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Extrait de la mise à jour n°6/2009

Part of the updating n°6/2009

A - ETAT VITREUX

AA - Vitrification - Structure

096aa019
Sen S., Gjersing E.L., Maekawa H., Noda Y., Ando M., Tansho M., Shimizu T., Klyuev V.P., Pevzner B.Z.
LA STRUCTURE ATOMIQUE DES VERRES DE TYPES BEO-B2O3-AL2O3 : SPECTROSCOPIE RMN MAS (11)B ET (27)AL À 21.8 TESLA
ATOMIC STRUCTURE OF BEO-B2O3-AL2O3 GLASSES: (11)B AND (27)AL MAS NMR SPECTROSCOPY AT 21·8 TESLA
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 262-266, 4 fig., 1 tab., 19 ref.
2009
The structures of BeO-Al2O3-B2O3 glasses with a range of BeO/Al2O3 ratios at fixed BeO/B2O3 ratios of 1:1·5 and 1:1 have been investigated using (11)B and (27)Al MAS NMR spectroscopy at ultrahigh magnetic field (21·8 T). These (11)B and (27)Al MAS NMR spectra are characterised by remarkably superior resolution and thus provide more accurate results for B and Al speciation compared to the low field (11·7 T) NMR results reported in previous studies. All glasses are characterised by a BO3:BO4 ratio of ~86:14, and approximately 70 % of all Al atoms are found to be five- and six-fold coordinated. Such large concentrations of BO3, AlO5 and AlO6 species are consistent with the highest field strength of Be among all alkali and alkaline earth metals. The compositional variation of cation speciation, when combined with bond valence calculations, indicates that most of the oxygens in these glasses would have to be 3-coordinated and shared between BIII-AlVI-BeVI, BIII-BeVI-BeVI, BIV-AlIV-BeVI, AlIV-AlIV-BeVI or AlIV-AlV-BeVI coordination polyhedra. This bonding scenario would be expected to give rise to a dense structure with increased rigidity, consistent with the remarkably high Tg values reported in the literature for these glasses.
ATOME. STRUCTURE. VERRE ALUMINOBORATE. ALCALINOTERREUX. RMN MAS. BERYLLIUM
ATOM. STRUCTURE. ALUMINOBORATE GLASS. ALKALINE EARTH. MAS NMR. BERYLLIUM

096aa020
Segawa H., Yano T., Shibata S.
UNE ÉTUDE AU MOYEN D'UNE SPECTROSCOPIE DE PHOTOÉLECTRONS X DE L'ÉNERGIE DE LIAISON O1S DE VERRES BORATES AU SODIUM
AN XPS STUDY OF THE O1S BINDING ENERGY OF SODIUM BORATE GLASSES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 79-84, 8 fig., 1 tab., 32 ref.
2009
The photoelectron spectra of the oxygen 1s (O1s) orbital of xNa2O.(100-x)B2O3(0≤x≤35) glasses have been investigated by x-ray photoelectron spectroscopy (XPS). In the O1s photoelectron spectra, only one broad band was observed and the binding energy shifted to lower energy with increasing Na2O content. The spectrum of each sodium borate glass was deconvoluted into three bands, assigned to B3-Ø-B3, B3-Ø-B4 and B4-Ø-B4 (B3 or B4 indicates three- or four-coordinated boron). The ratio of these three types of oxygen atoms was calculated from structural group information based on previous NMR data. The O1s binding energies of the three types of oxygen are in the order: B3-Ø-B3≈B3-Ø-B4>B4-Ø-B4. It was found that B4-Ø-B4 has more negative charge than the other oxygens. The B4-Ø-B4 content is negligibly small for less than 20 mol% Na2O, but for larger Na2O content a small amount of B4-Ø-B4 was observed. The formation of oxygen with high negative charge suggests that the borate anomaly occurs at a composition of about 20 mol% Na2O.
ENERGIE LIAISON. BORAX. VERRE BORATE. SPECTRO PHOTOELECTRON. OXYDE ALCALIN. OXYGENE. LIAISON STRUCTURE. METAL. BASICITE OPTIQUE
BOND ENERGY. BORAX. BORATE GLASS. PHOTOELECTRON SPECTROSCOPY. ALKALI OXIDE. OXYGEN. BOND STRUCTURE. METAL. OPTICAL BASICITY

096aa021
Mullenbach T., Franke M., Ramm A., Betzen A.R., Kapoor S., Lower N., Munhollon T., Berman M., Affatigato M., Feller S.A.
CARACTÉRISATION STRUCTURELLE DES VERRES BOROSILICATES AUX ALCALINOTERREUX À TRAVERS LA MODÉLISATION DE LEUR DENSITÉ
STRUCTURAL CHARACTERISATION OF ALKALINE EARTH BOROSILICATE GLASSES THROUGH DENSITY MODELLING
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 89-94, 4 fig., 6 tab., 17 ref.
2009
The densities of nearly 120 alkaline earth borosilicate glasses (MO-B2O3-SiO2, where M is Ba or Ca) were determined using pycnometry. These results were used to make inferences about the underlying atomic level structure of alkaline earth borosilicate glasses. Previously Dell, Bray and Xiao produced structural models of alkali borosilicates where the glass is composed of two micro-phase separated borate and silicate networks, in which the sharing of the alkali oxide modifier between the two networks depends on the relative amounts of borate structural units. Density models were created that utilised both the Dell model and simple proportional sharing. The predictions of these models were compared with the experimental data, showing that the proportional sharing model works well, and suggesting that the Dell hypotheses overestimate the amount of alkaline earth oxide modifier associated with the borate network.
VERRE BOROSILICATE. DENSITE. STRUCTURE. ALCALINOTERREUX. SIMULATION. PREVISION
BOROSILICATE GLASS. DENSITY. STRUCTURE. ALKALINE EARTH. SIMULATION. PREDICTION

096aa022
Dimitriev Y., Iordanova R.
VERRES MOLYBDATES NON TRADITIONNELS
NON-TRADITIONAL MOLYBDATE GLASSES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 123-132, 8 fig., 3 tab., 133 ref.
2009
This review paper deals with the glass formation in molybdate systems and their structure. The molybdate glasses have been mainly of academic interest as model objects in relation to the fundamental questions of the glassy state. On the other hand, these glasses posses a variety of specific properties, and now some of them are potential candidates for technological applications: amorphous semiconductors, waste storage, infrared transmission components, nonlinear optical devices, sensors, reflecting windows, etc. The purpose of this paper is to present a survey of recent results obtained by our research team and by other authors. The main difficulties in the preparation of molybdate glasses are connected with the high crystallisation tendency of the compositions because MoO3 is not able to form a glass itself at slow cooling rates. Molybdate glasses have been obtained by our team introducing different kind of components: modifiers (MeO, MeO), glass network formers (B2O3), transition metal oxides (V2O5, Fe2O3, WO3, CuO), heavy metal oxides (Bi2O3, PbO), rare earth oxides (La2O3, Nd2O3, Pr2O3, Sm2O3, Y2O3). The molybdate layer structure is destroyed during vitrification (changes of the middle range order) and mainly octahedral units, which are corner or edge shared, build up the network of the glass compositions with high MoO3 content. Partial MoO6 to MoO4 transformations take place (changes in the short range order). When the amount of MoO4 tetrahedra without oxygen bridging bonds between them reaches a critical concentration, the glass formation ability drastically deteriorates. The Zachariasen's rules about participation of the polyhedra with small coordination number (tetrahedra) are not satisfied for these glasses. The glass structure was compared with that of crystalline phases separated during the heat treatment of the amorphous samples or by the obtained crystals from supercooled melts. The achieved results are directed for the development of novel low melting glasses containing sufficient amount of transition or rare earth metal ions.
VERRE MOLYBDATE. DIAGRAMME PHASES. STRUCTURE. OXYGENE PONTANT
MOLYBDATE GLASS. PHASE DIAGRAM. STRUCTURE. BRIDGING OXYGEN

AB - Physicochimie

096ab013
Christensen R., Byer J., Kaufmann T., Martin S.W.
LES RELATIONS ENTRE LA STRUCTURE ET LES PROPRIÉTÉS DANS LES MATIÈRES VITRIFIABLES MIXÉES DE TYPE NA2O-B2O3-P2O5
STRUCTURE-PROPERTY RELATIONSHIPS IN THE MIXED GLASS FORMER SYSTEM NA2O-B2O3-P2O5
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 237-242, 7 fig., 12 ref.
2009
The structures and properties of glasses in the mixed glass former (MGF) system Na2O-B2O3-P2O5 have been investigated. Specifically, the atomic level structures of these glasses have been investigated using IR and Raman vibrational spectroscopies and the volume (density) and glass transition temperature have been studied as representative and important physical and thermal properties. These glasses are from one of the mixed glass former glass (MGFG) systems that exhibit significantly higher alkali ion (Na^+) conductivity, and as such become attractive candidates as solid electrolytes in next generation solid state batteries. In this study, these glasses were found to also exhibit a significant mixed glass former effect (MGFE) in the density and glass transition temperature, where a maximum above the simple mixing rule behaviour was observed near the mid-composition range. The IR and Raman spectra, while not completely evaluated in this first study of these glasses, do show the appearance of vibrational bands that also maximise in intensity near the mid-composition range in these glasses. Both low (35 mol%) and mid (50 mol%) alkali oxide series were investigated, and the MGFE appears to be strongest for the low alkali series, suggesting that the MGFE likely arises from new MGF structures, whose changes appear to be greatest for the higher fraction of glass formers in the system.
VERRE BOROPHOSPHATE. SODIUM. FORMATEUR VERRE. VOLUME SPECIFIQUE. DENSITE. PROPR THERMIQUE. TEMP TRANSFORMATION. OXYDE ALCALIN. CONDUCT IONIQUE. STRUCTURE. PROPR PHYSIQUE. RAYON INFRAROUGE. SPECTRE VIBRATION. SPECTRE RAMAN
BOROPHOSPHATE GLASS. SODIUM. GLASS FORMER. SPECIFIC VOLUME. DENSITY. THERMAL PROPERTY. TRANSFORMATION POINT. ALKALI OXIDE. IONIC CONDUCTIVITY. STRUCTURE. PHYSICAL PROPERTY. INFRARED RAY. VIBRATION SPECTRUM. RAMAN SPECTRUM

096ab014
Schmidl G., Muller D., Triebel W., Paa W.
MESURES RAPIDES DE LA DISTRIBUTION DE FLUORINE DANS LA SILICE FONDUE DOPÉE AU MOYEN D'UNE DIFFUSION RAMAN PULSÉE
FAST MEASUREMENT OF FLUORINE DISTRIBUTION IN DOPED FUSED SILICA BY PULSED RAMAN SCATTERING
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 267-270, 4 fig., 14 ref.
2009
We present short time measurements to determine the distribution of fluorine dopant in extended fused silica samples. These measurements are based on pulsed Raman spectroscopy. Our investigations are starting point for a further development of a nondestructive optical in situ method of fluorine detection. A KrF excimer laser (248 nm) of narrow bandwidth was used to excite the vibrational transitions of Si-F (940 cm(–1)) and Si-O groups (809 cm(–1)). The fluorine concentration at a reference sample was determined by WDX-analysis to calibrate the intensity ratio of the Si-F and the Si-O vibrational bands. We investigated extended dry fused silica samples with a known fluorine concentration ≤10000 wt ppm. The detection limit amounts to 2000 wt ppm.
FLUOR. VERRE SILICE. MESURE. SPECTRE RAMAN. REPARTITION. REFRACTION. OPTIQUE
FLUORINE. SILICA GLASS. MEASURE. RAMAN SPECTRUM. DISTRIBUTION. REFRACTION. OPTICS

096ab015
Schubert D.M., Knobler C.B.
ETUDES RÉCENTES D'ANIONS POLYBORATES
RECENT STUDIES OF POLYBORATE ANIONS
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 71-78, 14 fig., 47 ref.
2009
Recent work in our laboratory has resulted in the synthesis and structural characterisation of crystalline compounds containing a number of unusual isolated borate anions associated with non-metal cations. These include a new example of the triborate monoanion, B3O3(OH)4–, a series of compounds containing the pentaborate monoanion, B5O6(OH)4–, and several larger polyborate anions. A new heptaborate, B7O9(OH)5(2–), is an isomer of another recently reported anion. An unusual octaborate, B8O10(OH)62–, was characterised, as well as two examples of a nonaborate anion, B9O12(OH)6(3–). Several new borates containing coordinative covalent B-N bonds were also characterised. These include the organoborate C8H16(NH2)2B10O12(OH)8(2–), composed of two pentaborate units covalently linked by a central diamino-octane moiety, and related B-N bond containing zwitterions, B5O6(OH)4NH2CnH2nNH3 (n=5, 6).
BORATE. BORE. ANION. LIAISON STRUCTURE. OXYGENE. HYDROGENE. VERRE BORATE
BORATE. BORON. ANION. BOND STRUCTURE. OXYGEN. HYDROGEN. BORATE GLASS

