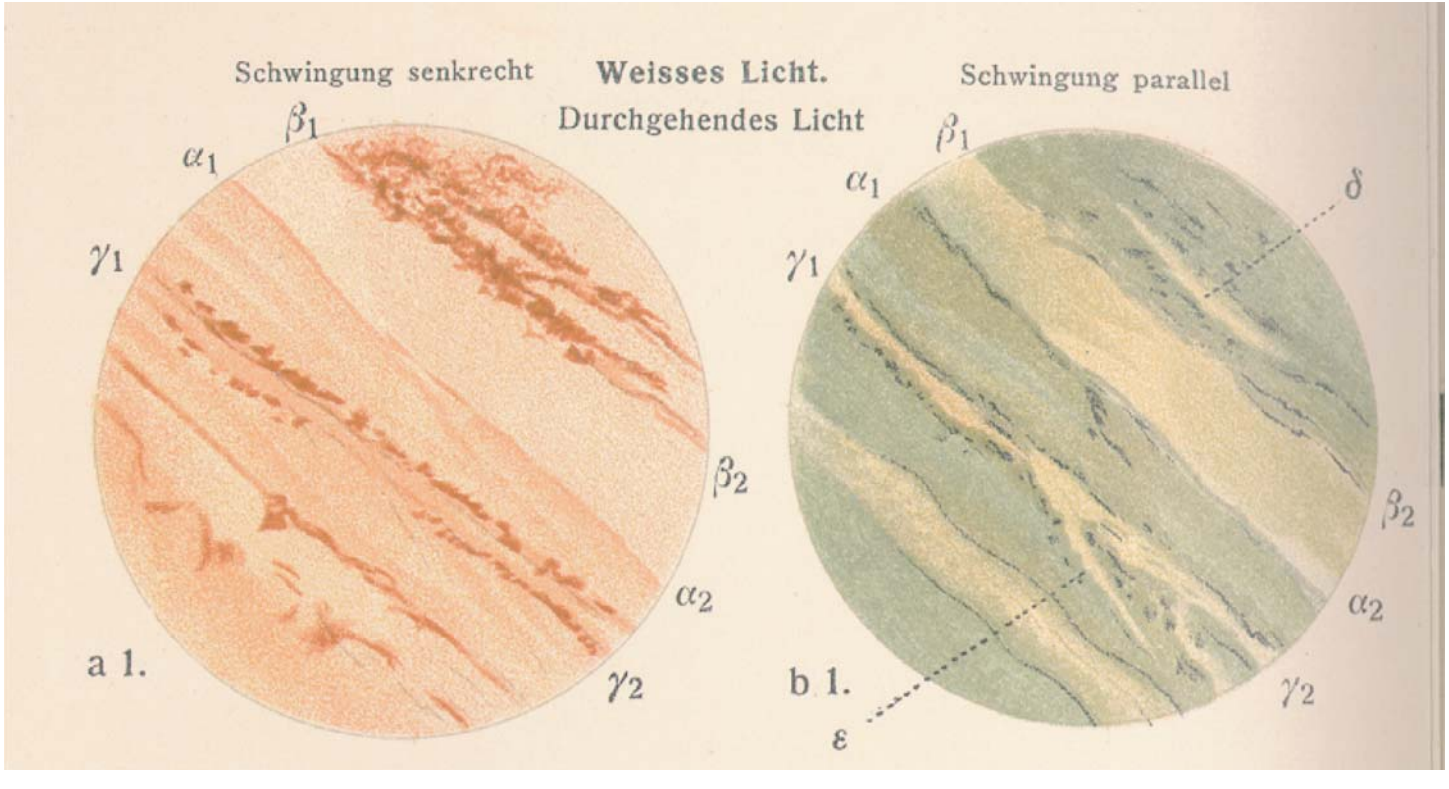

Figure 9.1. Microscope image of a dichroic nanocomposite consisting of gold particles embedded in wood (probably fir), published in 1905 [36]. The polarization plane of the light is parallel to the orientation axis of the wood in the left image and perpendicular in the right image.

