

Title (en)
VERTICALLY ALIGNED HELIX-DEFORMED LIQUID CRYSTAL DISPLAY

Title (de)
FLÜSSIGKRISTALLANZEIGE MIT VERTIKAL AUSGERICHTETER, DEFORMIRTER HELIX

Title (fr)
ECRAN A CRISTAUX LIQUIDES ALIGNES VERTICALEMENT ET DEFORMES EN HELICE

Publication
EP 1131671 A1 20010912 (EN)

Application
EP 99972747 A 19991120

Priority
• KR 9900700 W 19991120
• KR 19980050029 A 19981121

Abstract (en)
[origin: WO0031582A1] A vertically aligned helix-deformed ferroelectric liquid crystal display is provided which includes: the first (10) and second glass substrates (50) each of which has two surfaces, the first (10) and second glass substrates (50) facing each other; a first transparent electrode (20) having a first potential, being formed on a first surface (12) of the first glass substrate (10); a second transparent electrode (30) having a second potential different from the first potential, being formed on the first surface (12) of the first glass substrate (10); a first vertical alignment layer (40) being formed on the first surface (12) of the first glass substrate (10), on which the first and second transparent electrodes (20, 30) are formed; a second vertical alignment layer (60) formed on a first surface (52) of the second glass substrate (50); and a ferroelectric liquid crystal (70) being filled between the first and second glass substrates (10, 50) on which the first and second vertical alignment layers (40, 60) are respectively formed, facing each other, the ferroelectric liquid crystal (70) having a shorter helix pitch than the wavelength of the light, the ferroelectric liquid crystal (70) being helix-deformed in response to an electric field applied across the first and second transparent electrodes (20, 30) so that its molecules rotate in a specific direction, thereby achieving uniform alignment and the analog gray scale capability.

IPC 1-7
G02F 1/141; **G02F 1/1337**; **C09K 19/02**; **G09F 9/35**

IPC 8 full level
G02B 5/30 (2006.01); **G02F 1/133** (2006.01); **G02F 1/1337** (2006.01); **G02F 1/135** (2006.01); **G02F 1/141** (2006.01)

CPC (source: EP KR)
G02F 1/133 (2013.01 - KR); **G02F 1/141** (2013.01 - EP); **G02F 1/133742** (2021.01 - EP); **G02F 1/1414** (2021.01 - EP)

Citation (search report)
See references of WO 0031582A1

Designated contracting state (EPC)
DE FR GB NL SE

DOCDB simple family (publication)
WO 0031582 A1 20000602; AU 1187900 A 20000613; CN 1326560 A 20011212; EP 1131671 A1 20010912; JP 2002530720 A 20020917; KR 100320102 B1 20020422; KR 20000033252 A 20000615

DOCDB simple family (application)
KR 9900700 W 19991120; AU 1187900 A 19991120; CN 99813483 A 19991120; EP 99972747 A 19991120; JP 2000584341 A 19991120; KR 19980050029 A 19981121