096ab016
Sugata S., Tawarayama H., Kawazoe H., Masuno A., Inoue H.
DIFFUSION ANORMALE DE L'HYDROGÈNE DANS LES VERRES DE PHOSPHATE AU TUNGSTÈNE
ANOMALOUS DIFFUSION OF HYDROGEN IN TUNGSTEN PHOSPHATE GLASSES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 98-104, 13 fig., 1 tab., 8 ref.
2009
Tungsten phosphate glasses with the composition P05/2-W03-Nb05/2-MOx (M=Li, Na, K, or Ba) were prepared. The glasses were coloured dark blue from the Pd-coated surface by heat treatment in a hydrogen atmosphere. The optical absorption was attributed to the reduced tungsten ions and abbreviated to (W(5+)/H+). Simultaneously with the colouration, OH groups were also introduced in the outer surface layer. The apparent diffusion coefficients derived from the depth profiles of W(5+) and OH absorptions in 30P05/2.10W03.25Nb05/2.35Na01/2 glass at 500 °C were 2·9×10(–6) and 1·3×10(–8) cm2/s, respectively. The latter were about two orders of magnitude lower than the former. The evaluated activation energies of the reaction forming (W(5+)/H+) pair, 66 kJ/mol, were lower than that forming OH groups, 95 kJ/mol for that glass. We also found the composition dependence of the diffusion coefficient and the activation energy. Both the diffusion coefficients calculated from W(5+) and OH absorption decreased with an increase of the ionic radius of alkali ions in the glasses, while the activation energies increased. Moreover, the diffusion coefficients derived from W(5+) absorptions decreased with an increase of Na01/2 contents. These results suggest that migration ability of the hydrogen was strongly correlated to the modifier ions in the glasses.
TUNGSTENE. VERRE PHOSPHATE. HYDROGENE. DIFFUSION. HYDROXYDE TRANSMISSION OPTIQUE. TRANSMISSION IR. TEMP INFLUENCE
TUNGSTEN. PHOSPHATE GLASS. HYDROGEN. DIFFUSION. HYDROXIDE OPTICAL TRANSMISSION. INFRARED TRANSMISSION. TEMPERATURE INFLUENCE

096ab017
Bazan J.C., Sola M., Janyistabro C.
DÉTERMINATION ÉLECTROCHIMIQUE DU COEFFICIENT DE DIFFUSION DES IONS ARGENT DANS LES VERRES SILICOSODOCALCIQUES
ELECTROCHEMICAL DETERMINATION OF THE DIFFUSION COEFFICIENT OF SILVER IONS IN SODA-LIME-SILICA GLASS
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 109-112, 6 fig., 1 tab., 9 ref.
2009
A new technique for determining the diffusion coefficient of silver ions in glass, based on obtaining limiting diffusion current densities by dc electrolysis in an electrochemical cell, is presented. Silver iodide is used as a filter allowing only the movement of silver ions to the electrodes. Thus, by direct application of Fick's First Law the limiting current is related to the diffusion coefficient and concentration of silver ions. The data obtained are in agreement with literature data.
DIFFUSION. VERRE SILICOSODOCALC. ARGENT. ELECTROLYSE. VOLTAGE. SODIUM
DIFFUSION. SODA LIME GLASS. SILVER. ELECTROLYSIS. VOLTAGE. SODIUM

B - PROPRIETES DU VERRE ET LEUR MESURE

BA - Généralités

096ba005
Subcik J., Koudelka L., Mosner P., Gregora I., Montagne L., Revel B.
VERRE BOROPHOSPHATES AU ZINC DOPÉ AU TUNGSTÈNE
W03-DOPED ZINC BOROPHOSPHATE GLASSES
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 243-248, 7 fig., 2 tab., 28 ref.
2009
The effect of W03 on the properties and structure of zinc borophosphate glasses was investigated and the role of W03 in these glasses was considered. Homogeneous glasses of the composition (100-x)[0·5Zn0.0·1B203.0-4P205].xW03 were obtained within the concentration range of x=0-40 mol% W03, whereas glasses with x=45 and 50 contain microinclusions of beta-W03. Their glass transition temperature increases with increasing W03 content, whereas the crystallisation temperature, and the thermal stability of the glasses reveal a maximum at ~10-15 mol% W03. The structure of the glasses was studied by Raman and infrared spectroscopy, combined with (31)P and (11)B MAS NMR spectroscopy. The Raman spectra are characterised by a strongly polarised band at 941-930 cm(–1) and a depolarised band at 832-809 cm(–1), ascribed to vibrations of W06 and W-O-W bonds, respectively. Compositional changes in the (11)B MAS NMR spectra reveal a partial conversion of B04 to B03 units with increasing W03 content, and the replacement of B-O-P bridges by B-O-W bridges.
VERRE BOROPHOSPHATE. TUNGSTENE. STRUCTURE. PROPR THERMIQUE. RAYON INFRAROUGE. SPECTRE RAMAN. DURABILITE. PROPR PHYSIQUE. INCLUSION. TEMP CRISTALLISATION. TEMP TRANSFORMATION
BOROPHOSPHATE GLASS. TUNGSTEN. STRUCTURE. THERMAL PROPERTY. INFRARED RAY. RAMAN SPECTRUM. DURABILITY. PHYSICAL PROPERTY. INCLUSION. CRYSTALLISATION TEMPERATURE. TRANSFORMATION POINT

096ba006
Kajinami A., Matsuura H., Deki S., Fujiwara S., Umesaki N.
MEASURES RAYONS X IN SITU D'UN MÉTAL DE TRANSITION DANS DES VERRES BORATES À HAUTE TEMPÉRATURE
IN SITU XAFS MEASUREMENT OF TRANSITION METAL IN BORATE GLASS AT HIGH TEMPERATURE
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 253-256, 6 fig., 15 ref.
2009
The behaviour of transition metal ions in borate glass at high temperature was studied by in situ XAFS measurements. The XAFS measurements for manganese borate glass, (MnO)0·21(B203)0·79, and cobalt borate glass, (CoO)0·25(B203)0·75, from 298 to 1373 K were performed to examine the variations of short range structure and valence of the transition metal ions with temperature. It was found that cobalt ions in borate glass change to cobalt metal at 1273 K under helium, while an obvious valence change was not observed for manganese ions in borate glass at 1273 K. The effect of atmosphere on the valence of cobalt ions is also discussed.
METAL. VALENCE. ION. MANGANESE. COBALT. STRUCTURE. VERRE BORATE. NITRURE B. HELIUM. RAYON X
METAL. VALENCY. ION. MANGANESE. COBALT. STRUCTURE. BORATE GLASS. BORON NITRIDE. HELIUM. X RAY

BB - Contrôle, essai, analyse, norme

096bb001
Gutierrez P., Marnissi J., Filhol A.
LA RÉSISTANCE DES ARTICLES DE TABLE À L'IMPACT
TABLEWARE IMPACT RESISTANCE
English/French
ICV – F- (2009), 1026, p. 72-75, 4 fig., 3 tab., 4 ref/ICV – F- (2009), 1026, p. 30-33, 4 fig., 3 tab., 4 ref.
2009

Ceramics products such as tableware are exposed to impacts and they must be able to resist to repeated impacts. In 2000, a testing method was implemented: NF EN 12980. The SFC has conducted a round-robin test in which 6 companies carried out test on a some set of sample with a similar test procedure on their own pendulum testers.
VAISSELLE. RESISTANCE CHOC. ESSAI INTERLABO. ESSAI. CERAMIQUE
TABLEWARE. SHOCK RESISTANCE. ROUND ROBIN TEST. CERAMIC

BC - Viscosité, dilatation, propriétés mécaniques et thermiques

096bc014
Yamashita N., Suetsugu T., Einishi T., Fukumi K., Kitamura N., Nishii J.
PROPRIÉTÉS THERMIQUES ET OPTIQUES DE VERRES DE TYPE BI2O3-GEO2-B2O3
THERMAL AND OPTICAL PROPERTIES OF BI2O3-GEO2-B2O3 GLASSES
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 257-261, 6 fig., 1 tab., 16 ref.
2009
The thermal and optical properties of Bi2O3-GeO2-B2O3 glasses have been studied. The glass transition and deformation temperatures have a maximum at a Bi2O3 content of 20 mol%. The molar refraction shows additivity with composition, decreases linearly with decreasing Bi2O3 content and does not depend on the B2O3/GeO2 ratio. Colourless glasses were obtained in a low Bi2O3, high GeO2 region of composition, as expected from electronegativity. Raman scattering spectroscopy showed that the glass structure depends on the Bi2O3/B2O3 ratio and on GeO2 content. By a glass imprinting method, a one-dimensional periodic pattern with a period of 500 nm was successfully fabricated on the glass surface.
PROPR THERMIQUE. PROPR OPTIQUE. TEMP TRANSFORMATION. REFRACTION MOLAIRE. STRUCTURE. BISMUTH. GERMANIUM. VERRE BORATE. VERRE GERMANATE. BORE
THERMAL PROPERTY. OPTICAL PROPERTY. TRANSFORMATION POINT. MOLAR REFRACTION. STRUCTURE. BISMUTH. GERMANIUM. BORATE GLASS. GERMANATE GLASS. BORON

096bc015
Kawashima M., Matsuda Y., Fukawa Y., Kodama M., Kojima S.
PROPRIÉTÉS VIBRATOIRES ET ÉLASTIQUES DES VERRES DE BORATE AU POTASSIUM
VIBRATIONAL AND ELASTIC PROPERTIES OF POTASSIUM BORATE GLASSES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 95-97, 6 fig., 8 ref.
2009
Potassium borate glasses, xK2O.(100–x)B2O3 ($2 \leq x \leq 34$), have been investigated by Raman spectroscopy. We have analysed the three vibrational peaks at 805, 775 and 750 cm(–1) in order to study the changes of structural groups. This shows that for low K2O content, one 3-fold coordinated boron in each boroxol ring transforms into a 4-fold coordinated boron. Then from x=20 mol% K2O, a second 3-fold coordinated boron in the ring transforms into a 4-fold coordinated boron. We have also investigated the low frequency boson peak by Raman scattering. The observed frequency of the boson peak increases as the K2O content increases. From Raman scattering and sound velocity data, it is concluded that potassium borate glasses show a linear correlation between the boson peak frequency and the sound velocity.
POTASSIUM. VERRE BORATE. SPECTRE VIBRATION. PROPR MECANIQUE. ELASTICITE. BORE. SPECTRE RAMAN. PROPAGATION ONDE ACOUS. TRANSFORMATION STRUC
POTASSIUM. BORATE GLASS. VIBRATION SPECTRUM. MECHANICAL PROPERTY. ELASTICITY. BORON. RAMAN SPECTRUM. SOUND WAVE PROPAGATION. STRUCTURAL CHANGE

096bc016
Jensen M., Smedskjaer M.M., Estrup M., Kristjansson M., Lonnroth N., Yue Y.Z.
DURETÉ DES VITROCÉRAMIQUES DE BASALTE
HARDNESS OF BASALTIC GLASS-CERAMICS
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 189-195, 9 fig., 16 ref.
2009
The dependence of the hardness of basaltic glass-ceramics on their degree of crystallisation has been explored by means of differential scanning calorimetry, optical microscopy, x-ray diffraction, and Vickers indentation. Different degrees of crystallisation in the basaltic glasses were achieved by varying the temperature of heat treatment. The predominant crystalline phase in the glass was identified as augite. It was found that the hardness of the glass phase decreased slightly with an increase in the degree of crystallisation, while that of the augite phase drastically decreased.
VITROCERAMIQUE. DURETE. BASALTE. CRISTALLISATION. TRAIT THERMIQUE. TEMP INFLUENCE
GLASS CERAMICS. HARDNESS. BASALT. CRYSTALLISATION. HEAT TREATMENT. TEMPERATURE INFLUENCE

BD - Propriétés optiques

096bd014
Dorosz D., Zajac A., Swiderski J., Reben M.
EFFET DU DOPAGE AUX TERRES RARES SUR LES PROPRIÉTÉS THERMIQUES ET OPTIQUES DES VERRES ALUMINOSILICATES À FAIBLE TAUX DE SILICE
EFFECT OF RARE EARTH DOPING ON THERMAL AND OPTICAL PROPERTIES OF LOW SILICA ALUMINOSILICATE GLASSES
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 206-210, 10 fig., 3 tab., 16 ref.
2009
Aluminosilicate glasses with low silica (25 mol%) content possess very good optical, thermal and mechanical properties. In addition they have high solubilities for rare earth elements. The aim of the study is to present the influence of rare earth doping on thermal and, consequentially, optical properties of low silica aluminosilicate glasses. In this paper the thermochemistry of low silica aluminosilicate glasses is investigated. The amorphous state of the glass structure and the course of the phase transformation during heating were investigated by DTA/DSC and XRD. Correlations between glass composition and the influence of RE on thermal properties were found. Luminescence spectra from RE ions embedded in a low silica aluminosilicate glass host were measured at room temperature. The substantial influence of the concentration of RE ions on luminescence and lifetime of excited states are discussed. Double clad and multicore optical fibres doped with Nd2O3 (1 mol%) were manufactured using the crucible and rod in tube methods.
VERRE ALUMINOSILICATE. TERRE RARE. PROPR THERMIQUE. PROPR OPTIQUE. ATD. FIBRE OPTIQUE
ALUMINOSILICATE GLASS. RARE EARTH. THERMAL PROPERTY. OPTICAL PROPERTY. DIFF THERMAL ANALYSIS. OPTICAL FIBER