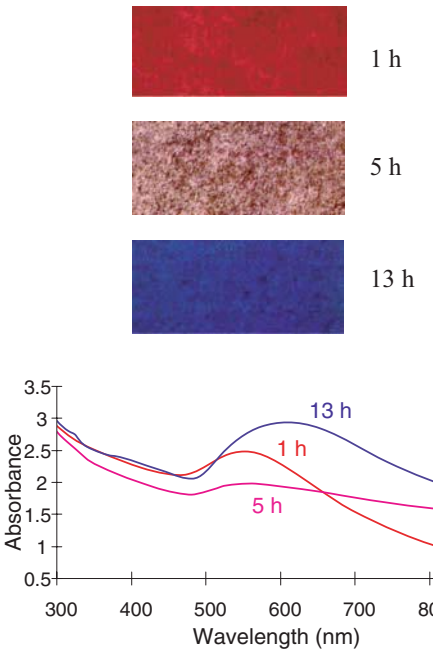

Figure 9.7. Colors and UV–Vis spectra of dispersions of gold particles (average diameter 2.2 nm, covered with a layer of 1-dodecanethiol) kept in a poly(ethylene) solution in *p*-xylene at 130°C for 1 hr, 5 hr, and 13 hr, respectively.

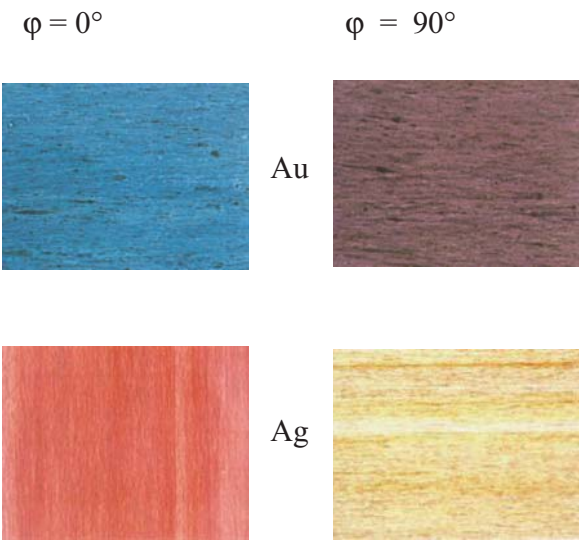

Figure 9.9. Colors of a drawn poly(ethylene)–gold and a poly(ethylene)–silver nanocomposite in polarized light with the polarization plane of the incident light and the drawing direction of the nanocomposite parallel (φ = 0°) and perpendicular (φ = 0°), respectively.

