



LANTHANIDE DOPED LEAD BORATE GLASSES FOR OPTICAL APPLICATIONS



LANTHANIDE DOPED LEAD BORATE PDF



LANTHANIDE-DOPED GLASSES AS FREQUENCY-CONVERTER FOR HIGH



FABRICATION OF LANTHANIDE-DOPED GLASSES AND THEIR POSSIBLE









lanthanide doped lead borate pdf

Download PDF Download. Share. Export. Advanced ... Lanthanide-doped borate glasses represent an attractive alternative as frequency-converter for white-light generation. ... Even small amounts of lanthanide ions in the glass and glass ceramics lead to noticeable changes in thermal diffusivity.

Lanthanide-doped glasses as frequency-converter for high

The lanthanides were prepared in two types of glass matrices i.e. borate and silicate systems. The borate is of interest as the composition used has not been reported in the available literature. The silicate matrix used is a well established commercial composition. The prepared glasses were characterised using a range

FABRICATION OF LANTHANIDE-DOPED GLASSES AND THEIR POSSIBLE

a b s t r a c t Different concentrations of Ho³⁺-doped lead borate titanate aluminum fluoride (LBTA₂FHo) glasses with chemical composition of PbO–H₂BO₃–TiO₂–AlF₃–Ho₂O₃ were ...

Electronic spectroscopy of trivalent lanthanide ions in

Because of the potential applications of lanthanide-doped nanocrystals in display devices, optical communication, solid-state lasers, catalysis, and biological labeling, the controlled synthesis of these new nanomaterials has sparked considerable interest. Nanosized phosphorescent or optoelectronic devices usually exhibit novel properties, depending on their structures, shapes, and sizes, such ...

Lanthanide-Doped Nanocrystals: Synthesis, Optical-Magnetic

Electronic spectroscopy of trivalent lanthanide ions in lead zinc borate glasses Adolfo Speghini , Massimo Peruffo , ... for lanthanide ions, ... This D21 57 3?F transitions of the Eu doped lead zinc borate^{1 01} behaviour is due to the nephelauxetic effect [18], that is glasses decrease as the amount of PbO increases [21].

Electronic spectroscopy of trivalent lanthanide ions in

effects of metal and semiconducting nanoparticles on the fluorescence and optical band gap of dy³⁺ doped lead borate and bismuth borate glasses. ... 1.1.2 lanthanide doped glass es ...

(PDF) EFFECTS OF METAL AND SEMICONDUCTING NANOPARTICLES ON

Absorption and Emission Spectral Studies of Lanthanide Ions in Lead Oxyfluoride Glasses ... the results of the optical properties of rare earth ions doped in the lead based oxyfluoride ... the results of our absorption and emission spectral studies of lanthanide ions in the PbO-PbF₂ oxyfluoride glass system, are covered

Chapter 5 Absorption and Emission Spectral Studies of

Nonlinear optical studies of lead lanthanum borate glass doped with Au nanoparticles. ... Consequently, the glass formation region, properties and structure of lanthanide borate glasses have been studied ... The room temperature UV-Vis absorption spectra for Au-doped lead lanthanum borate and base glass before and after annealing are shown in ...

Nonlinear optical studies of lead lanthanum borate glass

and Ir) ion-doped lead borate glass. We have previously investigated the corresponding properties of 3d TM ion-doped glasses.^{9,10} The aims of these studies are to provide a solid understanding of the redox and spectral behaviours of TM ions in these glasses as a prerequisite to co-doping with lanthanide

Optical properties of selected 4d and 5d transition metal

Lanthanide and lanthanide doped glasses have received many attentions as lanthanide doped glasses offer a large, new and important application possibility especially in the area of optical communication. In the 1940s and 1950s, many lanthanum oxide-based new optical glasses were investigated where at that time, lanthanum borate glass and ...

EFFECT OF LANTHANUM OXIDE ON OPTICAL PROPERTIES OF ZINC



Our results greatly deepen the understanding of the structural and photophysical properties of lanthanide-doped lead halide perovskite NCs, and highlight the possibility to use the chemistry of defects to tailor the doping efficiency of halide perovskite NCs.