096bd015
Erwin Desa J.A., Vaz W.A., De Souza B.L., Singh M.
PROPRIÉTÉS OPTIQUES DES IONS PRASEODYME ET NEODYME DANS LES VERRES BORATES
OPTICAL PROPERTIES OF PR AND ND IONS IN A BORATE GLASS
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 230-232, 7 fig., 1 tab., 10 ref.
2009
A set of five borate glasses containing oxides of praseodymium and neodymium have been prepared with several relative molar ratios of Pr and Nd. FTIR measurements showed the presence of the B-O stretching mode in BO4 tetrahedra at 900 cm-1, as well as the B-Ô-B bending mode at 700 cm(-1) in the glasses. UV-visible absorption spectra were measured and found to be due to the 4f electronic transitions of the Pr and Nd ions. These absorption peaks were only weakly linked to their structural neighbourhoods, as evidenced by the compositionally scaled patterns showing very good agreement, in peak wavelengths, with the measured data in these glasses as well as in the equivalent glasses with phosphate as the host matrix. However, the intensities of Nd absorption peaks are observed to be enhanced by the presence of Pr ions in these glasses. Excitation at 445 nm of the luminescent states of Nd and Pr yielded emission data in the range 800 nm to 950 nm and lifetimes between 1·094 µs and 1·225 µs, indicating that the local structural environment of the rare earth ions does not greatly affect these states.
VERRE BORATE. NEODYME. PRASEODYME. PROPR OPTIQUE. SPECTRE ABSORPTION. LUMINESCENCE
BORATE GLASS. NEODYMIUM. PRASEODYMIUM. OPTICAL PROPERTY. ABSORPTION SPECTRUM. LUMINESCENCE

096bd016
Fujinaka E., Daiko Y., Mineshige A., Kobune M., Yazawa T., Okajima T., Jin T.
PROPRIÉTÉS LUMINESCENTES DE YBO3:EU(3+) CRISTALLISÉ À PARTIR DE VERRES BOROSILICATES
LUMINESCENCE PROPERTIES OF YBO3:EU(3+) CRYSTALLISED FROM BOROSILICATE GLASS
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 233-235, 6 fig., 11 ref.
2009
Nanocrystalline YBO3:Eu(3+) dispersed glasses were prepared utilising the spinodal-type phase separation of Na2O-B2O3-SiO2 glass. The YBO3:Eu(3+) crystals were selectively precipitated inside the Na2O-B2O3 phase after heat treatment of the obtained glasses above 800 °C, and the size of which was estimated to be around 15 nm by use of the Scherrer equation. The local structure around Eu(3+) ions was estimated from extended x-ray absorption fine structure results using synchrotron radiation. The formation of YBO3:Eu(3+) in the glasses, which is strongly related to the emission properties, was found to be affected by the addition of a small amount of Al2O3.
VERRE BOROSILICATE. LUMINESCENCE. YTTERBIUM. VERRE LUMINESCENT. SEPARATION PHASE
BOROSILICATE GLASS. LUMINESCENCE. YTTERBIUM. LUMINESCENT GLASS. PHASE SEPARATION

096bd017
Senthil Murugan G., Ohishi Y.
LES PROPRIÉTÉS OPTIQUES NON LINÉAIRES DES VERRES TELLURITES AVEC DES BANDES RAMAN ULTRA LARGES
OPTICAL NONLINEARITIES OF TELLURITE GLASSES WITH ULTRAWIDE RAMAN BANDS
English

Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 119-122, 4 fig., 1 tab., 10 ref.
2009
Many multicomponent tellurite based glass systems containing heavy metal oxides, alkaline earth oxides and P2O5 with ultrawide Raman bands promising for Raman amplifiers have been designed and fabricated. The third order nonlinear optical susceptibility (x(3)) is one of the key parameters deciding the Raman gain coefficient and is also useful for many optical processes including optical switching. Therefore, it is very important to have an estimate of the value of x(3) for this new category of glass compositions. x(3) of the above mentioned tellurite based glass systems have been measured using the third harmonic generation (THG) and are discussed in this paper. The relation between linear refractive index and x(3) is also discussed briefly. The tellurite glasses fabricated in the present study have x(3) values as high as 225×10(–14) esu, whereas x(3) of silica glass is 2·8×10(–14) esu.
OPTIQUE NON LINEAIRE. VERRE TELLURITE. PROPR OPTIQUE
NON LINEAR OPTICS. TELLURITE GLASS. OPTICAL PROPERTY

096bd018
Sabah Abdulah S., Saeed N.M.
DÉVELOPPEMENT DE PROPRIÉTÉS OPTIQUES POUR UN MATÉRIAU OPTIQUE UTILISANT LA TECHNIQUE D'ADAPTATION D'INDICE
OPTICAL PROPERTIES DEVELOPMENT FOR SOME OPTICAL MATERIAL USING INDEX MATCHING TECHNIQUE
English
Atti. Fond. G. Ronchi –I- 63(2008), 6, p. 821-830, 8 fig., 7 ref.
2009
In this work the optical properties of Aerogel have been studied. It was noticed that by immersing the Aerogel samples of 1 mm thickness into CCl4 solution, its optical transparency can be modified from opaque to good transparency. The Aerogel was doped with two types of laser dyes from xanthenes family (Rhodamine 101 & Rhodamine 6G). The doped Aerogel samples were pumped by 531.5 nm green laser source. Their absorption and fluorescence spectra were recorded and the possibility of using them as solid state dye laser active media was discussed.
PROPR OPTIQUE. AEROGEL
OPTICAL PROPERTY. AEROGEL

096bd019
Muralidharan M.N., Rasmitha C.A., Ratheesh R.
PHOTOLUMINESCENCE ET ÉTUDES AU MOYEN DE LA SPECTROSCOPIE INFRAROUGE À TRANSFORMÉE DE FOURIER DE XEROGELS ET D'AÉROGELS DE SILICE PURE ET DE SILICE DOPÉE AUX TERRES RARES
PHOTOLUMINESCENCE AND FTIR STUDIES OF PURE AND RARE EARTH DOPED SILICA XEROGELS AND AEROGELS
(English)
J. Porous Mater. –USA- 16(2009), 6, p. 635-640, 8 fig., 24 ref.
2009
The luminescence properties of silica xerogels and aerogels have been studied using PL spectroscopy. Both silica xerogels and aerogels exhibit photoluminescence in the visible region when excited with UV radiation. The luminescence observed in xerogels and aerogels is attributed due to defect centers. Silica aerogels exhibit better photoluminescence than xerogels due to the increase in defect sites. The incorporation of rare earth ions (La(3+), Nd(3+)and Sm(3+)) enhanced the luminescence of both silica xerogels and aerogels. La(3+) shows least and Nd(3+) shows maximum enhancement. Increase in the concentration of Nd(3+) resulted in an increase in the luminescence intensity. The change in the environment of the defect centers due to the incorporation of rare earth ions and the superposition of 4f-f transitions of rare earths are considered as the reasons for the luminescence enhancement.
PHOTOMUMINESCENCE. SILICE. AEROGEL. XEROGEL. TERRE RARE. PROPR OPTIQUE. NEODYME
PHOTOLUMINESCENCE. SILICA. AEROGEL. XEROGEL. RARE EARTH. OPTICAL PROPERTY. NEODYMIUM

C - MATIERES PREMIERES ET MELANGE VITRIFIABLE

096c008
Doweidar H., El-Damrawi G., El-Egili K., Moustafa Y.M., Ramadan R.M., Abdelghany M., Kamal M.
LES CENDRES DE LA PAILLE DE RIZ COMME MATIÈRES PREMIÈRES POUR LA PRODUCTION DU VERRE
RICE STRAW ASH AS A RAW MATERIAL FOR GLASS PRODUCTION
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 196-202, 6 fig., 7 tab., 15 ref.
2009
Ashes produced from rice straw and husk originating from the Nile delta can be used to produce high quality glasses. Washed quartz powder and different types of ash were used to produce Na20-Si02 and Na20-Ca0-Al203-Si02 glasses. Ash constituents were explored using EDAX. Both straw and husk ashes have appreciable silica contents in addition to various oxides that are quite useful in glass production. Colourless or coloured glasses can be obtained, depending on the type of ash. Physical properties such as density, Vickers hardness, electric conduction and transmission in the ultraviolet-vis and infrared regions were investigated. Differences in properties between the glasses obtained by using quartz powder and ash are correlated with the ash composition.
MATIERE PREMIERE. CENDRE. SILICE. OXYDE NA. PROPRIETE
RAW MATERIAL. ASH. SILICA. SODIUM OXIDE. PROPERTY

096c009
ICV
L'INDUSTRIE RÉFRACTAIRE EUROPÉENNE ET MONDIALE
THE EUROPEAN AND INTERNATIONAL REFRACTORY INDUSTRY
English
Ind. Ceram. Verriere –F- (2009), 1025, p.75-77, 3 fig.
2009
European and International Refractories Industry: a market and technology report (published November 2007) is an in-depth study of the current and future refractories industry, providing comprehensive data on production, consumption, imports and exports, growth rates, etc. for Europe and other geographic regions.
REFRACTAIRE. ECONOMIE
REFRACTORY. ECONOMY

096c010
Glass Machinery Plants & Accessories
VIDROMECANICA : MODERNISATION, MISE À NIVEAU ET NOUVELLES USINES
VIDROMECANICA: MODERNIZATION, UPGRADES AND NEW PLANTS
English
Glass Machinery –I- 22(2009), 5, Sept.-Oct., p. 33-35, 4 fig.
2009
Experience is fundamental in the construction of equipment and plants for the hollow glass industry. With the great number and variety of products, this sector is one that requires specific solutions, especially with regards to the raw material used, its preparation and transport. In this article, Vidromecanica gives us an idea of how it responds to its clients needs with new or renovated machinery.
VERRE CREUX. MATIERE PREMIERE. RECYCLAGE
HOLLOW WARE. RAW MATERIAL. RECYCLING

E - MATERIAUX REFRACTAIRES

096e003
Schlegel E.
EVOLUTION DES DIAGRAMMES DE PHASES CONCERNANT LA RÉSISTANCE À LA CORROSION DES MATÉRIAUX DE CONSTRUCTION RÉFRACTAIRES DUE AUX ALCALINS. PARTIE 2
EVALUATION OF PHASE DIAGRAMS REGARDING ALKALI CORROSION RESISTANCE OF REFRACTORY CONSTRUCTION MATERIALS. PART 2
Auswertung von Phasendiagrammen hinsichtlich der Alkalikorrosionsbestandigkeit feuerfester Baustoffe, Teil 2
German
Keramische Zeitschrift –D- 61(2009), 5, p. 266-, 268-271, 5 fig., 7 tab., 9 ref.
2009
The corrosive action of salts on refractory oxides is studied on the basis of unitary and multi-component systems of the salts as well as phase diagrams of refractory oxides with corrosive salts, and of refractory oxides with alkali oxide systems. The evaluation of the phase diagrams provided valuable information about melt generation and the dissolution of refractory oxides in the melt as well as variations in density and the associated variations in solid-state volume caused by reaction of the refractory oxides Si02, Al203, Ti02, MgO and their refractory compounds mullite, spinel, forsterite, hibonite and wollastonite. Summing up, it can be stated that none of the refractory oxides or oxide mixtures currently available is resistant to alkali corrosion. They either melt at lower temperatures, or chemical reactions cause a volume expansion of the solid phases, which ultimately destroys the microstructure of the material. This finding is confirmed by practical experience both in laboratories and in industry.
REFRACTAIRE. CORROSION. SEL. DIAGRAMME PHASES. OXYDE ALCALIN
REFRACTORY. CORROSION. SALT. PHASE DIAGRAM. ALKALI OXIDE

096e004
Hessenkemper H., Weigand R.
AUGMENTER LA DURÉE DE VIE DES RÉFRACTAIRES EN CONTACT AVEC LE VERRE EN FUSION
INCREASING THE SERVICE LIFE OF GLASS MELT CONTACT REFRACTORIES
English
Refractories Manual –D- (2009), p. 47-49, 7 fig., 4 ref.
2009
This article deals about a cost effective method to refine refractory bricks in contact with glass melt. Aluminium, a reducing agent, is integrated in the composition of the bricks, and the interfacial tension is increased. The reducing atmosphere generated in the pores increases the service life of the bricks.
BRIQUE BLOC REFR. ALUMINIUM. DUREE SERVICE. CORROSION. CAPILLAIRE
REFRACTORY BRICK. ALUMINIUM. LIFE TIME. CORROSION. CAPILLARITY

