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A number of passive- and active-matrix prototypes have been presented. However, although their use in a number of application areas has been suggested, no commercial products have been announced yet. This work reviews the state of the art of AFLC displays, the reasons for their present low incidence in display markets, and the latest developments aiming to overcome the main shortcomings that hinder their development. V-shape smectic displays are also included in this study. Al- though not considered strictly antiferroelectrics nowadays, V-shape materials behaviour and scope are similar to traditional AFLCs. The world market for displays amounts roughly FPDs are ubiquitous nowadays, being is able to unleash its potential performance [7]. Most of high-end LCD realizations derive from active A dozen emissive and non-emissive technologies were matrix AM displays, where the display performance is ulti- tested as FPDs during the last two decades of past century; mately dictated by the device electronics. Active matrix at present, just a few of them are still considered [2] actual LCDs are usually based on thin-film transistors TFTs. Ta- competitors for high volume consumer applications ble 1 shows a comparison of active and passive LCD tech- Fig. Even less are able to compete with the traditional nologies. This digital micromirror displays are currently available within means that, unlike previous multiplexed passive displays this segment. In either case, an ever increasing number of like supertwist nematics, the device resolution strictly, the these high-end displays are based on liquid crystals. In the product resolution frame rate can be increased without im- 90s, liquid crystal displays LCDs extended their tradi- pairing other display characteristics such as brightness. A constant voltage must be video and computer applications [3], as well as high resolu- applied to every pixel for the transmission to be kept. In an tion miniature displays for video projection and spatial active matrix, the active element controlling each pixel is re- light modulators [4]. At present, LCDs are the natural sponsible for holding the pixel information as sent during choice not only for lap-top computers, but for desk-top the corresponding slot, whereas in a passive matrix nematic computers, a traditional CRT market. Moreover, LCDs are LCD pixels must be either continuously driven direct ad- becoming, in the last three years, the most serious candi- dressing or allowed to lose their transmission through relax- date to FPD for consumer TV. Technologies and applications of displays. A trend for increasing size and resolution is highlighted. At the same time as AM-TFT LCDs were developed, an ilies â€” antiferroelectrics, V-shape smectics, orthoconic ma- alternative way to prepare high resolution LCDs arose from terials â€” have widen the number of possible applications for a different approach. Bistability was demonstrated in these materials. In the last few years, ferroelectric-based smectic LC phases, associated with ferroelectricity. Bi- display prototypes ranging from microdisplays to large di- stable LCs are able to hold pixel information in the absence rect-view displays have been created [8], demonstrating the of power supply. Therefore, they can be driven, in princi- feasibility of such technology. Development of these dis- ple, by passive matrices. Since then, new ferroelectric fam- plays has been precluded by the lack of suitable materials Table 1. Display capabilities of different LCD technologies. Some recent realizations on AM-TFTs, on the other hand, have experienced an extraor- high-end displays include special arrangements of elec- dinary growth in many different applications areas [9]. In this work, the current state of the art and possible evolution of displays made of several ferroelectric kinds is 2. Switching ferroelectric displays reviewed. The work is focused on the above mentioned three families, whose electrooptic characteristics bestow All ferroelectric families in surface-stabilized homoge- good performance for high-end display applications. The simplest case is the bistable switching of regular FLCs. Electrooptical behaviour of ferroelectric orientation achieved upon the application of an electric field is kept in the absence of voltage. This intrinsic mem- families ory can be used to generate permanent images in displays with no power consumption, and to prepare high rate multi- An increasingly growing number of smectic LC phases plexed displays with passive matrices. A number of them show The main disadvantage of FLC materials in high-end ferroelectricity. Depending on their spontaneous orienta- displays arises from its own bistability. Indeed, permanent tion in the absence of voltage, ferroelectric LC materials, orientation avoid the generation of intermediate transmis- similarly to solid ferroelectric materials, are classified in sion levels i. A full greyscale is required three different groups: These dithering techniques in- polarization lower than the corresponding ferroelectric crease the number of addressed subpixels spatial or re- material. No practical applications of these phases have duce the frame time temporal. In either case the data rate been described yet. Data rates as high as 2 Gbps may be required to been included: Besides the controversy about the ori- gin of this effect, and the involved smectic phase [11], 2. Analogue switching their electrooptical