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(71) Applicant (for all designated States except US): **Universita della Calabria** [IT/IT]; Via P. Bucci 7-11 /B, loc Arcavacata, 87036 RENDE (CS) (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BARBERI RICCARDO** [IT/IT]; Via G. Verdi n°160/C, 87036 RENDE (CS) (IT). **BARTOLINO ROBERT** [IT/IT]; Via Salerno, 87036 RENDE (CS) (IT). **LOMBARDO GIUSEPP** [IT/IT]; Via G. Ungaretti n°59, 87036 RENDE (CS) (IT). **CIUCHI FEDERICA** [IT/IT]; Via C. Menotti n°64/B,

87036 RENDE (CS) (IT). **DE SANTO MARIA PENELOPE** [IT/IT]; Via G. Verdi n° 160/C, 87036 RENDE (CS) (IT). **VIRGA EPIFANIO GUIDO** [IT/IT]; Via XX Settembre 41, 27100 PAVIA (IT). **AYEB HABIB** [IT/IT]; Via A. Savinio, 87036 RENDE (CS) (IT). **DURAND GEORGES** [IT/IT]; 16, rue de Chateaufort, 91400 ORSAY (IT). **SONNET ANDRE' MATHIAS** [GB/GB]; 6A WINTON CIRCUS., SALTCOASTS, SCOTLAND (GB).

(74) Agent: **PERROTTA ALDO**; Piazzetta T. Campanella 3, I - 88068 SOVERATO (CZ) (IT).

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(54) Title: LIQUID CRYSTAL MIXTURE AND ITS USE FOR BISTABLE OR MULTISTABLE ELECTRO-OPTICAL DEVICES

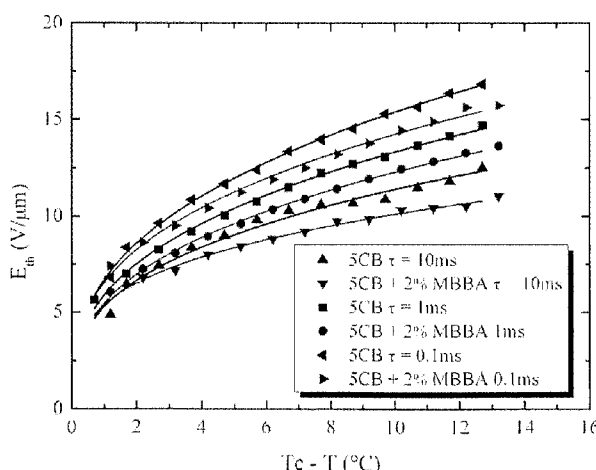


FIG. 6

(57) Abstract: Nematic liquid crystals under certain circumstances assume locally and sometimes only temporarily configurations characterized by a biaxial order. This fact allows to connect 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 by a barrier of a well defined potential that is determined from a biaxial 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". 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 the order.



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European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,
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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	CIUCHI F ET AL: "Control of transient biaxial order in calamitic nematics" Applied Physics Letters American Institute of Physics USA, vol. 91, no. 24, 10 December 2007 (2007-12-10), pages 244104-1, XP002507132 ISSN: 0003-6951 the whole document	1-5
X	US 2004/164276 A1 (HIRSCHMANN HARALD [DE] ET AL) 26 August 2004 (2004-08-26) examples 1,4 paragraphs [0037], [0038] ----- -/--	1-5

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Lüssem, Georg

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/080325 A1 (GOULDING MARK J [GB] ET AL GOULDING MARK JOHN [GB] ET AL) 12 April 2007 (2007-04-12) paragraph [0001]; examples 1-18 -----	1,2,5
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