

**Публикации и патенты заведующего лабораторией жидких кристаллов
Института кристаллографии РАН, доктора физико-математических наук
Сергея Петровича Палто**

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Соавторы: Барник М.И., Гейвандов А.Р., Уманский Б.А., Штыков Н.М.

10. Палто С. П. Патент на изобретение No2582208. Способ управления амплитудой и направлением электрического поля в слое жидкого кристалла, устройство для управления амплитудой и направлением электрического поля в слое жидкого кристалла и жидкокристаллический модулятор света.

Приоритет 15 января 2014 г.

Срок действия 15 января 2034г.

(Заявка на патент " Способ и устройство для переключения направления электрического поля в слоях жидких кристаллов и быстродействующий модулятор света"

Регистрационный номер: 2014101134, 2014 г.)

Соавторы: Барник М. И., Гейвандов А. Р., Палто В. С.

Международные патенты

Serguei Palto has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO).

11. KR 195263, 1999. "LCD Having Polymer Micro-Ball Monolayer And Manufacturing Method Thereof", Inventors: S.-T. Shin, J.-U. Shim, S. P. Palto, V. F. Petrov

12. Negative Dispersion Retardation Plate And Achromatic Circular Polarizer

Patent number: 8895118

Type: Grant

Filed: November 6, 2011

Date of Patent: November 25, 2014

Assignee: Crysoptix K.K.

Inventors: Arthur Geivandov, Pavel Ivan Lazarev, Serguei Palto

Abstract: The present invention relates generally to the field of organic chemistry and particularly to the nematic lyotropic liquid crystal solution and negative dispersion retardation plate for application in 3D liquid crystal displays. The negative dispersion retardation plate comprises a substrate, and at least one optically anisotropic retardation layer comprising a multi-component guest-host composition coated onto the substrate.

13. Negative Dispersion Retardation Plate And Achromatic Circular Polarizer

Publication number: 20120113380

Type: Application

Filed: November 6, 2011

Publication date: May 10, 2012

Applicant: Crysoptix KK

Inventors: Arthur Geivandov, Pavel Ivan Lazarev, Serguei Palto

Abstract: The present invention relates generally to the field of organic chemistry and

particularly to the nematic lyotropic liquid crystal solution and negative dispersion retardation plate for application in 3D liquid crystal displays. The negative dispersion retardation plate comprises a substrate, and at least one optically anisotropic retardation layer comprising a multi-component guest-host composition coated onto the substrate.

14. Color Liquid Crystal Display And Compensation Panel

Patent number: 8142863

Type: Grant

Filed: April 20, 2009

Date of Patent: March 27, 2012

Assignee: Crysotix, KK

Inventor: Serguei Palto

Abstract: In one aspect of the present invention there is provided an optically anisotropic compensation panel with spectrally controllable dispersion of refractive indices. The compensation panel comprises at least one optically anisotropic layer based on an ordered guest-host system. The guest-host system comprises an anisotropic host matrix including an organic compound transparent to electromagnetic radiation in the visible spectral range, and guest component having guest particles. In another aspect the present invention provides a method of producing an optically anisotropic compensation panel disclosed. And in yet another embodiment the present invention provides a liquid crystal display with the compensation panel disclosed.

15. Color Liquid Crystal Display and Compensation Panel

Publication number: 20090268136

Type: Application Filed: April 20, 2009

Publication date: October 29, 2009

Applicant: Crysotix KK

Inventor: Serguei Palto

Abstract: In one aspect of the present invention there is provided an optically anisotropic compensation panel with spectrally controllable dispersion of refractive indices. The compensation panel comprises at least one optically anisotropic layer based on an ordered guest-host system. The guest-host system comprises an anisotropic host matrix including an organic compound transparent to electromagnetic radiation in the visible spectral range, and guest component having guest particles. In another aspect the present invention provides a method of producing an optically anisotropic compensation panel disclosed. And in yet another embodiment the present invention provides a liquid crystal display with the compensation panel disclosed.

16. Interferential Optical Filter

Publication number: 20070195416

Type: Application

Filed: August 7, 2003

Publication date: August 23, 2007

Applicant: Nitto Denko Corporation

Inventors: Pavel Lazarev, Serguei Palto, Michael Paukshto

Abstract: An interferential optical filter is provided comprising multiple layers each having real and/or imaginary refraction indexes. The values of the real and imaginary indexes depend on the strength of an external electric field. The material refraction indexes and the thickness of each layer and their combination are selected such as to provide an interference extremum in at least one region of the spectrum, for at least one polarization of incident light. At least one layer is made of an electro-optical material, which is anisotropic and made from at least one aromatic organic material. The molecules or fragments of molecules of the aromatic organic material have a flat structure. At least part of the layer of the electro-optical material has a crystalline structure with an intermolecular spacing of 3.4 ± 0.3 Å along one of optical axes.