096e005
Jarvis D.A.
QUALITÉ ET TEST DES RÉFRACTAIRES DANS L'INDUSTRIE VERRIÈRE ET AUTRES INDUSTRIES UTILISANT DES CHAUFFES IMPORTANTES
REFRACTORIES QUALITY AND TESTING FOR THE GLASS INDUSTRY AND OTHER MAJOR HEAT USING INDUSTRIES
English
Refractories Manual –D- (2009), p. 50-53, 3 fig., 2 tab.
2009
The refractory for the glass industry increase in quality but, also, there are new sources like China. The glass industry uses more effective insulation to reduce energy losses. This article reviews some of newer materials and the benefits from their use.
REFRACTAIRE. FOUR. CONTROLE QUALITE. ISOLATION. CHINE
REFRACTORY. FURNACE. QUALITY CONTROL. INSULATION. CHINA

F - ELABORATION DU VERRE

FB - Procédés non-conventionnels ou nouveaux

096fb002
Havel A.J., Feller S.A., Affatigato M., Karns M.
DESIGN ET OPÉRATION D'UN NOUVEAU ROULEAU REFROIDISSEUR POUR LE REFROIDISSEMENT RAPIDE DES FONTES DANS LES VERRES
DESIGN AND OPERATION OF A NEW ROLLER QUENCHER FOR RAPIDLY COOLING MELTS INTO GLASSES
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 227-229, 4 fig., 1 tab., 11 ref.
2009
We discuss the design and construction of a new roller quencher that is capable of cooling liquids at rates up to 1·8×10(6)°C/s. The new roller quencher is based on refinements to our proven twin roller designs. This new generation of machines will have a number of advantages over the existing ones, including digital control of the speed of the rollers and gap adjustment, the ability to control the atmosphere over the resulting glass samples, ease of cleaning, and size. We also discuss the use of roller quenching at Coe College to form borate, and other glasses.
ROULEAU. REFROIDISSEMENT. FONTE VERRE
ROLLER. COOLING. GLASS MELT

096fb003
Deshkovskaya A.A.
SYNTHÈSE DE VERRES AU MOYEN D'UN FAISCEAU D'IONS
ION BEAM SYNTHESIS OF GLASSES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 105-108, 4 fig., 19 ref.
2009
The use of ion beam bombardment for the synthesis of a glass within glass is of great interest in terms of the possibilities of widening the glass forming zone within phase diagrams and the production of new types of glasses. As an example, the possibility with quartz glasses subjected to ion beam bombardment (E=30-300 keV, F=1016-1018 cm(–2)) is shown to create within them ion synthesised layers of glasses of binary systems, with the participation of a wide range of implanted impurities (mRxOy-nSiO2, where R stands for the chemical element) at different depths from the surface. The similarity of the spectral properties of ion synthesised glasses and glasses of the same composition but obtained by conventional means is demonstrated.
RAYON IONIQUE. BOMBARD IONIQUE. IMPLANTATION ION. PROFIL CONCENTRATION. SILICATE
IONIC RAY. IONIC BOMBARDMENT. ION IMPLANTATION. CONCENTRATION PROFILE. SILICATE

G - FABRICATION

GA - Formage et façonnage

096ga002
Mainardi A.
LUBROTECH SOLUTIONS : ATTENTE DES PRODUITS DE NOUVELLE GÉNÉRATION DE RENITE
LUBROTECH SOLUTIONS: WAITING FOR RENITE'S NEW GENERATION PRODUCTS
English
Glass Machinery –I- 22(2009), 5, Sept.-Oct., p. 36-37, 3 fig.
2009
Innovativation, new formulas, and more competitive prices. These are the features of the products that will soon be launched by Renite. This article, from its Italian distributor – LubroTech – gives our readers an idea of these new entries to the American company's product range for hollow glass lubrication.
LUBRIFICATION. VERRE CREUX
LUBRICATION. HOLLOW WARE

GB - Coloration - Décoloration

096gb002
Yamamoto Y., Matsumoto S., Shimodaira N.
MÉCANISMES DE LA COLORATION DE SURFACE DANS LES VERRES TELLURITES DURANT LE FORMAGE SOUS PRESSION
MECHANISM OF SURFACE COLOURATION IN TELLURITE GLASS DURING PRESS FORMING
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 203-205, 4 fig., 3 tab., 10 ref.
2009
The mechanism of surface colouration in tellurite glass (75Te02.20Zn0.5Na20) during press forming has been investigated at 350 °C under an N2 atmosphere. The degree of surface colouration varied depending on the contacted mould materials, Ti, W, Si, Si3N4 and SiO2. According to x-ray photoelectron spectroscopy (XPS) results, the increase of absorbance at 405 nm after press forming correlated well with the basicity of the mould surface as well as the amount of the reduced tellurite near the glass surface. Furthermore, x-ray fluorescence (XRF), showed that the diffusion of Si from the mould of Si-based materials into the glass increased with the increase of basicity, in the order of SiO2<Si3N4<Si, which inversely correlates with the bond strength of Si-X (X: O, N, Si).
COLORATION VERRE. VERRE TELLURITE. MOULE. FORMAGE VERRE. SPECTRE ABSORPTION
GLASS COLORATION. TELLURITE GLASS. MOULD. GLASS FORMING. ABSORPTION SPECTRUM

H - PRODUITS VERRIERS

HB - Verre d'optique

096hb005
Suetsugu T., Wakasugi T., Kadono K.
LA DEPENDENCE COMPOSITIONNELLE DE L'INCORPORATION D'IONS ARGENT DANS LES VERRES BOROSILICATES AU MOYEN DE L'ALTÉRATION DE L'ASPECT POUR LA FABRICATION D'ÉLÉMENTS D'OPTIQUE À GRADIENT D'INDICE
COMPOSITIONAL DEPENDENCE OF SILVER ION INCORPORATION INTO BOROSILICATE GLASSES THROUGH STAINING FOR FABRICATION OF GRADED INDEX OPTICAL ELEMENTS
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 214-216, 2 fig., 2 tab., 15 ref.
2009
The staining technique, which is a well known glass colouring method, is of potential use for the fabrication of graded index optical elements based on a glass substrate. We have studied the incorporation of silver into borosilicate glasses, 65Si02.20B203.10R20.5Al203 (R=Li, Na or K), and also the changes in the optical properties due to silver staining. The dependence of the silver incorporation behaviour on the kind of alkaline ions in the glass was investigated. After staining at 340 °C for 12 h, 1·9×10(18) and 2·7×10(18) atoms/cm2 of silver were incorporated into lithium and sodium borosilicate glasses, respectively. This gave rise to an increase in the refractive index of ~0·03-0·04 at the stained surface of these glasses, although the glasses were colourless and transparent. On the other hand, the amount of silver incorporated into the potassium borosilicate glass was only one third of the amounts for lithium and sodium borosilicate glasses, and the increase in the refractive index was less than 0·02. The difference in the silver incorporation behaviour is discussed from the viewpoint of ionic diffusion.
VERRE BOROSILICATE. ARGENT. TACHE. VERRE GRADIENT INDICE. REFRACTION. PROPR OPTIQUE
BOROSILICATE GLASS. SILVER. STAIN. GRADED INDEX GLASS. REFRACTION. OPTICAL PROPERTY

HD - Vitrocéramiques, verres opales, photosensibles et photochromes

096hd014
Hovhannisyan R.M., Grigoryan B.V., Alexanyan H.A., Shirinyan H.G., Poghosyan M.A., Petrosyan B.V., Toroyan V.P., Abramyan Z.M.
FORMATION DU VERRE ET COMPORTEMENT DE LA CRISTALLISATION DES VITROCÉRAMIQUES DE TETRABORATE ALUMINIUM YTTRIUM
GLASS FORMATION AND CRYSTALLISATION BEHAVIOUR OF YTTRIUM ALUMINIUM TETRABORATE GLASS-CERAMIC
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 221-226, 9 fig., 22 ref.
2009
The phase diagram of the binary Y203-B203 system has

been revised, the phase diagram in the pseudo-binary YAlO3-YBO3 system has been constructed and two binary eutectics have been revealed. A new ternary eutectic between YAlO3, YBO3 and an unknown ternary yttrium aluminium compound has been revealed. Glass forming ability in the ternary Y2O3-Al2O3-B2O3 system has been investigated and a glass forming diagram dependant on melt casting procedure has been determined. The expanded glass formation area occupies fields of composition with low liquidus, formed between binary yttrium aluminate, yttrium borate and yttrium aluminium borate eutectics. The crystalline phase formation in yttrium aluminium tetraborate have been determined by solid state sintering and by devitrification of the corresponding glass composition in powder, bulk and tape form. The binary aluminium and yttrium borates are formed as the first step (750-850 °C) of solid state sintering and all forms of glass devitrification. Differential thermal analysis and x-ray diffraction showed the dominant ternary yttrium aluminium tetraborate phase formation at 1000-1135 °C in solid sintering batches and glass powder crystallisation. This phase is formed in the range 800-950 °C for bulk glass and tape crystallisation. The glass ceramics based on yttrium aluminium tetraborate are ferroelectric, with remanent polarization equal to 0·08-0·3 μC/cm2 at external field 200-240 kV/cm.
YTTRIUM. VITROCERAMIQUE. ALUMINIUM. BORATE. CRISTALLISATION. FERROELECTRICITE. DIAGRAMME PHASES
YTTRIUM. GLASS CERAMICS. ALUMINIUM. BORATE. CRYSTALLISATION. FERROELECTRICITY. PHASE DIAGRAM

HF - Verre plat

096hf022
Haese A.
ANALYSES EXPÉRIMENTALES DES POINTS DE FIXATION
EXPERIMENTAL ANALYSIS OF POINT FIXINGS
English
Glass in it Style –I- (2009), 3, p. 8-11, 4 fig., 3 ref.
2009
Point supported glass façades are very used. The German.draft standard DIN 18008-3: point fixings provides an annex that specifies a fixed test-proceeding to determine and assure certain relevant data of the point-fitting.
VERRIERE. REGLEMENTATION. FACADE. ARCHITECTURE
GLASS ROOF. REGULATION. FACADE. ARCHITECTURE

096hf023
Glass-Technology International
ETAT DE L'ART DANS LA MANUTENTION, LA DÉCOUPE, LA FRACTURE, LA TRANSFORMATION DU VERRE
BOHLE: STATE-OF-THE-ART IN HANDLING, CUTTING AND BREAKING, PROCESSING AND GLAZING
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 34-37, 4 fig.
2009
With an entirely new stand concept and numerous innovative products, Bohle AG presented itself at the 2008 edition of the glasstec trade fair. In clearly defined product sections, visitors could identify their specific areas of interest of the glass industry.
MACHINE OUTIL. INDUSTRIE VERRIERE
MACHINE TOOL. GLASS INDUSTRY

096hf024
Glass-Technology International
DENVER : RESULTATS POSITIFS POUR UNE ÉQUIPE DE TRAVAIL DANS LA FABRICATION DE MACHINES DE TRANSFORMATION
DENVER: TEAM WORK BRINGS POSITIVE RESULTS IN PROCESSING MACHINERY MANUFACTURE
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 40-43, 12 fig.
2009
The invitation to an Open House was the perfect occasion to visit Denver, a company located on the north-east coast of Italy in the independent Republic of San Marino. This young but experienced company has, in just 25 years, gone from working for third party companies, to being one of the well-known names in the field of flat glass processing machinery in Italy and worldwide.
VERRE PLAT. MACHINE OUTIL
FLAT GLASS. MACHINE TOOL

096hf025
Glass-Technology International
ISRA VISION : DES INNOVATIONS QUI DEVIENNENT UN STANDARD
ISRA VISION: INNOVATIONS THAT HAVE BECOME STANDARDS
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 51-53, 4 fig.
2009
Demand for quality glass products is steadily increasing, and thus the need for inspection solutions to optimize production processes and increase quality. Isra Vision presents, in this article, its solutions for all glass manufacturing applications, which include float and curved glass, with a special emphasis on quality control and process optimization.
CONTROLE QUALITE. DEFAUT. VERRE PLAT
QUALITY CONTROL. DEFECT. FLAT GLASS

096hf026
Glass-Technology International
INTERPANE : NOUVELLES FONCTIONS ET NOUVEAUX DESIGNS DANS LES FAÇADES
INTERPANE: NEW FUNCTIONS AND DESIGNS IN FACADES
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 61-63, 4 fig.
2009
At glasstec 2008, Interpane exhibited new developments and improvements of its established glazing products, which further enhance the possibilities of sophisticated glass architecture as well as energy savings. ipachrome combines innovative object design with partial or large-area highly reflecting decor, adding to architects' creative possibilities by allowing for coloured and hued designs, along with improved solar factor.
DECORATION VERRE. VERRE PLAT. FACTEUR SOLAIRE. ECONOMIE ENERGIE
GLASS DECORATION. FLAT GLASS. SOLAR FACTOR. ENERGY SAVING