EO behaviour seems quite appro- priate for display applications. This SmC are characterized by the angle formed between is a decisive advantage for these materials to be employed the molecular director and the smectic layer normal. In in high-end displays. This confers unique EO properties to these mate- V-shape smectics show thresholdless switching, the grey- rials [12], as commented below. Ferroelectric and scale being developed at low voltages. Tristate antiferro- antiferroelectric orthoconic materials have been found. Grey Displays made of ferroelectric LCs are usually prepared levels can be stabilized by applying a constant DC voltage in thin 1. Bias voltage is the same homogeneous configuration i. The greyscale ility or multistability. Moreover, all the configurations voltage range in both cases is just a few volts, therefore it achieved by the material upon switching are oriented paral- can be generated with standard electronics. This feature is As it can be seen in Fig. Grey levels are kept as long as the correct voltage from the optical point of view. All kinds of ferroelectric is applied to every pixel. As a consequence, multiplexing of displays show excellent optical performance as compared these materials requires the use of active matrices. Tristate to twisted LCDs. The viewing angle is high, and colour AFLCs, on the other hand, can be driven either with active or degradation for oblique light incidence is less noticeable passive matrices, for grey levels can be maintained over the than in twisted nematic LCDs â€" not to mention whole display with a constant DC voltage. Electrooptical responses of two ferroelectric families showing analogue greyscale: Switching time is another essential feature for any LC V-shape materials cannot be ultimately considered regular material to be used in high-end displays. Anyhow, the lack of hysteresis precludes passive ward. Indeed, their switching times are similar to other multiplexing of V-shape smectics; as mentioned above, FLC families regular FLCs, for example. However, V-shape multiplexing requires an active matrix to address achieving the 0-volt state requires the absence of external the display. This relaxation process is significantly slower than The second solution takes advantage of the excellent switching. To overcome this problem, the driving wave- dark state shown by orthoconic materials. Passive and ac- form must include voltage signals performing forced relax- tive multiplexings are possible, and waveforms are sub- ations of switched materials. However, contrast in tristable 3. The con- trast ratio is impaired by light leakage in the dark state. The intrinsic bistability of regular FLC displays is a clear This is in turn attributed to a phenomenon called advantage for multiplex driving, but precludes the genera- pretransitional effect PE, Ref. The most noticeable tion of grey levels. These are necessary to produce a full consequence of PE is that the dark state transmission ob- colour gamut, a must in high-end displays. This is one of the main advantages of these ma- as a bias voltage for grey level stabilization is employed. The greyscale generation is compatible with passive Although this leakage does not invalidate the tristable ap- multiplexed addressing. The use of an analogue greyscale, proach, it certainly limits its use in applications demanding in principle, enhances the display performance as com- high contrast. Two different solutions have been proposed pared to dithering techniques. Moreover, the data rate is to circumvent the problem: V-shape smectics were for- withstanding, the required rate of analogue data pulses for merly known as thresholdless antiferroelectrics [16]. Al- display columns is reduced down to the above mentioned though much work has been done to demonstrate that figure. Addressing waveforms for passive AFLC multiplexing. It includes a well pulse c to force the relaxation. Figure 3 shows several passive addressing schemes for Shortly after the advent of antiferroelectric materials, a AFLC multiplex driving. The hysteresis cycle is presented number of prototypes were built. Nippondenso [24] devel- for reference, while time axis increases downwards. Selection is performed through prototype. This mostly due to the poor contrast exhibited by regular scheme, however, shows memory effect, i. Once orthoconic materials are available, it is ex- achieved in one frame depends on the grey level of the pre- pected that a renewed interest on development of passive vious frame. To avoid memory effect, the pixel must be AFLC displays will arise. At present, a helmet-mounted erased between consecutive frames. This waveform can be used for low rate ap- 3. Analogue greyscale in V-shape smectic displays plications; however, it is not satisfactory for applications requiring high frame rates e. This problem can be mission variation. Saturation is usually achieved in less circumvented by forcing the relaxation with a coun- than 5 volts. This thresholdless IPS switching arises the ter-pulse well pulse previous to reset time. The resulting possibility of using V-shape materials as an alternative to waveform [20], proposed by our group, is shown in section standard nematics in high-end applications on active matri- 3. An alternative waveform, shown in section 3. Indeed, their ferroelectric nature gives them an excel- proposed by Okada et al. It is based on interframe sat- lent dynamic response whereas their IPS switching yields a uration a, d of the pixels.