Insights into the local structure of dopants, doping

Laser Spectroscopy of Rare Earth Ions in Lead Borate Glasses and Transparent GlassCeramics 1 W. A. Pisarskia, *, Abstract—Rare earth doped lead borate glasses and transparent glassceramics have been studied using optical spectroscopy at the beginning and the end of lanthanide series [15], vibronic contributions to the transition ...

Laser Spectroscopy of Rare Earth Ions in Lead Borate

Electronic spectroscopy of trivalent lanthanide ions in lead zinc borate glasses. ... Electronic spectroscopy of trivalent lanthanide ions in lead zinc borate glasses. Download. Electronic spectroscopy of trivalent lanthanide ions in lead zinc borate glasses ... This D 0 ? 7 F 1 transitions of the Eu 3+ doped lead zinc borate behaviour is ...

Electronic spectroscopy of trivalent lanthanide ions in

Sm³⁺ doped lead fluoroborate glasses [20] while Courrol, L.C. et al. (2003) studied on the fluorescence life time of lead fluoroborate glasses doped with Nd³⁺ [21]. Due to the exciting properties of neodymium doped borate glass, therefore in this work a series of Nd³⁺ doped borate glass was a synthesis via melt quenched technique.

Physical, Structural, and Luminescence Studies of Nd Doped

Energetic, electronic and optical properties of lanthanide doped TiO₂: An absorption charge transition levels and optical properties of lanthanide doped anatase TiO₂ ... catalysts which lead to the formation of photocatalysts with varying physico-chemical ...

Energetic, electronic and optical properties of lanthanide

Spectroscopic and physical properties of Nd³⁺-doped alkali lead borate glasses of type 20R 2 O · 30PbO · 49.5B 2 O 3 · 0.5Nd 2 O 3 (R = Li and K) and alkaline-earth lead borate glasses 20RO · 30PbO · 49.5B 2 O 3 · 0.5Nd₂O₃ (R = Ca, Ba, and Pb) have been investigated.

Optical properties of alkali and alkaline-earth lead

Read "White light emission from Dy³⁺ doped sodium–lead borophosphate glasses under UV light excitation, Journal of Molecular Structure" on DeepDyve, the largest online rental service for scholarly research with thousands of academic publications available at your fingertips.

White light emission from Dy 3+ doped sodium–lead

Borate glass is a suitable host for luminescent lanthanide ions. Apart from its good lanthanide ion solubility, borate glass provides a high thermal, chemical, and mechanical stability. In this work, various luminescent borate glasses using boron oxide as network former and lithium oxide as network modifier are prepared with as

A. Charlotte Rimbach , Franziska Steudel 1* 1,2

Study of A and B sites order in lanthanide-doped lead titanate ferroelectric system - Volume 31 Issue 1 - A. Pentón-Madrigal, Y. Mendez-González, A. Peláiz-Barranco, F. Calderón-Piñar, L. A. S. de Oliveira, J. Belhadi, Y. Gagou

Study of A and B sites order in lanthanide-doped lead

Optical properties of lead borate glasses containing Dy³⁺ ions Joanna Pisarska Optical spectroscopy and energy transfer in Tm³⁺-doped metaphosphate laserglasses P Babu, Hyo Jin Seo, Kyoung Hyuk Jang et al. Upconversion mechanisms of a praseodymium-doped fluoride fibre amplifier A Remillieux, B Jacquier, C Linares et al.

3+ and Tm3+ - Institute of Physics

PDF Abstract ... glasses gives rise to broad features in their optical spectra with widths of up to several thousand cm⁻¹ when they are doped with lanthanide ions (Ln³⁺). By contrast, ... The Eu³⁺-doped lead borate glass samples, denoted as ...

Glass composition and excitation wavelength dependence of

Rare Earth Doped Lanthanum Calcium Borate Polycrystalline Red Phosphors ... Single-phased Sm³⁺ doped lanthanum



calcium borate (Sm La 2 ... Because of lanthanide contraction, rare earth ions have similar radius, coordination environment, and physical-chemical properties.