096hf027
Glass-Technology International
TROSIFOL : FILMS PVB POUR UNE GAMME ÉTENDUE D'APPLICATIONS SPÉCIALISÉES
TROSIFOL: PVB FILMS FOR A WIDE RANGE OF SPECIALIZED APPLICATIONS
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 64-70, 11 fig.
2009
Part of the Kuraray Group since the beginning of 2005. Trosifol is a leading supplier of polyvinyl butyral films in Europe for architectural glazing. In this article, the company gives us an overview on some of the recent product developments it has made, with regards to colour, which has been reduced further to improve glass optics, especially for multiple glazing, as well as rigidity, improving and simplifying edge trimming. Further developments include reduced risk of dust contamination and improved deairing of the pre-laminate.
ARCHITECTURE. VERRE PLAT. VITRAGE MULTIPLE. BUTYRAL POLYVINYLIQUE. ECONOMIE ENERGIE
ARCHITECTURE. FLAT GLASS. MULTIPLE GLAZING. POLYVINYL BUTYRAL. ENERGY SAVING

096hf028
Glass-Technology International
DIP TECH : PRÉSENTE LA BEAUTÉ SUR LE VERRE
DIP TECH: PRESENTING BEAUTY ON GLASS
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 85-87, 6 fig.
2009
When it was decided to renovate and extend Stadsschouwburg Haarlem, one of the five oldest theatres of the Netherlands, aspects such as space, technology, production facilities and building access had to be taken into consideration. The facade also underwent a major design update, with the illusion of a "cascade" of water coming down from the roof. This article looks at the creation of the facade, the work behind the facade itself, the machine used to create the design on the glass, and the three companies involved.
DESIGN. VERRE PLAT. FACADE. VERRE COLORE
DESIGN. FLAT GLASS. FACADE. COLORED GLASS

HG - Verre creux - Tubes

096hg022
Nicoletti F., Guadagnino E.
EMBALLAGE PRIMAIRE DES VERRES TUBULAIRES
PRIMARY PACKAGING FROM TUBULAR GLASS
English
Glass Machinery –I- 22(2009), 5, Sept.-Oct., p. 74-77, 6 fig., 2 tab., 5 ref.
2009
The market share for injectable drugs represents about 24 per cent of the total pharmaceutical world market. The injection volume is usually below 20 ml and the relevant containers are mainly tubular glass containers: ampoules, vials, cartridges and syringes. As glass tubing production and glass tubing converting technology can seriously affect the quality of the final glass container, high-tech production lines are requested. While market trend looks quite flat for ampoules, a constant increase for vials and a high growth for cartridges and syringes are expected in the near future.
VERRERIE PHARMACEUT. FLACON PHARMACEUT. SERINGUE. AMPOULE PHARMACEUT
PHARMACEUTICAL GLASSWARE. PHARMACEUTICAL BOTTLE. SYRINGE. PHARMACEUTICAL PHIAL

096hg023
Glass International
LA DEMANDE CONFIRME LE DERNIER INVESTISSEMENT DANS L'USINE DE VERRE D'EMBALLAGE DE JEBEL ALI
DEMAND SUPPORTS LATEST INVESTMENT AT CONTAINER PLANT
English
Glass Int. –GB- 32(2009), 7, p. 19-20, 3 fig.
2009
The plant of Jebel Ali container glass has recently invested in a replacement furnace taking its daily capacity to 360 tonnes.
ENTREPRISE. VERRE EMBALLAGE. MOYEN ORIENT. PRODUCTION FIRM. CONTAINER GLASS. MIDDLE EAST. PRODUCTION

096hg024
Glass International
UN PRODUCTEUR DE BOUTEILLES RESTE DEVANT GRÂCE À LA TECHNOLOGIE

BOTTLE PRODUCER STAYS AHEAD THROUGH TECHNOLOGY
English
Glass Int. –GB- 32(2009), 7, p. 23-24, 2 fig.
2009
Al Tajir glass is an important container glass manufacture with a output capacity at 540 tonnes/day.
ENTREPRISE. MOYEN ORIENT. VERRE EMBALLAGE. PRODUCTION
FIRM. MIDDLE EAST. CONTAINER GLASS. PRODUCTION

096hg025
Prakash N.S.
LE CONTRÔLE DANS LE VERRE D'EMBALLAGE : UN ÉLÉMENT CRITIQUE
CONTROL IN CONTAINER GLASSMAKING: A CRITICAL ELEMENT
English
Glass Int. –GB- 32(2009), 7, p. 43-44, 46-47, 11 fig., 3 tab.
2009
The author outlines some key areas for quality control of container glass: material, property, alkalinity, dimensions, capacity, defects, stones, durability, impact test…
VERRE EMBALLAGE. CONTROLE QUALITE
CONTAINER GLASS. QUALITY CONTROL

HH - Fibre optique - Guide d'onde - Application

096hh007
Milczewski M.S., Stevenson M., Canning J., Martelli C., Kalinowski H.J.
SENSIBILITÉ DES FIBRES MICROSTRUCTURÉES SILICE ET POLYMÈRES À LA PRESSION TRANSVERSALE
SENSITIVITY OF SILICA AND POLYMER MICRO-STRUCTURED FIBRES TO TRANSVERSAL PRESSURE
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 211-213, 5 fig., 8 ref.
2009
The sensitivity to transversal pressure of both silica and polymer microstructured fibres is studied. Transversal loads ranging from 100-1600 g are applied over a 5 mm long region of the fibres. Transversal pressure deforms the fibre structure proportionally to the applied load causing light to leak out, hence one can estimate structural changes by measuring the output of the fibre. The polymer fibre experiences higher deformations and consequently higher loss. Both fibres present linear behaviour within the studied load range and no hysteresis is observed.
PRESSION. SILICE. FIBRE OPTIQUE. FIBRE PLASTIQUE. POLYMERE INORGANIQUE
PRESSURE. SILICA. OPTICAL FIBER. PLASTIC FIBRE. INORGANIC POLYMER

HK - Bioverres - Verres techniques

096hk012
Michaelis V.K., Kroeker S.
VOLATILISATION DU CÉSIUM DANS LES VERRES BOROSILICATES : UNE ÉTUDE À RÉSONANCE MAGNÉTIQUE MULTINUCLÉAIRE
CAESIUM VOLATILISATION IN BOROSILICATE GLASSES: A MULTINUCLEAR MAGNETIC RESONANCE STUDY
English
Phys. Chem. Glasses –GB- 50(2009), 4, p. 249-252, 6 fig., 16 ref.
2009
The evaporation of Cs from caesium borosilicate glasses with variable melting times has been quantified using inductively coupled plasma optical emission spectroscopy and (133)Cs NMR spin echo intensities. Caesium is shown to be lost as an oxide or in elemental form, not as a borate or silicate compound. The composition change is associated with a decrease in the fraction of four-coordinated boron, as measured by (11)B MAS NMR, and regular changes in the (133)Cs NMR peak position. Distinct behaviour of the two tetrahedral boron NMR peaks suggests that some degree of phase separation may also occur after long heating times. These results on a simplified model for a nuclear waste glass show that NMR can play a role in determining structural changes due to elemental volatility, and provide valuable information on which solutions to this problem may be based.
VERRE BOROSILICATE. CESIUM. VOLATILISATION. EVAPORATION. FUSION. TRANSFORMATION STRUC. SEPARATION PHASE. SPECTRE RMN. VERRE APPL NUCLEAIRE
BOROSILICATE GLASS. CAESIUM. VOLATILISATION. EVAPORATION. MELTING. STRUCTURAL CHANGE. PHASE SEPARATION. NMR SPECTRUM. NUCLEAR USE GLASS

096hk013
Jung S.B., Day D.E.
CINÉTIQUE DE CONVERSION DE VERRES BIOACTIFS BORATE, SILICATE ET BOROSILICATE EN HYDROXYAPATITE
CONVERSION KINETICS OF SILICATE, BOROSILICATE, AND BORATE BIOACTIVE GLASSES TO HYDROXYAPATITE
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 85-88, 4 fig., 1 tab., 14 ref.
2009
Bioactive 45S5 glass has been studied extensively both in vivo and in vitro, and it is relatively well known that when placed in a phosphate containing solution the glass will react to form the bone-like material hydroxyapatite (HA). In the present work, a kinetic analysis of previously measured weight loss data was done to determine reaction rate constants for four bioactive glasses; one silicate glass, two borosilicate glasses, and one borate glass, via the contracting volume model. The reaction rate increased with increasing B2O3 content, with the borate glass reacting nearly five times faster than the silicate 45S5 glass. The three silica containing glasses all deviated from the contracting volume model after approximately 50-70 % of the total weight loss; however, when compared to the 3D diffusion model, the normalised data were in good agreement to 100 % of the total weight loss. The deviation from the contracting volume model to the slower 3D diffusion model indicates a change in conversion model for the silica containing glasses and can likely be attributed to the formation of a silica rich layer of a certain thickness that began controlling the release of ions from the unreacted glass by diffusion.
BIOVERRE. APATITE. VERRE BORATE. VERRE SILICATE. VERRE BOROSILICATE. MASSE. LIQUIDE CORPOREL. VITESSE
BIOGLASS. APATITE. BORATE GLASS. SILICATE GLASS. BOROSILICATE GLASS. MASS. BODY FLUID. SPEED

096hk014
Snyder M.J., Wachtel P.B., Hall M.M., Shelby J.E.
DIFFUSION DE L'HYDROGÈNE PHOTO-INDUITE DANS DES MICROSPHÈRES CREUSES EN VERRE ET DOPÉES AU COBALT
PHOTO-INDUCED HYDROGEN DIFFUSION IN COBALT-DOPED HOLLOW GLASS MICROSPHERES
English
Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B –GB- 50(2009), 2, p. 113-118, 9 fig., 11 ref.
2009
Photo-induced hydrogen diffusion in cobalt-doped hollow glass microspheres has been verified and shown to offer great potential for hydrogen storage. Outgassing of hydrogen filled cobalt-doped hollow glass microspheres by exposure to light from an infrared lamp is shown to be superior to outgassing by heating from a preheated furnace for this application. Exposure of hydrogen filled hollow glass microspheres doped with CoO to infrared light results in an immediate hydrogen release whereas application of heat from a preheated furnace results in a significant lag time before release of hydrogen. Similar effects do not occur for undoped microspheres made from the same base glass.
DIFFUSION. HYDROGENE. SPHERE CREUSE. COBALT. DEGAZAGE
DIFFUSION. HYDROGEN. HOLLOW SPHERE. COBALT. DEGASSING

I - UTILISATION ET TRANSFORMATION

IA - Traitements superficiels, décoration

096ia010
Bird H.
UN FOURNISSEUR DÉTIENT UN ACTIF VALABLE DANS LA DÉCORATION
SUPPLIER HOLDS VALUABLE ASSET IN PRINTING CONNECTION
English
Glass Int. –GB- 32(2009), 7, p. 13-14, 2 fig.
2009
Tecno5, screen printing machine specialist has a strong link with Cerve, an important glass decorating company in Italia.
DECORATION. ENTREPRISE. SERIGRAPHIE
DECORATION. FIRM. SCREEN PRINTING

IB - Applications spéciales

096ib018
Hayashi A., Furusawa D., Minami K., Tadanaga K., Tatsumisago M.
SYNTHÈSE MÉCANOCHIMIQUE D'ÉLECTROLYTES SOLIDES AMORPHES DANS LE SYSTÈME LI2O.B2O3-[EMI]BF4
MECHANOCHEMICAL SYNTHESIS OF AMORPHOUS SOLID ELECTROLYTES IN THE SYSTEM LI2O-B2O3-[EMI]BF4
English
Glass Technol.: Eur. J. Glass. Sci. Technol –GB- 50(2009), 4, p. 217-220, 4 fig., 13 ref.
2009
A new type of solid electrolyte was mechanochemically prepared from lithium pyroborate glass as a Li+ ion conductor, and 1-ethyl-3-methyl-imidazolium tetrafluoroborate ([EMI]BF4) as an ionic liquid. It was revealed from FT-IR and (11)B MAS-NMR measurements that [EMI]+ cations and BF4– anions were not decomposed by high energy ball milling, and were still present in the prepared (100-x)(0.67Li2O.0.33B2O3).x[EMI]BF4 (mol%) glasses. DSC analysis suggests that glass transition temperatures were decreased by the addition of [EMI]BF4 to the lithium borate glass. The ambient temperature conductivity of the glass containing 10 mol% [EMI]BF4 was 10(-4) S cm(-1), which is four orders of magnitude higher than that of 67Li2O.33B2O3 (mol%) glass. The activation energy for conduction was decreased by the addition of [EMI]BFM4. The dissolution of an ionic liquid in glass is a novel way to enhance the conductivity of glass electrolytes.
ELECTROLYSE. LITHIUM. VERRE BORATE. ELECTROLYTE SOLIDE
ELECTROLYSIS. LITHIUM. BORATE GLASS. SOLID ELECTROLYTE