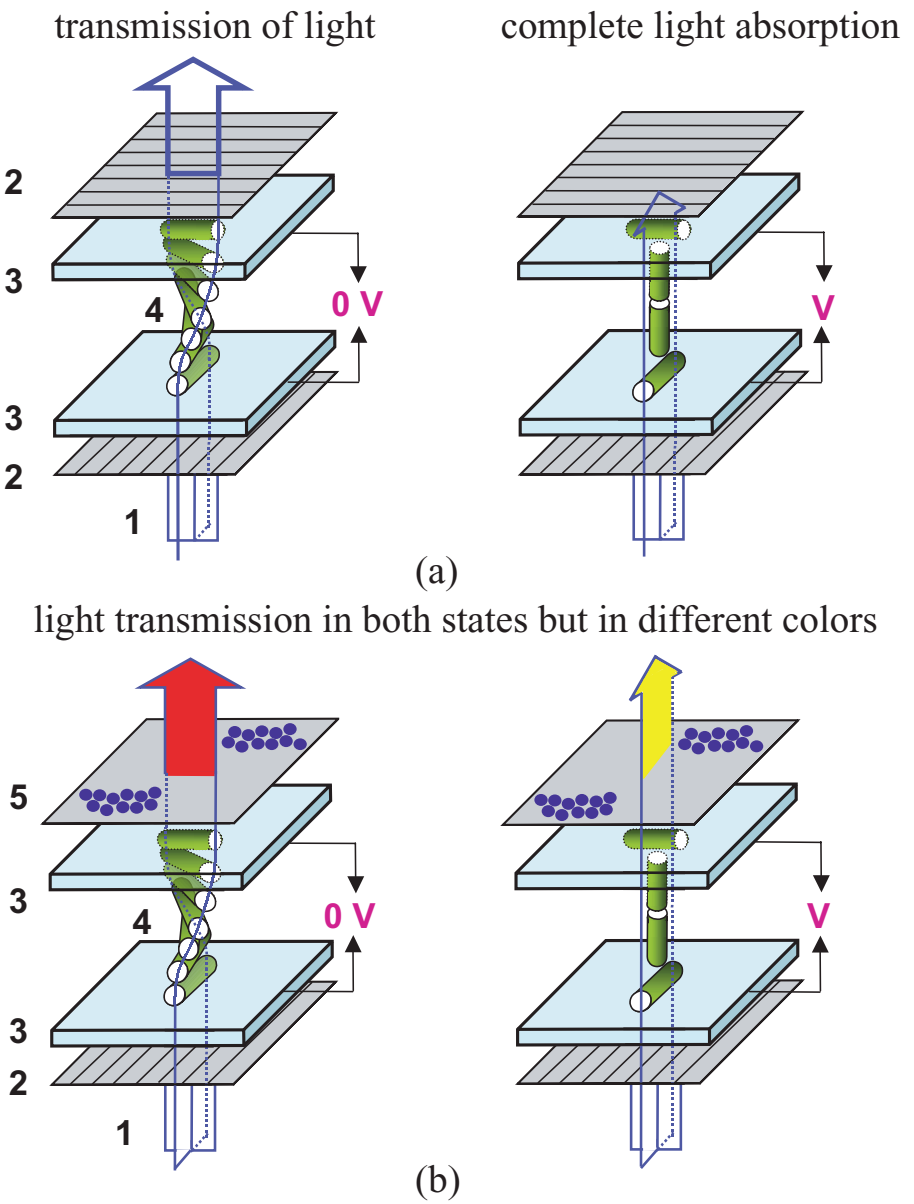

Figure 9.12. Schematic representation of **(a)** a standard twisted-nematic liquid crystal display and **(b)** a related display equipped with a drawn nanocomposite. 1, incoming light (unpolarized); 2, polarizer; 3, glass plate coated with an electrode layer and an orientation layer for the liquid-crystalline molecules; 4, liquid-crystalline molecules forming a 90° helical twist in absence of a voltage or a linear array parallel to an electric field in presence of an electric field; 5, nanocomposite with oriented arrays of metal particles.

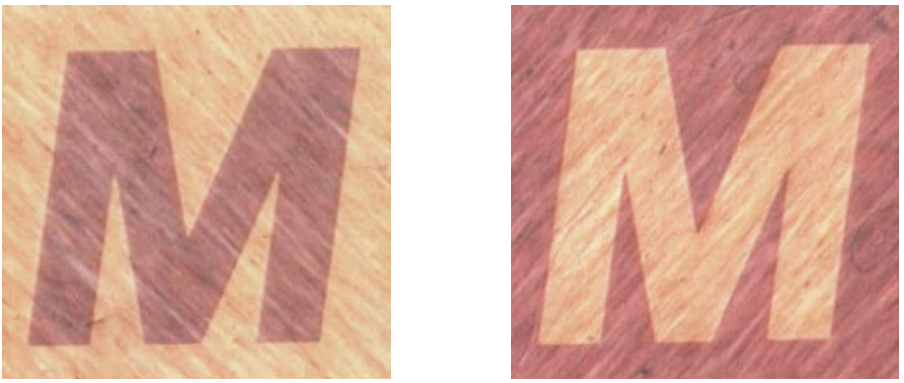

Figure 9.13. A twisted-nematic liquid crystal display (LCD) equipped with a poly(ethylene)–silver nanocomposite that had been annealed at 180°C for 15 hr and subsequently drawn as described in the text. The drawing axis of the nanocomposite is oriented parallel to the polarizer in the left image and perpendicular in the right image.