Research Article Rare Earth Doped Lanthanum Calcium Borate

Recent advances in the chemistry of lanthanide-doped upconversion nanocrystals Feng Wang and Xiaogang Liu* Received 13th October 2008 First published as an Advance Article on the web 12th February 2009

Recent advances in the chemistry of lanthanide-doped

ULTRASONIC AND THERMAL PROPERTIES OF BORATE AND PHOSPHATE GLASSES DOPED WITH BISMUTH AND LEAD Sidek Hj. Abd. Aziz, Hamezan Ahmad, Zaidan A Wahab, Zainal Abidin Sulaiman, Zainal Abidin Talib, A. Halim Shaari Glass Research Laboratory Faculty Science, Universiti Putra Malaysia 43400 UPM Serdang, Selangor
ABSTRACT

ULTRASONIC AND THERMAL PROPERTIES OF BORATE AND PHOSPHATE

has been made with one lanthanide ion, it can theoretically be made with a neighboring lanthanide using the same synthetic method. Because the atomic radii, common oxidation state, and general properties of the lanthanides are so similar, they are interchangeable to an extent. Thus, lanthanides are ideal for

Paramagnetic Nanocrystals: Remarkable Lanthanide-Doped

Optical Properties of Rare Earth Ions in Lead Germanate Glasses. Mario Wachtler ... Structural and luminescence properties of Eu^{3+} , Dy^{3+} and Tb^{3+} ions in lead germanate glasses obtained by conventional high ... Electronic spectroscopy of trivalent lanthanide ions in lead zinc borate glasses, Journal of Alloys and Compounds ...

Optical Properties of Rare Earth Ions in Lead Germanate

Luminescence and energy transfer phenomena in lanthanide ions doped phosphor and glassy materials G. Bhaskar Kumara, B. Vengla Rao, B. Chandra Babub, Graham Hungerford, Sooraj H Nandyalad, J.D. Santose This chapter aims to explain the basic mechanism of phosphor materials and the luminescence behaviour of glasses doped with certain rare earth ions.

Current Trends on Lanthanide Glasses and Materials

The lanthanide metals, or lanthanoids, are elements of atomic number 57 (Lanthanum) through 71 (Lutitium). ... (and a separate volume on Cerium) that you can download as PDF files at: ... The following schematic is a 2-D representation of Cr^{3+} doped into alumina.

Luminescence from Lanthanide-Doped Nanoparticles

Background: Solid state lighting has the potential to be more energy efficient, more durable and longer lasting than current incandescent or fluorescent lighting technology. Comparison of Lighting Technologies (Light Emitting Diodes (odes (LEDs) for General Illumination, An OIDA Technology Roadmap Update 2002, November 2002.).

Synthesis of Lanthanide-Doped Nanoparticles with

properties [4]. In the case of Ln^{3+} doped materials, these properties could lead to the possible development of self-frequency-doubling lasers. According to previous results, lead borate glasses are promising amorphous host matrices to incorporate rare earth ions.

Vol. 5, Issue 2, February 2016 Optical Studies of Rare

organic environment. Inorganic compounds doped with lanthanide ions are widely used as the luminescent material in lighting and displays, optical amplifiers, and lasers. The luminescence of trivalent lanthanide ions is a result of transitions within the partially filled 4f shell of the ions. These transitions are parity forbidden.

Lanthanide-Doped Nanoparticles with Excellent Luminescent

ESA, normally doped with low Lanthanide ion concentration (<1%), is responsible for the single ion based process. As depicted in Figure 1 a, an individual ion with a high energy level, sequentially absorbs two or more pump photons.

Current Advances in Lanthanide-Doped Upconversion



Characterising lanthanides in glasses for optical applications Glasses are essential materials with a multitude of uses and many forms. In the area of optoelectronics there is an

Time Resolved Fluorescence Application Note TRFA - Horiba

Highly efficient lanthanide doped upconverting nanocrystals: there is still plenty of room Damien Hudry 16:00-16:15 ... #62
Nisha Deopa Photoluminescence investigations on Sm³⁺ doped zinc lead alumino borate glasses for photonic applications #80
Pablo Lopez-Iscoa Fabrication and characterization of erbium doped bioactive

PRE'17 ADVANCE PROGRAM - news.uniroma1.it

properties of lanthanides doped multicomponent borate glasses 2014 10. D. Rajesh Concentration effect on spectroscopic ...
"Spectroscopic investigations of Nd³⁺ ion in Lead acetate glass". Bulletin of Materials Science, Vol.19, No.3, 581-586, 1996.
17.

