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DOKTORANTLAR VA DOKTORANTLARNING

TAFAKKUR VA TALQIN

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MODULATED MAGNETIC STRUCTURES AND MODELS OF THEIR THEORETICAL EXPRESSION

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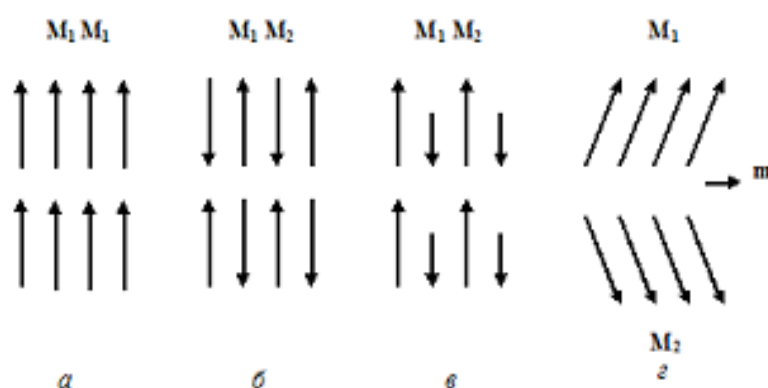
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Abstract – This paper is devoted to study of physical processes occurring in weak ferromagnetics iron - borate doped diamagnetic magnesium under external influence.

Key words: Modulated magnetic structure, linear magnetic tourefracting rays domain structure.

In today's world, where the division of physics into many disciplines is taking place, the ideas and ideas that generalize the different branches of physics play an important role. Such synthesizing assumptions can lead to scientific ideas related to phase transitions. The ideas of phase transitions are not only successfully applied in various fields of modern physics, but also in biology, chemistry, geology, and even economics and other social sciences. Phase transitions are the subject of traditional research in condensed matter physics, and magnetically ordered crystals are known to be the classic object of this research.



Picture 1. Magnetic arrangement of crystals: a - ferromagnetism, b - antiferromagnetism, c - ferrimagnetism, g - weak ferromagnetism (M_1 , M_2 - magnetic moments of neighboring atoms; m - weak ferromagnetic moment). is

devoted to the study of changes in physical processes that occur as a result of external influences.

Iron borate is a green, transparent, optically anisotropic crystal in the spectral field of view. Below the Neel temperature, FeBO_3 remains an optical two-axis, one of the optical axes coinciding with the symmetry head axis (C_3 axis) [3]. At room temperature, the maximum absorption spectra of iron borate in the light spectrum are 0.62 and 0.88 μm , and the value of the absorption coefficient is a $\sim 50 \text{ cm}^{-1}$ [4,5]. These two maxima in the absorption spectrum correspond to the separated states of Fe^{3+} ions in the crystal field. They can be associated with transitions between cases 4T_2 (4G) and 4T_1 (4G), which are excited from the ground state, i.e., 6A_1 (6S), respectively [1,2].

When a small amount of diamagnetic compounds was added to the iron borate, a change in its magneto-optic properties was observed without changing the Neel temperature [4].

Thus, the article presents the results of the study of changes in the magnetic properties of iron borate when a magnesium mixture is added and the properties of this change as a result of external influences (temperature, mechanical impact, magnetic field and light). This means that when the crystal is exposed to light, the displacement of Fe^{4+} ions is metastable, and when light is received, the Fe^{4+} ions return to their initial state over a period of time, i.e. the photoinduced changes in the magnetic parameters of the crystal "dissipate" in the absence of additional illumination. Similar photomagnetic phenomena can be observed in the $\text{FeBO}_3:\text{Mg}$ crystal.

References:

1. Shavkatovich S.F., Baxtiërovna N.Y. Changes occurring in ferromagnets by adding some mixture // Scientific reports of Bukhara State University 4:1 (2020), pp 8-13.

2. Файзиев Ш.Ш., Саидов К.С., Аскарлов М.А. Зависимость магнитно модулированной структуры от ориентации поля в кристалле. //Вестник науки и образования (2020) № 18(96) Часть 2 С 6-9.
3. Bakhtiyorovna N.Y., Shavkatovich S.F. Modulated magnetic structures and models of their Theoretical expression// ACADEMICIA: An International Multidisciplinary Research Journal Vol. 11 Issue 1, January (2021), pp 1172-1175

КЎП ФУНКЦИОНАЛ ДАТЧИКЛАРДА МАЙДОН ТРАНЗИСТОРЛАРИНИНГ ҚЎЛЛАНИШИ

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Аннотация: *Мақолада эпитаксиал структура асосида тайёрланган майдон транзистори ўрганилган бўлиб, сток токининг тўйиниши механизмига кўра умумий исток уланиш режими ёки кучланиш орқали майдон транзистори токи стабиллаш хусусияти аниқланган.*

Калит сўзлар: *майдон транзистори, структура, затвор соҳа, стабиллаш токи, каналнинг динамик қаршилиги, интеграл оптика, концентрация, градиент, сток, исток.*