ID - Piles et capteurs solaires

096id003
Michaut C.
CELLULES À COUCHES MINCES, GROS POTENTIEL
THIN FILM SOLAR CELLS: BIG POTENTIALITY
French
Envir. Mag. –F- 165(2009), 1682, p. 58, 60, 2 fig.
2009
Crystalline silicon dominates the market but new thin film technology would change this supremacy.
PILE SOLAIRE. COUCHE MINCE
SOLAR CELL. THIN FILM

IE - Couches minces

096ie013
ICV
NANOTECHNOLOGIES : FONCTIONNALISER LES SURFACES
NANOTECHNOLOGIES: FUNCTIONALIZING THE SURFACES
English/French
ICV – F- (2009), 1026, p. 81-83, 4 fig/ ICV – F- (2009), 1026, p. 40-42, 4 fig.
2009
An article about the Beneq company established in Finland in 2005, which has been able to develop an know-how in the thin film sector: Atomic Layer Deposition (ALD coating techniques), thin film system TFS 200, nHALO technology, coating system for ceramic tile and nAERO for advanced applications on glass.
REVETEMENT. DEPOT METHODE. COUCHE MINCE. ENTREPRISE
COATING. DEPOSITION METHOD. THIN FILM. FIRM

096ie014
Romeo N., Bosio A., Romeo A., Mazzamuto S.
CELLULES SOLAIRES À COUCHES MINCES SUR SUBSTRATS DE VERRE BON MARCHÉ : VERS LA PRODUCTION DE MASSE
THIN FILM SOLAR CELLS ON LOW COST GLASS SUBSTRATES: TOWARDS MASS PRODUCTION
English
Glass Technol. Int. –I- 20(2009), 2, March-April., p. 88-93, 6 fig., 2 tab., 5 ref.
2009
The progress obtained so far, and the future trends for the two most successful thin film solar cells, namely CuInGaSe2/Cd Sand CdTe/CdS, are described in this article. The construction of a solar production plant, located near Varese, northern Italy, expected to produce 15 MW/year, will also be reported. This plant, based on CdTe thin film deposition onto 0.6 x 1.2 square meter glass modules, is being built with the scientific support of Parma University.
PILE SOLAIRE. COUCHE MINCE
SOLAR CELL. THIN FILM

L - POLLUTION - RECYCLAGE, SECURITE ET HYGIENE INDUSTRIELLE

096l014
Bertuzzi P., Ercole P., Ferrero C., Ramon L.
GLASSY SAND PROVENANT DU CALCIN REJETÉ PENDANT LA PREMIÈRE PHASE DU TRAITEMENT : ANALYSE DE LA QUALITÉ, DE L'ÉNERGIE ET DE L'ENVIRONNEMENT
GLASSY SAND FROM CULLET REJECTED DURING PRIMARY PROCESSING: QUALITY, ENERGY AND ENVIRONMENTAL ANALYSIS
English
Glass Machinery –I- 22(2009), 5, Sept.-Oct., p. 66-73, 10 fig., 1 tab.
2009
After seeing a considerable drop in the use of natural raw materials for glass production, due to the use of ecology cullet, Sasil started to experiment and refine a process aimed at using the material rejected during the primary processing of kerbside cullet. This article looks at the results obtained in the first five years of use of this new raw material.
RECYCLAGE. VERRE CREUX. MATIERE PREMIERE. CALCIN
RECYCLING. HOLLOW WARE. RAW MATERIAL. CULLET

096l015
Remoue A.
DES ÉMISSIONS SOUS SURVEILLANCE RENFORCÉE
EMISSIONS UNDER HIGH OBSERVATION
French
Usine Nouvelle –F- (2009), 3171, p. 76-78, 3 fig.
2009
The European directive IPPC will be hardened and its new version, presented to the Parliament, at the beginning of 2010, will force industries to use the best available technologies.
EMISSION. FUMEE. POLLUTION
EMISSION. WASTE GAS. POLLUTION

096l016
Slade S., Kasper A., Van Marcke G., Bolcan D., Stockdale J.
GRANULOMÉTRIE DES PARTICULES DANS LES FUMÉES PRODUITES PAR LES FOURS DE VERRE PLAT
PARTICLE SIZE RANGE IN THE WASTE GAS OF FLAT GLASS FURNACES
English
Glass Int. –GB- 32(2009), 7, p. 29, 31-32, 33, 7 fig., 1 tab., 4 ref.
2009
Members of the environment committee of ICG have studied the size range of particles in the waste gas of float furnaces, both with and without secondary pollution control plant.
VERRE PLAT. FOUR. FUMEE. VERRE FLOAT. GRANULOMETRIE. POLLUTION
FLAT GLASS. FURNACE. WASTE GAS. FLOAT GLASS. GRAIN SIZE. POLLUTION

M - ART ET HISTOIRE

096m023
Barovier Mentasti R.
LE VERRE À LA BIENNALE DE VENISE 2009
GLASS AT THE VENICE BIENNALE 2009
German/English
Neues Glas-New Glass -D- (2009), 3, p. 10-19, 20 fig.
2009
The Venice Biennale 2009 gives a major place to glass. The biggest exhibition, Glasstress, can be seen at the Palazzo Franchetti, the second one at Padiglione Venezia, dedicated to decorative arts, mainly glass: Allessandro Diaz, Toni Zuccheri, Dale Chihuly, Yoichi Ohira, Mishima, Lino Tagliapietra, Othoniel, Josef Albers,…
EXPOSITION. ART. ITALIE
EXHIBITION. ART. ITALY

096m024
Klotz U.M.
RICHARD CRAIG MEITNER : "AURUM NOSTRUM NON EST AURUM VULGI"
RICHARD CRAIG MEITNER : "AURUM NOSTRUM NON EST AURUM VULGI"
German/English
Neues Glas-New Glass -D- (2009), 3, p. 20-27, 14 fig.
2009
Meitner, American artist living in the Netherlands present his works at Corning Museum. His style is extremely original and surprising.
EXPOSITION. ART
EXHIBITION. ART

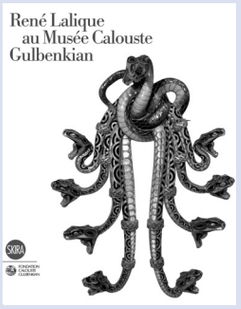
096m025
Tschumi B., Trumpler S.
ART VERRIER CONTEMPORAIN EN SUISSE ET EXPOSITION AU VITROMUSÉE ROMONT
CONTEMPORARY GLASS ART IN SWITZERLAND AND AN EXHIBITION AT VITROMUSÉE ROMONT
German/English
Neues Glas-New Glass -D- (2009), 3, p. 36-41, 9 fig.
2009
A little article about contemporary glass art in Switzerland.
ART. SUISSE. VERRE CONTEMPORAIN. EXPOSITION
ART. SWITZERLAND. MODERN GLASS. EXHIBITION

096m026
Tschumi B.
UNE EXPOSITION DE DESIGN VERRIER À LAUSANNE
A GLASS DESIGN EXHIBITION AT MUDAC, LAUSANNE
German/English
Neues Glas-New Glass -D- (2009), 3, p. 42-45, 6 fig.
2009
Ten artists rethink the Funerary Urn: presentation of their work.
EXPOSITION. ART
EXHIBITION. ART

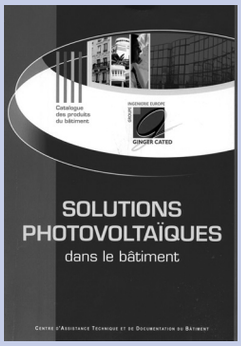
096m027
Neues Glas
LAURÉAT 2009 DU PRIX DE LA FONDATION JUTTA CUNY-FRANZ
JUTTA CUNY-FRANZ MEMORIAL AWARD 2009
German/English
Neues Glas-New Glass -D- (2009), 3, p. 71-95, 46 fig.
2009
Presentation of artists winners of the Jutta Cuny-Franz Foundation prize: C. Matthew Szosz, Ruby Woo, Kristiina Uslar, Helen Acosta Iglesias, Teresa Almeida, Anna Lena Grau, Maki Imoto, Romana Schmalisch and Ieva Strazdina.
ART. VERRE CONTEMPORAIN
ART. MODERN ART

096m028
Aubert L.
STRASBOURG : LE GOÛT DU VERRE
STRASBOURG: TASTE OF GLASS
French
Atelier d'Art –F- (2009), 84, p. 8, 1 fig.
2009
Presentation of artists, exposing at the two-yearly international celebration of glass in Strasbourg.
VERRERIE ART
ART GLASS

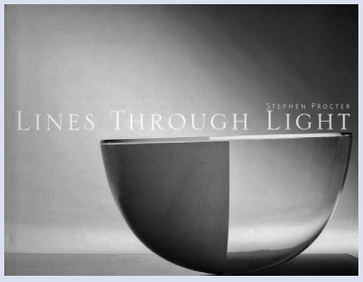
LIVRES



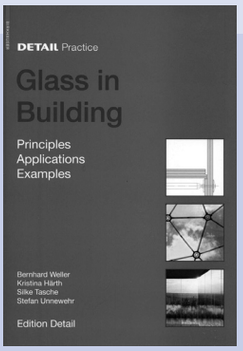
096zx042
Passos Leite M.F.
RENÉ LALIQUE AU MUSÉE CALOUSTE GULBENKIAN
RENE LALIQUE AT THE CALOUSTE GULBENKIAN MUSEUM
French
30,5 cm, 136 p., 125 fig.
Skira
2008
978-88-572-0043-9
32 Euros
Calouste Gulbenkian (1869–1955), was an important Portuguese collector. He was also a friend of René Lalique's for fifty years, as well as a great connoisseur of the various activities of this artist. Between 1899 and 1927, he acquired eighty extraordinary works of art directly from the artist. Today, these works are conserved in an exclusive space inside the Calouste Gulbenkian Museum in Lisbon. This incomparable collection of jewelery, art objects, artistic glass, and drawings by the artist René Lalique, being published for the first-time in a large format catalogue, gives to the reader a complete idea of the entire artistic activity of Lalique. The world's largest collection: comb, tiara, hairpin, pendant, brooch, belt buckle, neck, jewels, bracelet, vase, etc. are presented in this work. This book is very richly illustrated with beautiful pictures. The author, Maria Fernanda Passos Leite, is chief curator of the textile and René Lalique collections at the Calouste Gulbenkian Museum.
MUSEE. ART. BIJOUTERIE. CATALOGUE
MUSEUM. ART. JEWELLERY. CATALOGUE



096zx044
CATED
SOLUTIONS PHOTOVOLTAÏQUES DANS LE BÂTIMENT
PHOTOVOLTAIC SOLUTIONS IN BUILDING
French
Brochure : 29,7 cm, 124 p., nbses fig. et tab.
Cated, Elancourt
2009
978-2-9532794-0-5
75 Euros
Avec le Grenelle de l'Environnement et la hausse du prix du pétrole, le marché des énergies renouvelables commence à prendre de plus en plus d'importance. Parmi ces énergies renouvelables, il est beaucoup question, en ce moment, de l'énergie solaire photovoltaique (PV) qui est d'ailleurs en plein développement dans le secteur du bâtiment. Dans un module PV, l'énergie lumineuse des rayons solaires est converti en électricité. Ce livre, qui a pour objectif de faire le point sur ce thème, aborde successivement la technologie, les propriétés des systèmes photovoltaïques, les divers types de raccordement, la maintenance, la productivité, le recyclage des modules, le marché du solaire, l'aspect financier, la réglementation, les labels, les normes et enfin, les équipements et leurs fournisseurs.
PHOTOELECTRICITE. BATIMENT. ENERGIE SOLAIRE. PILE SOLAIRE. COUCHE MINCE. ENVIRONNEMENT
PHOTOELECTRICITY. BUILDING. SOLAR ENERGY. SOLAR CELL. THIN FILM. ENVIRONMENT

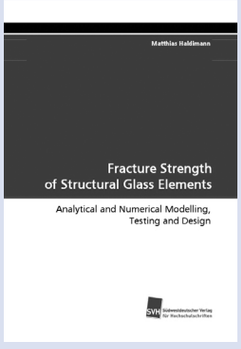


096zx045
Procter S.
LIGNES ET LUMIÈRE
LINES THROUGH LIGHT
English
Livre : 28,7 cm, 153 p., nbses fig.
RLDI/Christine Procter
2008
978-0-646-48407-5
$85
This full colour publication, presents more than 100 of Stephen Procter's works, a selection of the artist's most creative glass sculptures, paintings and sculptures, accompanied by his poetic words on his art, gleaned from his notebooks. This book reveals the contemporary work and thinking of a master craftsman: Stephen Procter (1946-2001) who created a serene, accomplished oeuvre that reflected his aesthetic concerns. After studying both engineering and agriculture, Procter became a glass engraver. He travelled to glass workshops in Austria, learning prismatic cutting, fine carving and glass-blowing. Ultimately Procter's mature works-fused, blown, cut and engraved spherical vessels-seamlessly combined the techniques he had mastered. He worked with: light, balance, rhythm, colour, and line. He written: "I often think of my pieces, as volumes of light, like still clouds filled to the brim with reflected light". Lines Thought Light includes an introductory essay by glass specialist Dan Klein.
ART. VERRE CONTEMPORAIN
ART. MODERN GLASS

