

Liquid crystal display (LCD), based on a luminescent dichroic-dye-doped non-absorbing nematic LC with positive dielectric anisotropy is proposed. In the initial state, the orientation of the dye molecules provides effective light absorption and irradiation. By applying an electric field to the cell, the absorption and thus the luminescence intensity is reduced. A two-color luminescence could be achieved by sandwiching two cells: the upper cell consists of a nematic LC doped with dichroic dye) and is used with an applied voltage (active cell), the lower cell consists of a nematic LC, doped with one dye and works without applying a voltage (passive cell). The electro-optical characteristics of the prepared luminescent display were investigated.