Ўзбекистонда сўнгги йилларда илмий-тадқиқот фаолияти самарадорлигини оширишга, ижтимоий ва иқтисодий ривожланишда, мамлакатни демократик янгилашда фаннинг ролини кучайтиришга қаратилган кенг кўламли ишлар амалга оширилмоқда. Замонавий саноат ишлаб чиқариши, энергетика, қишлоқ хўжалиги ва иқтисодиётнинг бошқа тармоқлари, фан ва техниканинг ғоят муҳим илмий ва технологик муаммоларини ҳал қилишга катта эътибор қаратилмоқда. Шу билан бирга мамлакатимизда яримўтказгичлар физикаси соҳасига ҳам алоҳида эътибор қаратилмоқда. Интеграл оптика қурилмаларининг ишлашининг ишончлилигини ошириш учун турли хил турдаги биполяр ва майдон

MUNDARIJA:

I-ШҮБА АНИҚ ВА ТАБИИЙ ФАНЛАР	
5A140202 – Физика (йўналишлар бўйича)	
<i>O.X.Hamidov</i>	<i>Muqaddima.....3</i>
O.C.Қаҳҳоров, Ш.Х.Тўраев	<i>Олий таълим тизимида рақобатбардош кадрлар тайёрлашнинг бошқарув самарадорлигини баҳолаш.....5</i>
S.Q.Qahhorov F.Yo.Ramazonova	<i>Fizika sohasida ta'lim sifatini oshirish va ilmiy tadqiqotlarni rivojlantirishning bugungi kundagi amaliy ahamiyati.....13</i>
<i>E.S. Nazarov,</i> <i>Sh.O. Sobirov</i>	<i>Elastomeres are molecular of materials structure and macroscopic properties16</i>
<i>A.A. Тураев,</i> <i>C.M. Рахимова</i>	<i>Фотозэлектрические характеристики полевого транзистора в режиме отсечки канала.....21</i>
<i>I.I. Raxmatov,</i> <i>B. Sirojeva</i>	<i>Kristallik va amorf quyosh panellarini qiyosiy solishtirish.....27</i>
<i>E.S. Nazarov,</i> <i>Sh.A. Hamroqulova</i>	<i>Quyosh energiyasi texnologiyalarini rivojlantirish tendensiyalari va istiqbollari.....31</i>
<i>D.R. Djurayev,</i> <i>A.A. Ahadov.</i>	<i>Vodorod energiyasi va o'ta o'tkazuvchanlik.....34</i>
<i>Sh.Sh. Fayziyev,</i> <i>Sh.Q. Nizomova</i>	<i>Magnit moddalarning domen tuzilishi.....39</i>
<i>Sh.Sh. Fayziyev,</i> <i>M.A. Askarov</i>	<i>Paxta moyida yorug'likning yutilish.....41</i>
<i>L.I. Ochilov,</i> <i>Z.N. Narzillayeva</i>	<i>Quyosh chuchitgichi xossalari yonilg'i quyish shaxobchalariga qo'llashning matematik modelini hisoblash, algoritmi va dasturiy ta'minot tuzish.....44</i>
<i>И. Рахматов,</i> <i>И. Исмоилова</i>	<i>Физика таълим йўналишида мустақил ишларни кредит-модуль тизимида ташкил этиши.....48</i>
<i>I.Raxmatov,</i> <i>S. Salimov</i>	<i>Frenel linzasi va uning qo'llanilishi.....54</i>
<i>Э.С.Назаров,</i> <i>Ш.О.Собиров,</i> <i>И.И.Пуримов</i>	<i>Композитларнинг техник хоссаларини тадқиқ этиши.....60</i>
<i>N.B. Yuldasheva ,</i> <i>Sh.Q. Nizomova</i>	<i>Modulated magnetic structures and models of their theoretical expression.....65</i>
<i>A.A.Тураев,</i> <i>O.Ж.Жумаев</i>	<i>Кўп функционал датчикларда майдон транзисторларининг қўлланиши.....67</i>

Ж.Ш. Ҳайитов	
М.А.Жунайдуллаев	<i>Ёшларни ҳарбий-ватанпарварлик туйғуси руҳида шаклланишида ҳуқуқий маданиятнинг роли.....1410</i>
А.М.Назаров С.У. Аминова	<i>Особенности психологической защиты спортсменов.....1416</i>
М.Б.Нусратова	<i>Спортчилар фаолиятида психологик муҳофазанинг ўрни ва аҳамияти... ..1421</i>
SH.S.Tilavova	<i>Mang'it hukmdori amir haydar siyosiy faoliyatining tarixiy manbalar asosida yoritilishi... ..1427</i>
D.I. Maxmudova	<i>Iqtidorli o'quvchilarni pedagogik jihatdan tarbiyalash va rivojlantirishning asosiy prinsiplari.....1432</i>
L.R. Djurayeva	<i>The importance of innovative pedagogical activity in improving the quality of education.....1436</i>
Y.U.Narzulloyev	<i>Yoshlar ma'naviyatini yuksaltirishda muomala madaniyatining o'рни.....1441</i>
D.K. Isabayeva	<i>Talabalarda milliy iftixor tuyg'usini shakllantirishning asosiy omillari1445</i>
H. Yoqubova	<i>Boshlang'ich sinf o'qish darslarida lug'at ustida ishlash (anvar obidjon asarlari misolida).....1448</i>
I.O. Hamidova	<i>Various definitions to the concept "spirituality"1453</i>
O.I. Jalolov, F.R. Karimov	<i>Aniq integralni taqribiy hisoblash. Xosmas integrallar1458</i>
С.И. Назаров, А.А. Қўчқоров	<i>Мочевинаформалдегид ва тетраэтоксисилан асосида олинган кремнийорганик (олиго)полимернинг дифференциал термик таҳлили.....1463</i>