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SI-ID] 2. SI-ID] 3. SI-ID] 4. SI-ID] 5. SI-ID] 6. Robert Blinc, Valentin V. SI-ID] 7. Dalal, "AC susceptibility and NMR observation of a deuterium isotope effect in the magnetization dynamics of the Mn[sub] 12 -acetate nanomagnet", Phys. SI-ID] 8. Zhang, "Glassy dynamics in an electron-irradiated poly vinylidene fluoride-trifluoroethylene copolymer system", Phys. SI-ID] 9. Zhang, "Dielectric properties of relaxor-like vinylidene fluoride-trifluoroethylene-based electroactive polymers", Macromolecules, vol. SI-ID] Pankrath, "Probing polar nanoregions in Sr[sub] 0. Rasing, "Structure and polarity of 8CB films evaporated onto solid substrates", The European physical journal. E, Soft matter, 11, str. Craig Bennett, "Competition between surface reaction and diffusion of gold deposited onto ZrTe[sub]3", Surf. Kozlova, Sviatoslav Petrovich Gabuda, Robert Blinc, "Electron correlation and the lone pair effect in the phosphorous and arsenious acids: Laguta, Maiia Davydovna Glinchuk, S. Coronado, "Unusual magnetic state in lithium-doped MoS[sub]2 nanotubes", Phys. Argitis, Alciviadis-Constantinos Cefalas, "The challenges of nm nanolithography: Seo, Polona Umek, 10 avtorjev , "Synthesis and manipulation of carbon nanotubes", New journal of physics, vol. Rasing, "Observation of twist nematic liquid-crystal lines", J. Andrej Vilfan, Thomas Duke, "Two adaption processes in auditory hair cells together can provide an active amplifier", Biophys. Andrej Vilfan, Thomas Duke, "Synchronization of active mechanical oscillators by an inertial load", Phys. Laguta, Robert Blinc, "NMR evidence for the coexistence of order-disorder and displacive components in barium titanate", Phys. E, Soft matter, vol. SI-ID] 1. Fundamental physics of ferroelectrics Postgraduate European Radiopharmacy Course: January , , Padova, [S. Molecular nanostructures, AIP conference proceedings, vol. Vid Bobnar, Peter Lunkenheimer, M. Loidl, "Phase transitions in Gd[sub] 0. Vizija trajnostnega razvoja v Sloveniji: Proceedings of the first European conference on wood modification: Simulations in Biomedicine V, Advances in computational bioengineering, vol. Zbornik referatov s posvetovanja, Slovenski kemijski dnevi, Maribor, Nina Jug, Herman J. Part II of IV: Aveiero, Portugal, september , , Ferroelectrics, vol. Fifteenth symposium on thermophysical properties, Boulder, Colorado, USA, June , , Boulder, National institute of standards and technology, , 11 str. Duke, "Two adaptation processes in auditory hair cells together can provide an active amplifier", V: Biophysics of the cochlea: Exploring a worthwhile future for all: Torino Italy , May , , [S. Wortham, "X-band ESR study of a magnetic ordering in single layers of quadratic Heisenberg antiferromagnetic lattice", V: Canadian Association Physical Annual Meeting: Zhang, "Glassy dynamics in relaxor-like electroactive polymers: Rasing, "Structure of multilayer 8CB films evaporated onto solid substrates", V: Rasing, "Growth and structure of evaporated 8CB films", V: Book of abstracts, 5. September, , Marko Dolinar, ur. Craig Bennett, Frank W. Twelfth Croatian-Slovenian crystallographic meeting: Plitvice, Croatia, June , Zeisig, "Interaction of alkylphospholipid liposomes with MT3 breast cancer cells", V: Nonlinear dielectric phenomena in complex liquids: Badajoz, Spain, October th, Nuclear and electron relaxation: Antalya, Turkey, September , , [S. Vikhnin, "Theory of electrostriction and piezoelectricity in relaxor ferroelectrics: Albert Prodan, Herman J. February , , Toulouse France , [S. EuroNanoForum - European and international forum on nanotechnology: Trieste Italy , December Sigov, "Polarons, bi-polarons, and bi-polaronic excitons in ferroelectric relaxors: Andrej Vilfan, "Instabilities in muscle transient response: Andrej Vilfan, "Synchronization of active mechanical oscillators by an inertial load", V: Andrej Vilfan, "Two adaptation processes in auditory hair cells together can provide an active amplifier", V: Sousa, "NMR relaxometry of mesogenic fluids", V:

