

Title (en)

LIQUID CRYSTAL MIXTURE AND ITS USE FOR BISTABLE OR MULTISTABLE ELECTRO-OPTICAL DEVICES

Title (de)

FLÜSSIGKRISTALLMISCHUNG UND IHRE VERWENDUNG FÜR BISTABILE ODER MULTISTABILE ELEKTROOPTISCHE VORRICHTUNGEN

Title (fr)

MELANGE DE CRISTAUX LIQUIDES ET SON UTILISATION DANS DES DISPOSITIFS ELECTRO-OPTIQUES BISTABLES OU MULTISTABLES

Publication

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Application

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Abstract (en)

[origin: WO2009004665A2] Nematic liquid crystals, in particular conditions, assume locally and sometime only temporarily configurations characterized by a biassic order. This fact allows to connect between them uniaxial nematic textures with different topology without complete fusion of the nematic order, i.e. without the need to reduce the scalar order parameter to zero. The control of these transitions with electric fields allows to realize bistable or multistable displays of new conception. In fact two bistable or multistable textures are separated from a barrier of a well defined potential that it is determined from a biassic intermediate state, that connects said textures, determining the reorientation without rotation of the nematic director. Such mechanism is known in scientific literature as "order reconstruction". From now on in this document it will be indicated as "Biaxial Order Reconstruction in Nematics" or with acronym "BORN". The scope of the present invention is to realize mixtures of calamitic nematic liquid crystals with materials that favour the tendency to assume a biaxial order, in order to reduce the external electric field intensity necessary to reconstruct of the order.

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