17. Super-Twist Nematic Liquid Crystal Display Using Thin Crystal Film Polarizer

Publication number: 20060238672

Type: Application

Filed: June 15, 2004

Publication date: October 26, 2006

Applicant: NITTO DENKO CORPORATION

Inventors: Michael Paukshto, Serguei Palto, Louis Silverstein

Abstract: A simple, reliable and cost-effective super-twisted nematic liquid crystal display is disclosed. The liquid crystal display is suitable for application in all portable electronic devices due to the reliable and simple design employing a thin crystal film polarizer and is particularly suitable for outdoor display applications due to its increased environmental robustness. The thin crystal film polarizer also increases the viewing characteristics of the liquid crystal display and provides additional advantages. The disclosed liquid crystal display includes a front and rear polarizer and a super-twisted nematic liquid crystal layer, wherein the liquid crystal layer has a twist angle from about 230° to about 250° . The front and rear transmission axes of the polarizers are angularly displaced by about 70° to about 86° relative to each other.

18. Normally White, Supertwist Nematic Liquid Crystal Display Of Reflective Type

Patent number: 7084939

Type: Grant

Filed: August 7, 2003

Date of Patent: August 1, 2006

Assignee: Nitto Denko Corporation

Inventors: Michael V. Paukshto, Serguei Palto

Abstract: A normally white supertwist nematic liquid crystal display of reflective type is provided. This display comprises a reflector, a layer of chiral nematic liquid crystal having a front aligning surface facing a light source and a rear aligning surface facing the reflector, and a front polarizer. The nematic liquid crystal has an optical retardation ($\Delta n d$) of the layer and a distribution of directors, wherein the chiral nematic liquid crystal has a twist angle (θ) between an alignment direction of the director at the front aligning surface and an alignment direction of the director at the rear aligning surface. The front polarizer is disposed between the layer of chiral nematic liquid crystal and the light source. The front polarizer has a transmission axis forming an angle (α) with the alignment direction of the director at the front aligning surface of the chiral nematic liquid crystal layer. The optical retardation ($\Delta n d$) and the angle (α) are defined by the following formulas: $\theta = \text{sign}(\theta) \cdot (47.0 \pm 0.4936|\theta|)^{+2}$.

19. Normally White, Supertwist Nematic Liquid Crystal Display Of Reflective Type

Publication number: 20040085508

Abstract: A normally white supertwist nematic liquid crystal display of reflective type is provided. This display comprises a reflector, a layer of chiral nematic liquid crystal having a front aligning surface facing a light source and a rear aligning surface facing the reflector, and a front polarizer. The nematic liquid crystal has an optical retardation ($\Delta n d$) of the layer and a distribution of directors, wherein the chiral nematic liquid crystal has a twist angle (θ) between an alignment direction of the director at the front aligning surface and an alignment direction of the director at the rear aligning surface. The front polarizer is disposed between the layer of chiral nematic liquid crystal and the light source. The front polarizer has a transmission axis forming an angle (α) with the alignment direction of the director at the front aligning surface of the chiral nematic liquid crystal layer.

Type: Application

Filed: August 7, 2003

Publication date: May 6, 2004

Inventors: Michael V. Paukshto, Serguei Palto

20. Liquid Crystal Display Operating In A Vertically Aligned Mode

Patent No: US 7,889,297 B2

Date of Patent: Feb. 15, 2011

Inventor: Serguei Petrovich Palto, Moscow Region (RU)

Abstract:

The present invention relates generally to the field of liquid crystal display devices and more particularly to a liquid crystal display device operating in vertically aligned mode (VA mode) in which liquid crystal molecules having a negative dielectric anisotropy are aligned generally perpendicularly to a panel surface of the liquid crystal display. A liquid crystal display according to the invention comprises a liquid crystal cell (6) of a vertical alignment mode, at least one polarizer (2, 10) arranged on each side of the liquid crystal cell, and at least one compensating structure (3, 7) disposed between the liquid crystal cell and at least one of the polarizers. The

polarizers have transmission axes (11, 18) which are perpendicular to each other.

21. Compensated In-Plane Switching Mode Liquid Crystal Display

Patent No: US 8,416,376 B2

Data of Patent: Apr.9, 2013

Inventor: Serguei Petrovich Palto

Assignee: Crysoptix KK, Tokyo (JP)