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Piecek Displays 25 9â€”19 www. The compounds enable to prepare broad temperature range to 8C orthoconic antiferroelectric mixtures, having tilt independent of temperature in broad temperature range, and exhibiting excellent contrast and grey level scale. Orthoconic antiferroelectrics; Phase transition; Enthalpy transition; Layer spacing; Helical pitch; Hystereses loop; Electrooptical cell characterisation 1. Introduction the sample there are some difficulties in forming of uniform layers and layer normal direction at Iso â€”SmA or Surface stabilized antiferroelectric liquid crystals Iso â€” SmCpanti phase transitions. Such a structure placed in SSAFLCs can be used to build fast response electrooptic birefractive set-up exhibits a light transmission even if the devices and displays [1 â€” 3]. These materials have several average optical axis is parallel with an analyzer or advantages in comparison to surface stabilized ferroelectric polarizer. Due to from the antiferro- to the ferro state below the threshold their tristability, a simple passive matrix driving scheme can voltage. During the transition from the orthogonal SmA be utilized. Using this technology even big flat panels with phase to the anticlinic SmCpanti phase directly or via SmCp video rate were demonstrated [4], but their commercial phase a shrinkage of smectic layers occurs and it leads to the production was not started. It is of the dynamic nature and seems to be more spatial fluctuations of optic axis [7]. The second one is poor optical uniformity in off Methods of obtaining a more uniform molecular order in state caused by existence of microscopic defects and AFLC are being looked for, see for example Refs. Comparison of low frequency typical electrooptic response for regular dashed line and orthoconic solid line antiferroelectric liquid crystals. Felix giving easier the nematic phase. Usefulness of those Fig. Eth ; methods for applications seems to be rather limited. Recently Abdulhalim [14] calculated that having two condition satisfied: The tilt direction in such antiferro- tuned dielectric tensor. Conventional AFLC materials also general formula 1. OAFLC placed between crossed The rigid core of the esters 1 consists of unsubstituted or polarizers behaves as an isotropic medium at zero field different laterally substituted benzene rings joined with [10 â€”12] for the incident light beam orthogonal to the bridge groups X1 and X2. They are usually carboxylic group sample plane. Surface defects are not seen, what generates COO or sometimes methylenoxy group CH2O or a single the excellent true dark state even the sample is rotated under bond. A limited number of structures with a heteroaromatic crossed polarizers. For the creation of chirality chiral by hence, the optimum transmission is obtained. The alcohols usually R or S methylalkanol and R or S - bright state is excellent and even brighter and more 2-trifluoromethyl alkanol are often used. Molecules of homogenous than observed in the regular antiferroelectric. Moreover, experimental measurements see Inukai et al. Methods The compounds were prepared in the same way as it was described in Ref. The spectrophotometer UV â€” vis Varian Cary 3E The antiferroelectric phase in the organosiloxane liquid was used for measurements. Those materials showed