Name : Dr. Y.C. RATNAKARAM - Sri Venkateswara University

Alemi et al. (2005) reported the density changes in cadmium lead borate glasses. The conversion of three fold to four fold coordination of boron atoms in the structure of glasses was observed by them. Alemi et al. (2008 b) reported increase in density of terbium oxide doped sodium borate glasses.

CHAPTER 2 REVIEW OF LITERATURE 2.1 Introduction

PbTiO₃ thin films doped with the elements of lanthanide series 116 IX.2. Raman scattering from pure and lanthanide ions doped PbTiO₃ thin films 121 IX.3. Refractive indices and extinction coefficients of lanthanide ions doped lead titanate thin films 122 IX.4. Room temperature dielectric properties of pure and doped lead titanate thin films 124 ...

Lanthanide Ions Doping Effects on Structural

Copper -doped Lead Borate Glasses . A.M. Abdelghany* Spectroscopy Department National Research Center, Dokki, Cairo, Egypt . Abstract: Samples from binary lead borate glass system doped with minor quantities of copper have been prepared by conventional melt-annealing technique.

Combined DFT, Deconvolution Analysis for Structural

Hyperfine Interactions at Lanthanide Sites in Europium Doped Oxide Glasses G. Concas, F. Congiu, G. Spano, ... order of the lanthanide sites in a glass has been estimated, by comparing the glass to the corresponding crystalline material, in trivalent europium metaphos-

Hyperfine Interactions at Lanthanide Sites in Europium

This book entitled 'Current Trends on Lanthanide Glasses and Materials' is an innovative monograph covering the latest developments in lanthanide doped glasses and phosphors materials. This book entitled 'Current Trends on Lanthanide Glasses and Materials' is an innovative monograph covering the latest developments in lanthanide doped ...

Current Trends on Lanthanide Glasses and Materials

Enthalpies of formation of lanthanide oxyapatite phases A.S. Risbud Department of Applied Physics, California Institute of Technology, MC 128-95, ... cence efficiency when doped with other rare-earth ... room temperature into the lead borate solvent (2PbO ?

Enthalpies of formation of lanthanide oxyapatite phases

lanthanide ions doped LaVO₄ core-shell nanoparticles through down-conversion of a single 280 nm light source. The down-conversion mechanisms involved in the generation of light have been discussed in detail. Preparation of luminescent lanthanide ions-doped LaVO₄ core-shell nanoparticles has been discussed and they show energy transfer from

Lanthanide-doped core-shell nanoparticles for solid state

The Raman spectra of the Sm³⁺ doped lead fluoroborate Fig. 2. The Raman spectra of the Sm³⁺ doped lead fluoroborate glasses for (a) parallel polarisation HH and (b) crossed polarisation glasses for (a) parallel polarisation HH and (b) crossed polarisation HV in the low frequency region. HV in the high frequency region. 3.



Optical properties of Sm 3+ doped lead fluoroborate

For example, we can encapsulate lanthanide-doped NPs and PeQDs into SiO₂ or polystyrene NPs to improve the chemical stability, and employ dye-sensitized lanthanide-doped NPs as an antenna to ...

Near-infrared-triggered photon upconversion tuning in all

Pisarska J, Pisarski W A (2011) Lanthanide-Doped Lead Borate Glasses for Optical Applications (Materials Science and Technologies) ISBN-10: 1616682922, ISBN-13: 978-1616682927 Google Scholar Prasad PN (2004) Nanophotonics.

The influence of CdSe and ZnSe nanoparticles on the

lead to change in symmetry and composition and thus create various defects viz. cation or oxygen vacancies, which can drastically influence the band structures and this is the main factor in determining the electronic structures. In particular, these materials can accommodate lanthanide ions at the A-site or B-site, and these doped

Synthesis, Characterization and Photoluminescence

Doping is a widely applied technological process in materials science that involves incorporating atoms or ions of appropriate elements into host lattices to yield hybrid materials with desirable ...

Simultaneous phase and size control of upconversion

Abstract: Transparent glass-ceramic materials containing PbWO₄ crystalline phase were fabricated during heat treatment of lead borate glasses singly doped with Dy³⁺ and Er³⁺ ions. Luminescence spectra of lanthanide ions in precursor glasses and glass-ceramics were examined under different excitation wavelengths.