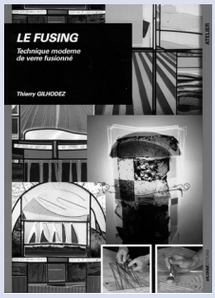


096zx041
Weller B., Harth K., Tasche S., Unnewehr S.
LE VERRE DANS LE BÂTIMENT : PRINCIPES, APPLICATIONS ET EXEMPLES
GLASS IN BUILDING: PRINCIPLES, APPLICATIONS, EXAMPLES
English
Livre : 29,5 cm, 112 p., 256 fig., 19 tab.
Edition Detail, Munich/Birkhäuser, Basel
2009
978-3-0346-0132-0
34,90 Euros
This guide for the planning of glass constructions provides designers, architects with a whole range of fascinating, creative and innovative use of glass in architecture. Glass has long been used as a translucent room partition element, but its range of possible uses is actually much wider: glass safeguards against crashes, protects against explosions, repels armed attacks, creates accessible areas on roofs, in stairwells and galleries, and even carries the system load within a structure. So, glass offers protection against the external world, for example, noise or fire, but also and despite its apparent fragility, it can even take on load-bearing functions in supporting structures. And in combination with various different finishing methods and coatings, glass also fulfils high structural requirements. This book offers a clear, compact, and descriptive overview of the main principles for an appropriate use of this building material: glass products, designing and building with glass, special requirements for noise / fire / heat protection, construction legislation and regulation. A selection of projects completes the theoretical section. This guide also contains a glossary, standards and directives, a bibliography, a manufacturers and associations selection. Following the successful introduction of the German version "Konstruktiver Glasbau" in November 2008, its English edition within the popular series "DETAIL Practice" addresses the international public of both professional architects and students.
CONSTRUCTION ELEMENT. ARCHITECTURE. DESIGN. ISOLATION ACOUSTIQUE. RESISTANCE FEU. PROPR THERMIQUE. VERRE PLAT. PLANCHER
BUILDING COMPONENT. ARCHITECTURE. DESIGN. SOUND INSULATION. FIRE RESISTANCE. THERMAL PROPERTY. FLAT GLASS. FLOOR

096zx049
Haldimann M.
LA RÉSISTANCE À LA RUPTURE DES ÉLÉMENTS STRUCTURELS EN VERRE : MODÉLISATION ANALYTIQUE ET NUMÉRIQUE, TEST ET DESIGN

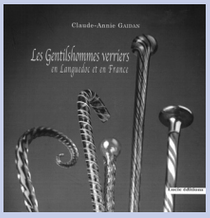


FRACTURE STRENGTH OF STRUCTURAL GLASS ELEMENTS: ANALYTICAL AND NUMERICAL MODELLING, TESTING AND DESIGN
English
Brochure : 29,7 cm, , 200 p., nbses fig., tab. et ref.
Südwestdeutscher Verlag für Hochschulschriften, Saarbrücken
2009
978-3-8381-0534-5
For centuries, the glass in buildings was essentially used for windows and glazing. Recent technological developments have now brought about unprecedented opportunities and glass elements can carry substantial loads and therefore achieve a structural role, but the structural design of such elements remains problematic. Current widely used design methods are applicable to general conditions, but are limited to special cases like rectangular plates, uniform lateral loads, constant loads, time-independent stress distributions. The design methods contain inconsistencies and give unrealistic results for special cases. With the absence of a generally agreed design method, this very interesting book endeavours to improve this situation and deals about the fundamental aspects of the use of glass in buildings, an analysis of present knowledge. Then a lifetime prediction model for structural glass elements, which offers a great flexibility and significant advantages over currently used models, was established. This prediction model is based on fracture mechanics and the theory of probability. In addition to the analysis of existing data, laboratory tests were performed and testing procedures improved in order to provide more reliable and accurate model input. Finally, recommendations for structural design and testing were developed. The application of the proposed models and recommendations in research and practice is facilitated by GlasTools, the computer software that was developed as part of this thesis.
RESISTANCE MECANIQUE. VERRE PLAT. CONSTRUCTION ELEMENT. THESE. PREDICTION. SIMULATION. FRACTURE
MECHANICAL STRENGTH. FLAT GLASS. BUILDING COMPONENT. THESIS. PREVISION. SIMULATION. FRACTURE



096zx047
Gilhodez T.
LE FUSING, TECHNIQUE MODERNE DE VERRE FUSIONNÉ
FUSING, MODERN TECHNIC OF FUSIONNED GLASS
French
Livre : 26 cm, 79 p., nbses fig.
Ulisséditions, Paris
2008
978-2-844-15-156-8
14,50 Euros

Ce manuel d'initiation à la pratique du fusing a pour objectif de permettre aux amateurs de se familiariser avec la fusion du verre telle qu'on peut la pratiquer aujourd'hui grâce à l'outillage et aux équipements modernes. Ce terme anglais de fusing employé pour désigner le verre fusionné, consiste à assembler, à superposer, à froid, plusieurs couches de verre et à les faire fusionner dans un four à haute température afin de former une seule pièce homogène. L'auteur qui souhaite que cet ouvrage permette aux lecteurs d'appréhender efficacement le fusing et d'y trouver une matière propre à stimuler l'imaginaire, ne dresse pas un catalogue exhaustif des différentes technologies. Il essaye plutôt l'approche sensible et circonstanciée du fusing et de ses applications possibles dans la fabrication de pièces décoratives en volume jusqu'à l'élaboration de vitraux monumentaux. De nombreuses réalisations sont proposées : plateaux et objets décoratifs, appliques murales, puis, panneaux et vitraux pour les plus expérimentés. Cet ouvrage d'initiation va permettre d'aborder la compatibilité des verres, la découpe, les cycles thermiques de cuisson, le thermoformage,... La maîtrise viendra progressivement.
ART. FUSING
ART. FUSING

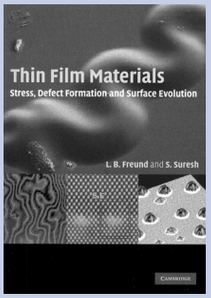


096zx048
LES GENTILSHOMMES VERRIERS EN LANGUEDOC ET EN FRANCE
GENTLEMEN GLASS-MAKER IN LANGUEDOC AND IN FRANCE
French
Livre : 22 cm, 119 p., nbses fig., 25 ref.
Lucie Editions, Nimes
2008
978-2-35371-052-2
26,50 Euros

Dès le XIVe siècle, l'art du verre connut un essor considérable qui s'est perpétué jusqu'à la première moitié du XXe siècle. À travers cet ouvrage intitulé « Les gentilshommes verriers en Languedoc et en France », Claude-Annie Gaidan, nous fait parcourir l'épopée du verre dans le domaine historique, technique et généalogique. Elle nous retrace les principales implantations verrières en France en mettant l'accent plus particulièrement sur les manufactures du Bas-Languedoc. Elle nous décrit l'organisation structurelle de la corporation, ainsi que l'aspect technique de la fabrication du verre dans des domaines comme la parfumerie, verres, bouteilles pour la viticulture, huiliers, objets sacrés (bénitiers), pacotille, etc. La dernière partie de l'ouvrage est consacrée à l'étude généalogique et précise les liens familiaux qui unissaient la plupart de ces gentilshommes verriers pour une trentaine de familles verrières (Azémar, De La Roque, Bertin, D'Aigaliers, les seigneurs de Couloubrines, etc.) qui ont transmis de génération en génération leur savoir faire. Cet ouvrage présente une documentation riche et de nombreuses illustrations.
HISTOIRE. FRANCE. VERRERIE ARTISANALE
HISTORY. FRANCE. CRAFT GLASS

096zx050
CETIE
ETIQUETAGE AUTOADHESIF SUR BOUTEILLES ET POTS EN VERRE
PRESSURE SENSITIVE ON GLASS BOTTLES AND JARS
French/English
Brochure : 29,7 cm, 38 p., 23 fig., 2 tab.
CETIE, Paris
2009

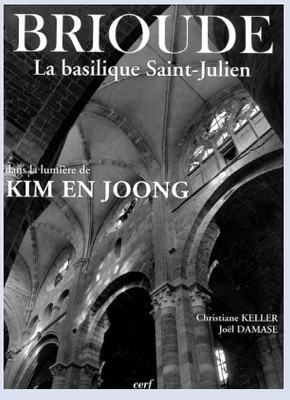
This guide realised by the Centre Technique International de l'Embouteillage et du Conditionnement is the update of the guide interprofessionnel edited in September 1997 by the Chambre Syndicale des Verreries Mécaniques de France (CSVMF) under the title: Etiquetage autoadhésif. This guide of the best practice edited by the CETIE has for aim to make available to the actors of this business sector the technical bases and the state of the art of a specific domain. After generalities about label and pressure sensitive label, we have some recommendations for: storage, the choice of a label, generalities about glass container, labelling materials and the conditions of label application, the control of the application operation, the checklist of labelling defects and their causes at the time of labelling and after the labelling operation. This guide contains diagrams and pictures to illustrate.
VERRE EMBALLAGE. ETIQUETTE. COLLAGE. COLLE. IMPRESSION. ADHERENCE. BOUTEILLE
CONTAINER GLASS. LABEL. STICKING. ADHESIVE. PRINTING. ADHESION. BOTTLE



096zx043
Freund L.B., Suresh S.
MATÉRIAUX COUCHES MINCES
THIN FILM MATERIALS
English
Livre : 24,7 cm, 552 p., nbses fig., tab. et ref.
Cambridge, New York
2008
978-0-521-52977-8
£35.00

This book provides a comprehensive and organized exposition of the subject of thin film mechanical behavior. Thin films play an important role in many technological applications: microelectronic devices, magnetic storage media and surface coatings. This valuable resource gives readers a comprehensive coverage of stress, defect formation and surface evolution in thin films. An effort is also made to link the scientific theory to a broad range of practical applications through experiments, simulation, historical notes, case studies and exercises after each chapter. This book, beautifully written, contains many illustrations, micrographs, and problems. Including also an index, useful references, a bibliography, it is recommend as an essential read for anyone working in any area of thin film deposition: engineers, materials scientists and physicists.
COUCHE MINCE. CONTRAINTE. DEFAUT. SURFACE. DISLOCATION. DECOLLEMENT. TRANSFERT MASSE. FLAMBAGE
THIN FILM. STRESS. DEFECT. SURFACE. DISLOCATION. DELAMINATION. MASS TRANSFER. BUCKLING

096zx046
Damase J., Keller C.
BRIOUDE, LA BASILIQUE DE SAIN-JULIEN DANS LA LUMIÈRE DE KIM EN JOONG
BRIOUDE, SAINT-JULIEN BASILICA IN THE LIGHT OF KIM EN JOONG
French
Livre : 31 cm, 220 p., nbses fig. et ref.
Editions du Cerf, Paris
2009
978-2-204-08973-9
44 Euros



L'artiste dominicain, le Père Kim En Joong, l'un des maîtres de l'abstraction contemporaine, a réalisé, avec les Ateliers LOIRE de Chartres, les 36 vitraux pour la basilique Saint-Julien de Brioude, une des plus grandes églises d'Auvergne. Cette réalisation étant la plus importante des dernières années par la surface totale des baies à créer avec une superficie d'environ 160m2. « Une église doit être la Jérusalem céleste, une ville de lumière et de paix. Tous ceux qui entrent dans la basilique doivent être invités à l'élévation », dit le peintre et dominicain. Véritable ode à la lumière et aux couleurs, au geste épuré et à la ligne informelle, les vitraux de Kim En Joong illuminent les façades de cet édifice. À chaque vitrail, l'artiste a attribué l'image d'un prophète ou d'un saint et pour chacun une couleur domine. Il ne s'agit pas d'une représentation classique de ces hautes figures de la Bible. Kim En Joong dépasse la forme pour atteindre l'esprit car « C'est dans la vibration des couleurs que doit transparaître ce qui ne peut jamais être représenté », nous explique-t-il. L'ouvrage est richement illustré avec les images de Joël Damase, photographe illustrateur depuis une vingtaine d'années passionné par la peinture et l'architecture.
ART. VERRE CONTEMPORAIN. VITRAIL. EGLISE
ART. MODERN GLASS. STAINED GLASS. CHURCH

BREVETS

VITRAGE RÉSISTANT AUX BALLES PERFORANTES

Saint-Gobain Glass

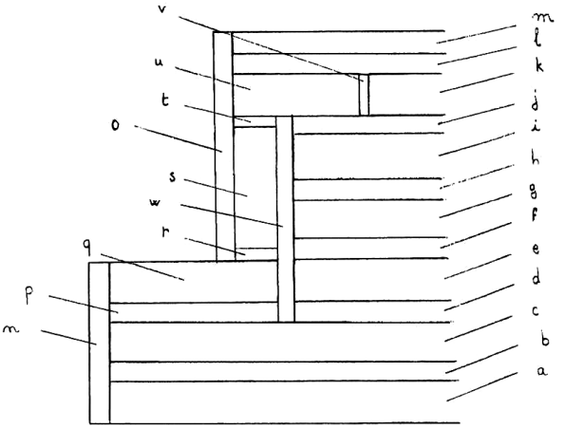
N° de publication FR 2 920 764 - A1 (07 57425), déposée le 7 septembre 2007, publiée B.O.P.I. N° 11, 13 mars 2009, 14 p., 1 fig., 1 tab.