was put on the glass plate with homeotropic aligning layer direct transition SmCpanti â€” Iso and the tilt above without covering with another glass plate. A temperature independent of temperature. A movement of the optical axis We have found that high tilted materials without pre- of the AFLC slab affected by an electric field has been transitional effects are possible to create within the studied in birefractive set-up. We have started to investigate, orienting polyimide layers. The cell is assembled using systematically, an influence of the molecular building 2. Recently prepared Packard , a digital oscilloscope HP B, Hewlett homologous series of phenyl biphenylates formulas 4â€” 6 Packard and rotating stage. An optical axis orientation and biphenyl benzoates formula 7 are presented below: Electrooptical measurements have been done in 1. Both layers were rubbed parallely. Results and discussion The high enthalpy of the SmA â€” SmCp transition seems to be a characteristic feature of high tilted synclinic and 3. Characterization of phase transitions anticlinic compounds.

The SmCpanti â€" SmCp transition is hardly of first order with the enthalpy about 80 times lower Temperatures and enthalpies of phase transitions for than observed for the SmA â€" SmCp transition. During cooling a more compared in Table 1. For the others this phase was not has very high melting point and melting enthalpy. The present up to temperature 2 20 8C. Tilted anticlinic phase SmCpanti appears for prepared. The compound 3F6Bi has melting point near room temperature range but its melting point is not so convenient temperature Both of them are strongly first order. Enthalpy of the latter is between 0. The smectic A phase exists in small temperature range of 0. Enthalpies of series 3Hm Bi Table 2. This is on m a little and they are rather high about The typical for low tilted compounds. The enthalpies of the SmCp â€" SmA transitions are the highest for members between 2 and 5. The substitution of benzene ring by fluorine atom in position 2 or 3 decreases all phase transition temperatures, Fig. Diagrams of the phase transition temperatures showing the range of Fig. This result is The rigid core structure stabilizes the anticlinic phase as different from that observed in the compounds with shorter follow: In this case, the enthalpy of transition SmCp â€"SmA depends only a little on the extension 3. Temperature dependence of smectic layer spacing of fluorination. It means that the orthogonal layers are built from range than in n F6Bi Fig. The enthalpies of disordered tilted domains. In the benzoates n F6B fluorinated terminal unit does not depend on spacer length the stability of the SmCp phase is similar as in m: Temperature dependence of optical tilt following way: The temperature dependence of optical tilt is given in Fig. In Table 4 the values: In series n F6B, members with fluorinated unit having four or five carbon atoms show the highest optical tilt. It is smaller for 3F compound with short fluorinated unit than with long one, n F6B 0. Temperature dependence lmax of selective reflec- Fig. Temperature dependence of optical tilt u in homologues series n F6B tion band for compounds 3F6Bi and 3F6B is compared in upon length of fluorinated chain. Both the compounds reflect the light in near ultraviolet Table 4 The comparison of parameters of the smectic layer upon the length of and visible range of spectrum near room temperature. Such strong temperature increase of Arccos Selective reflection strongly depends on the length of fluorinated part of the chain. Their electrooptical properties may be changed and optimized easier by the proper selection of components also. In the case of ferroelectric liquid crystal mixtures, they are usually formulated from achiral synclinic components having smaller viscosity than chiral ones and a small amount of chiral twisting dopant with high spontaneous polarization. Such a way of preparation enables to obtain the composition with low viscosity and with desired spon- taneous polarizations. The limited number of achiral anticlinic structure found until now does not allow developing them in the same way. Multicomponent low melting antiferroelectric mixtures may be formulated mainly from chiral components at this Fig. Comparison of maximum selective reflection upon reduced moment, what yields some problems with preparation of temperature T 2 TC â€" A and the length of fluorinated unit for homologues series n F6Bi. In the case of OAFLCMs it is still more difficult, The member 6F6Bi has shorter pitch than the members with because the known structures with the high tilt are limited to smaller n: The mixture W was the first orthoconic mixture achieving temperature independent 3. The phase transitions and the properties at smectic layer should be adjusted to the half wave condition 40 8C [11] are given in Table 6. In mixtures, the optimum tilt of is easily pounds 4F6Bi 2F and 4FBi 3F are compared at tempera- achieved than in a single compound. The compounds of ture 60 8C and their electrooptical parameters are listed in series n F6Bi and n F6B, described here, are characterized Table 5. Therefore, we transitional effects although their branches are not quite were able to formulate eutectic mixture with melting point symmetrical for opposite driving voltage polarizations. Higher dipole moment along long molecular axis in 4F6Bi 3F is probably responsible for lower threshold and Recently, we prepared many such mixtures [33]. Mixture saturation voltages and shorter response times. WB can be given as an example of the best one at this moment. Their phase sequence and electrooptical properties 3. Multicomponent mixtures are listed in Table 7. Multicomponent mixtures are utilized in displays and The mixture WB exhibits high contrast in the static as devices because they exhibit the antiferroelectric phase at well dynamic transmission mode 70 and , respectively. Surface aligning layers with stronger anchoring energy 60 8C probably should decrease the asymmetry of the electro- Properties at 60 8C 4F6Bi 2F 4FBi 3F optical responses. We are extensively working on improving properties of Tilt angle u 8 45 35 orthoconic mixtures and we hope to present OAFLCMs Threshold voltage V10 V 15 11 operating at lower voltages soon as well as having fully Saturation voltage V90 V 17 Static contrast Dynamic contrast 93 4. Conclusion Table 6 The tilted smectic compounds with antiferroelectric The phase transitions and the properties at 40 8C of mixture W phase OAFLCs existing in a broad temperature range were Properties W found among esters family having partially fluorinated terminal chain. Threshold voltage V10 V 7. It is also Significant higher contrast [34] can be obtained in reflective necessary to develop better aligning materials involving mode. The thickness of reflective cells is only 0. Dynamic responses are asymmetric, rise time ton is about 10 times shorter than fall time toff: Frequency used Hz 0, 1 [3] X. Urruchi, Static contrast R. Saturation voltage V90 V 17 [4] N.

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In surface stabilized cell they are usually optically biaxial, positive liquid crystals, with effective optic axes along the smectic layer normal (parallel to cell plates), while orthoconic antiferroelectrics are uniaxial negative liquid crystals with optic axis perpendicular to the cell glass plates at normal incidence.