Structure feuilletée transparente anti-balles et/ou anti-éclats comportant trois empilements de feuilles de verre (a, c; e, g, i; k) toutes reliées entre elles par des couches adhésives intercalaires (b, d, f, h, j), dans laquelle

- le premier empilement (a, c) est voisin et en excroissance par rapport au second empilement (e, g, i), lui-même voisin et en excroissance par rapport au troisième empilement (k),
- une rapplique (q, s, u) en matériau anti-balles et/ou antiéclats est collée à la structure feuilletée sur la surface périphérique libre du premier empilement (a, c), le chant et la surface périphérique libre du second empilement (e, g, i) et le chant du troisième empilement (k),
- et une feuille transparente de matière plastique (m) est collée sur la rapplique (u) et la face libre du troisième empilement (k).

Procédé de fabrication, application de cette structure feuilletée, et vitrage la comprenant.

VERRE BLINDE. VERRE FEUILLETE. RESISTANCE CHOC. POLYCARBONATE



SUBSTRAT VERRIER À HYDROPHOBIE PERSISTANTE À HAUTE TEMPÉRATURE

Saint-Gobain Glass

N° de publication FR 2 928 642 – A1 (08 51568), déposée le 11 mars 2008, publiée B.O.P.I. N° 38, 18 septembre 2009, 18 p., 4 tab.

L'invention concerne un substrat verrier durablement hydrophobe et/ou oléophobe dans un environnement à 250 °C comprenant une couche monomoléculaire de silane hydrophobe et/ou oléophobe sur une surface de rugosité RMS comprise entre 1 et 40 nm.

Elle concerne également son procédé de préparation comprenant la formation par voie sol-gel d'une sous-couche à matrice minérale incorporant des billes de diamètres compris entre 5 et 100 nm, puis la formation d'un revêtement de silane conservant essentiellement la géométrie de surface de ladite sous-couche, notamment également par voie sol-gel.

PROC SOL GEL. HYDROPHOBE. COUCHE MINCE. SILANE. SUBSTRAT

ALLIAGE RÉFRACTAIRE, ASSIETTE DE FIBRAGE ET PROCÉDÉ DE FABRICATION DE LAINE MINÉRALE

Saint-Gobain Isover, Saint-Gobain Seva

N° de publication FR 2 924 442 - A1 (07 59451), déposée le 30 novembre 2007, publiée B.O.P.I. N° 23, 5 juin 2009, 22 p., 4 tab.

Alliage, caractérisé en ce qu'il contient les éléments suivants (les proportions étant indiquées en pourcentage pondéral de l'alliage) :

Cr 23 à 34 % ; Ti 0.2 à 5 % ; Ta 0.5 à 7 % ; C 0.2 à 1.2 % ; Ni moins de 5 % ; Fe moins de 3 % ; Si moins de 1 % ; Mn moins de 0.5 %

le reste étant constitué par du cobalt et des impuretés inévitables.

- Article pour la fabrication de laine minérale, notamment assiette de fibrage, réalisé en un tel alliage.

LAINE MINERALE. FIBRAGE FIBRE. ALLIAGE. RESISTANCE MECANIQUE

COMPOSITION SÉRIGRAPHIABLE SUR POLYVINYLBUTYRAL

Saint-Gobain Glass

N° de publication FR 2 928 929 - A1 (08 51768), déposée le 19 mars 2008, publiée B.O.P.I. N° 39, 25 septembre 2009, 16 p., 9 tab.

L'invention a trait à

- une composition adaptée à l'impression par sérigraphie d'une feuille de polyvinylbutyral destinée à faire partie d'un vitrage feuilleté, comportant au moins une résine polyvinylbutyral de masse moléculaire au plus égale à 50 000 et au moins un solvant;
- un procédé d'impression par sérigraphie d'une feuille de polyvinylbutyral destinée à faire partie d'un vitrage feuilleté, caractérisé en ce qu'on applique sur la feuille, à travers un écran de sérigraphie, une composition définie précédemment et en ce que l'épaisseur de la couche humide de composition appliquée compense la rugosité de la feuille;
- une feuille de polyvinylbutyral destinée à faire partie d'un vitrage feuilleté, et imprimée par sérigraphie au moyen d'une composition définie précédemment;
- un vitrage feuilleté comportant une telle feuille de polyvinylbutyral; et
- une application d'un tel vitrage feuilleté comme vitrage automobile dont une partie au moins de la périphérie est opacifiée, notamment noircie.

VERRE FEUILLETE. BUTYRAL POLYVINYLIQUE. SERIGRAPHIE. AUTOMOBILE

VITRE EN VERRE FEUILLETÉ

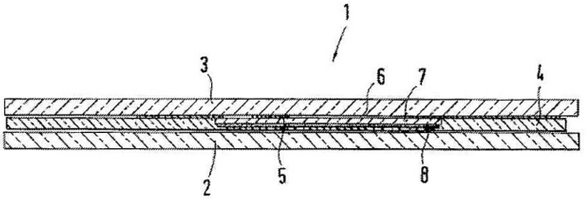
Dr. Ing. h.c.f. Porsche ag

N° de publication FR 2 929 939 - A1 (09 51057), déposée le 18 février 2009, publiée B.O.P.I. N° 42, 16 octobre 2009, 10 p., 2 fig.

La présente invention concerne une vitre en verre feuilleté, en particulier une vitre pour un véhicule automobile, comportant deux glaces, à savoir une glace extérieure et une glace intérieure, assemblées l'une à l'autre par une couche d'adhérence intercalée entre ces dernières.

Selon l'invention, il est prévu que sur une face intérieure de la glace extérieure est appliqué, au moyen d'un procédé de sérigraphie, au moins un négatif d'un signe graphique, un film de parement, qui se différencie par sa couleur de l'impression sérigraphique, étant disposé dans la zone dudit au moins un signe graphique et étant collé à la couche d'adhérence.

VITRAGE MULTIPLE. AUTOMOBILE. SERIGRAPHIE. INTERCALAIRE PLASTIQUE



VERRE DE BOROSILICATE ARRÊTANT LES RAYONS ULTRAVIOLETS POUR EMBALLAGES PHARMACEUTIQUES ET SON UTILISATION

Schott ag

N° de publication FR 2 930 773 – A1 (09 52806), déposée le 29 avril 2009, publiée B.O.P.I. N° 45, 6 novembre 2009, 9 p., 1 tab.

L'invention concerne un verre de borosilicate qui offre dans le domaine visible une transmission τ d'au moins 80 % à la longueur d'onde de lumière de 400 nm, et dans le domaine UV, une transmission t de moins de 0,1 % aux longueurs d'onde inférieures à 260 nm, qui présente une température de transition vitreuse Tg de 550 à 590 °C et une température de travail TA de 1100 à 1200 °C, et qui contient, en pourcentages pondéraux rapportés aux oxydes, de 60 à 80 % de SiO2, de 5 à 15 % de B2O3, de 2 à 10 % de Al2O3, de 0,1 à 7 % de TiO2, de 3 à 10 %, au total, des oxydes de métal alcalin Li2O, Na2O et K2O, de 0,5 à 10 %, au total, d'oxydes de métaux alcalino-terreux, de 0 à 3 % de ZrO2 et de 0 à 0,2 % de Fe2O3.

Un tel verre est bien approprié pour l'emballage de substances sensibles aux rayons UV, tels les produits pharmaceutiques, et permet un contrôle visuel de la qualité du contenu.

CONTROLE QUALITE. VERRE BOROSILICATE. VERRERIE PHARMACEUT. RAYON ULTRAVIOLET

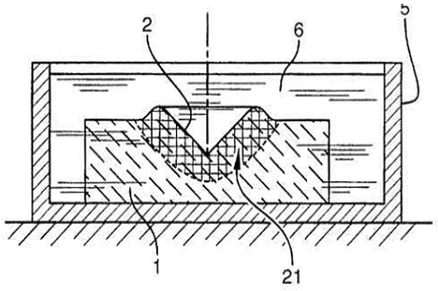
PROCÉDÉ POUR RÉALISER UNE MICRO GRAVURE À LA SURFACE D'UN MATÉRIAU

CNRS, Universite de Rennes 1

N° de publication FR 2 924 425 - A1 (07 08430), déposée le 3 décembre 2007, publiée B.O.P.I. N° 23, 5 juin 2009, 21 p., 10 fig., 2 tab.

Le procédé consiste tout d'abord à sélectionner le matériau (1) dans la famille des verres, des vitrocéramiques, ou des céramiques, à base d'au moins un oxyde, puis à former par application d'une contrainte mécanique, estampage par exemple, une empreinte micrométrique (2) en creux dans ladite surface (10), et enfin à immerger cette surface (10) dans une solution aqueuse (6) dont le pH est supérieur à 7 durant un temps suffisant pour provoquer une dissolution préférentielle de la matière (21) située à la périphérie de ladite empreinte (2) de manière à y creuser une cavité constitutive de la vmicro gravure.

NANOGRAVURE. OXYDE. SURFACE



PIÈCE EN FORME DE PLAQUE DE VERRE OU EN VITROCÉRAMIQUES, NOTAMMENT TABLETTE OU ÉTAGÈRE

Schott VTF

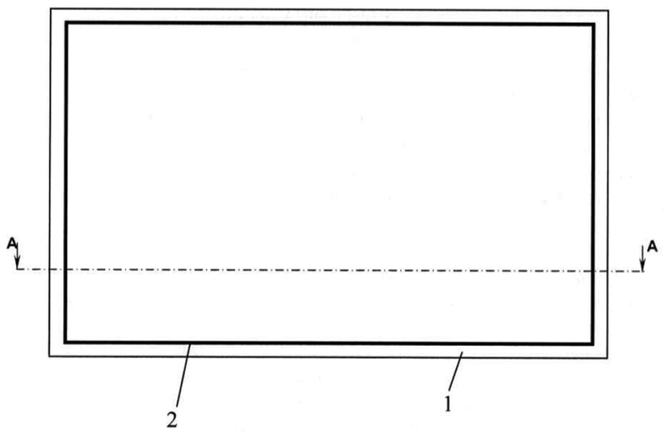
N° de publication FR 2 931 045 - A1 (08 53226), déposée le 19 mai 2008, publiée B.O.P.I. N° 47, 20 novembre 2009, 8 p., 2 fig.

La présente invention a pour objet une pièce (1) en forme de plaque en verre ou en vitrocéramique, notamment une tablette ou une étagère.

Pièce caractérisée en ce qu'elle est pourvue sur tout ou partie d'au moins une de ses faces, près des bords, d'une surépaisseur (2) en forme de cordon.

L'invention est plus particulièrement applicable dans le domaine des équipements domestiques.

TABLETTE. VITROCERAMIQUE. PLAQUE. EQUIPEMENT DOMESTIQUE



PROCÉDÉ D'ÉLABORATION DE VERRE

Saint-Gobain Glass

N° de publication FR 2 928 145 - A1 (08 51371), déposée le 3 mars 2008, publiée B.O.P.I. N° 36, 4 septembre 2009, 28 p., 2 tab.

L'invention a pour objet un procédé continu d'élaboration de verre comprenant les étapes successives d'enfournement de matières premières pulvérulentes, d'obtention d'un bain de verre par fusion, d'affinage puis de refroidissement. Le procédé est caractérisé en ce que l'on bulle un gaz oxydant au sein dudit bain de verre après l'étape d'affinage.

OXYDOREDUCTION. FUSION VERRE. AFFINAGE VERRE. PROC CONTINU

COMPOSITION À BASE DE POLYMÈRE GREFFÉ POLYAMIDE ET SON UTILISATION DANS LES MODULES PHOTOVOLTAÏQUES

Arkema France

N° de publication FR 2 930 556 - A1 (08 52849), déposée le 28 avril 2008, publiée B.O.P.I. N° 44, 30 octobre 2009, 42 p., 2 fig., 2 tab.

La présente invention a pour objet une composition thermoplastique comprenant un polymère greffé polyamide comprenant un tronc en polyoléfine contenant un reste d'au moins un monomère insaturé ayant réagi avec au moins un greffon en polyamide.

L'invention se rapporte également à des structures, en particulier des structures multicouches comprenant cette composition. Une des structures préférées de la présente invention est un module photovoltaïque comprenant cette composition.

La composition selon l'invention peut être avantageusement utilisée comme liant, comme encapsulant. Elle est également utilisée dans les panneaux solaires et les vitres feuilletées.

MODULE PHOTOVOLTAIQUE. POLYOLEFINE. ENCAPSULAGE. POLYMERE. VERRE FEUILLETE

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