Print , 70, str. SI-ID] 2. Grinberg, Marija Vilfan, Rainer Kimmich, "Proton spin-lattice relaxation in a liquid crystal-Aerosil complex above the bulk isotropization temperature", Chem. SI-ID] 3. SI-ID] 4. SI-ID] 5. SI-ID] 6. Giannelis, Alexandros Lappas, "Modified magnetic interactions in hybrid perovskite nanocomposites: SI-ID] 7. SI-ID] 8. SI-ID] 9. SI-ID] Robert Blinc, "Order and disorder in ferroelectrics: Robert Blinc, Valentin V. Vid Bobnar, Adrijan Levstik, C. Bengus, "Magnetic and electrical investigations of Fe[sub] x Co[sub[xB[sub] 15 metallic glasses", Appl. E, Soft matter, vol. Laguta, Maiia Davydovna Glinchuk, I. Nych, "Laser trapping of small colloidal particles in a menatic liquid crystal: Albert Prodan, Herman J. Zadro, "An EPR method for probing surface magnetic fields, dipolar distances, and magnetization fluctuations in single molecule magnets", Spectrochim. Riccardo Rosso, Epifanio G. Virga, Samo Kralj, "Local elastic stability for nematic liquid crystals", Phys. Marija Vilfan, Martin Vuk, "Nuclear spin relaxation of mesogenic fluids in spherical microcavities", J. Marcin Wachowicz, Stefan Jurga, Marija Vilfan, "Collective and local molecular dynamics in the lyotropic mesophases of decylammonium chloride: SI-ID] 1. Orest Jarh, "Kako je nevtron postal samostojen? Orest Jarh, "Odkritje radioaktivnosti", Gea Ljublj. Orest Jarh, "Tri vrste radioaktivnega sevanja", Gea Ljublj. June , , Dubna, Russia, Ferroelectrics, vol. Computational modeling and simulation of materials III: Slovenski kemijski dnevi , Maribor, Biological effects of EMFs: Nonlinear dielectric phenomena in complex liquids: Quasicrystals preparation, properties and applications: A, Materials Research Society symposium proceedings, v. Electronic properties of synthetic nanostructures: Battery and fuel cell materials: Saw-Wai Hla, Herman J. Boswell, "The structure of epitaxially grown silver nanoparticles", V: Miha Humar, Sam A. Swartz, "Influence of anesthesia on skin oxygenatin and effect of topically applied vasodilator", V: Hanover, New Hampshire, September 19thrd,, [S. Stefan Institute,], str. Vth workshop on pore-forming toxins, [Oct] Mainz: Lille, September Laguta, "Origin of giant electrostriction and piezoelectricity in relaxors", V: Konferenca fizikov v osnovnih raziskavah, Cerkno, Program in knjiga povzetkov, Program and abstract book, [S. Craig Bennett, Frank W. July , , Segovia Spain , [S. Program in knjiga povzetkov, Monika Jenko, ur. Ayalasomayajula, "Fluorinated, sulfur containing polymer films: July , , Paris France: Zijlstra, "Non-isotropic distribution of atomic environments in icosahedral quasicrystalsas revealed by NMR", V: Kothe, Diego Frezzato, G. Althoff, Marija Vilfan, Giorgio J. Moro, "Probiung director fluctuations in liquid crystals by transverse nuclear spin relaxation", V: Finkelmann, "Calorimetric study of the isotropic-nematic transition in liquid-crystalline elastomers", V: ICSM book ob abstract: International conference on synthetic materials ICSM Nych, "Unusual laser trapping and manipulation of colloidal particles in a nematic liquid crystal", V: Maksimochkin, Samo Kralj, V. Lukin, "Influence of dimensional factor on phase transitions in liquid crystal emulsions", V:

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USA 9, Dutka F. Selectivity and sensitivity of some thin-layer chromatographic detection systems. New York, Basel References: Ferroelectrics, , Reference: Characterization of reaction products formed during thin-layer chromatographic detection of thiocarbamate herbicides. Structure and Stability of Crystalline C60 n-Pentane clathrate. Solid State Communications 83, References: Synthesis and Phase Behaviuor. Chiral Smectic Side-Chain Copolymers. Pyroelectric Effect And Spontaneous Polarization. Chromatographic Methods for the Determination of Pesticides in Foods. Applied Physics A56, References: Infrared and Raman Spectra of C60 Clathrates. Optical Properties of C60 diethyl ether clathrate single crystals. Deuterium labelled liquid crystalline compounds. Liquid Crystals, 14, IF: Manual of Pesticide Analisys Vol. Structure of polymer networks dispersed in liquid crystals: Liquid Crystals, 17, References: The study of phase transitions in thermotropic liquid crystals of SC Type. Elastic and quasielastic neutron scattering on liquid crystals. Liquid crystal-gel dispersion prepared in the isotrpic phase. Zummer, Taylor and Francis Publisher, London pp Fried, second edition Marcel Dekker Inc. New York, Basel, pp. Liquid Crystals,21, References: Phase diagrams and electro-optical properties of novel ferroelectric mixtures. Structural properties of the ferroelectric liquid crystal mixtures based on the homologous series of alkoxyphenyl alkoxybenzoates Mol. Chemical processes in liquid crystal composite systems containing chlesteryl propionate. Ferroelectric mixtures containing fluorine derivatives. Dielectric and electrooptic studies of novel ferroelectric mixtures. Synthesis and investigation of thermotropic liquid crystals labelled by stable isotopes I. Liquid Crystals 24, 48, K. Pesticides in environmental samples. The study of phase transitions of binary liquid crystalline mixtures. Publications, Switzerland , Reference: Partially deuterated side -chain liquid crystalline monomers and polymers: Characterization and order by 2H NMR. Rotational dynamics of a chiral mesogen by 2H NMR study: Dielectric investigations of a chiral monomer and side chain polymer. Microscopic organization and tilt angle in smectic A and chiral smectic C phases: Unwinding of the ferroelectric chiral helix by high magnetic fileds. Partially deuterated liquid crystal polymers: Bata, The possibility of phase transition temperature shift in some ferroelectric liquid crystalline mixtures, J. Structural characterization of the new polymorphic mesophases formed by bent-core molecules, Liquid Crystals, 29, References: Microwave-assisted deuterium exchange reactions for the preparation of reactive intermediates, Tetrahedron Letters, 43, References: Liquid Crystals 29, 71, E. Synthesis and liquid crystal properties of new banana-shaped cinnamoyl derivatives Liquid Crystals 30, References: Electro-optics of liquid crystals of bent-shape molecules. Light shutters and electro-optical storage devices from antiferroelectric liquid crystals of bent-shape molecules. SPIE, , 76, A. Reversible switching between optically and birefringent states in a bent-core liquid crystal. Deuterium and carbon NMR study of a banana-mesogen: Polymerizable ester-type banana liquid crystals: Ester type banana-shaped liquid crystalline monomers. Synthesis and physical properties. Structure and order of a homologous series of bent-core molecules: A 13C NMR study. Structure property relationship study on new cubane-1,4-dicarboxylic acid derivatives. Conference on Liquid Crystals, Ed. Zmija, 82, J. New liquid crystalline cubane-1,4-dicarboxylic acid derivatives. Structure and property study. Liquid Crystals, 32 2 , 84, D. Thermal Analysis and Calorimetry, 82, 85, G. Microscopic structures of the B7 phase: AFM and electron-microscopy studies. Liquid Crystals, 33, 90, J. Critical behavior at the isotropic-to-nematic phase transition in a bent-core liquid crystal. On the carbon chemical shift tensors of bent-core mesogens. Novel liquid crystalline cuneane-caged derivatives. Structure property relationship study. Liquid Crystals, 33, References: Spectroscopy investigation of ferroelectric liquid crystals composed of banana-shaped achiral molecules. Deuterium NMR evidences of slow dynamics in the nematic phase of a banana-shaped liquid crystal. Ferroelectrics, , References: Intercalated smectic A phase in banana-shaped liquid crystals with carbonate end groups. Chem, 7 10 , References: Giant flexoelectricity of bent-core nematic liquid crystals. Conformations of banana â€”shaped molecules studied by 2H NMR spectroscopy in liquid crystalline solvents, J. B, , References: Thermal analysis of binary liquid crystalline mixtures: Calorimetry, 90 2 , , V. Chem, 8 16 , , D. Polarization splay as the origin of modulation in the B1 and B7 smectic phases of bent-core molecules, Phys. E, 77, , A. Extraordinary properties of nematic phases of bent-core liquid crystals. Electrically tunable color of mixtures of bent-cre and rod-shaped molecules, Adv. Viscosities of a bent-core nematic liquid crystal, Liquid Crystals, 35 2 ,

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XV Liquid Crystal Conference. Zakopane, Poland, October Development of these displays has been precluded by the lack of suitable materials Antiferroelectric liquid crystal.

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