

Институт физики

Кафедра физики конденсированного состояния

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Публикации

Статья

Magneto-Optical Properties of Electron Gas in a Chain of Planar Quantum Rings: Effect of Screening on the Signature of Quantum Phase Interference

Armen Harutyunyan, Vram Mughnetsyan, Albert Kirakosyan, Vidar Gudmundsson

Annalen der Physik 2025 2400337

Статья

Effect of two-dimensional non-local screening on characteristics of transition metal dichalcogenide monolayers

Vram Mughnetsyan, Aram Manaselyan, Ashot Movsisyan, Albert Kirakosyan

Semiconductor Science and Technology 2024 045016

Статья

Planar quantum dots: Theoretical approaches

Aram Manaselyan, Vram Mughnetsyan, Albert Kirakosyan

Encyclopedia of Condensed Matter Physics (Second Edition) 2024 297-307

Статья

Quasi-One-Dimensional Fröhlich Polaron Characteristics in ZnO Nanowires under the External Fields [Характеристики квазиодномерного фрëлиховского полярона в нанопроволоках ZnO во внешних полях]

A. Asatryan, A. Movsisyan, L. Vardanyan, S. Hayrapetyan, A. Kirakosyan

Известия НАН РА. Физика (Journal of Contemporary Physics (Armenian Academy of Sciences) 2024 287 - 293

Статья

Hofstadter-like spectrum and magnetization of artificial graphene constructed with cylindrical and elliptical quantum dots

Maryam Mansoury, Vram Mughnetsyan, Aram Manaselyan, Albert Kirakosyan, Vidar Gudmundsson,

Vigen Aziz-Aghchegala

Physics Letters A 2023 129115

Статья

Simultaneous effects of the confinement of polar optical phonons and spin-orbit coupling on the free carrier absorption of a nanowire

Статья

Signature of miniband nodes in magneto-optical properties of one-dimensional superlattice of planar quantum rings

Maryam Mansoury, Vigen Aziz-Aghchegala, Vram Mughnetsyan, Albert Kirakosyan, Vidar Gudmundsson
Physics Letters A 2022 128324

Статья

Electron-hole interaction in cylindrical quantum dots

Vram Mughnetsyan, Ashot Movsisyan, Albert Kirakosyan
Physica E: Low-dimensional Systems and Nanostructures 2022 115366

Статья

Electronic and Magnetic Properties of Laser Dressed Quantum Dot and Ring with Rashba Spin-Orbit Coupling

Vram Mughnetsyan, Aram Manaselyan, Manuk Barseghyan, Albert Kirakosyan, Laura M. Perez, David Laroze
Springer Proceedings in Physics (Optics and Its Applications) 2022 145-154

Статья

Polaronic effects on the electron Raman scattering in a spherical anisotropic quantum dot

T.K. Ghukasyan, A.L. Asatryan, L.A. Vardanyan, A.A. Kirakosyan, A.L. Vartanian
Armenian Journal of Physics 2022 175-181

Образовательный Руководство

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ. մաս 2

Արթուր Կիրակոսյան, Արշակ Վարդանյան, Աննա Ասատրյան, Արամ Մանասելյան,
Վալերի Հարությունյան
2021 190

Статья

Interminiband absorption in a quantum ring superlattice in magnetic field with periodic vector potential

Vram Mughnetsyan, Ara Atayan, Albert Kirakosyan, Vigen Aziz-Aghchegala
Physica E: Low-dimensional Systems and Nanostructures 2020 113722(1-6)

Статья

Effective tuning of isotropic and anisotropic properties of quantum dots and rings by external fields

Manuk G. Barseghyan, Aram Manaselyan, Albert A. Kirakosyan, Laura M. Perez, David Laroze
Physica E: Low-dimensional Systems and Nanostructures 2020 113807(1-7)

Статья

Effect of spin-orbit coupling on the hot-electron energy relaxation in nanowires

A. L. Vartanian, A. L. Asatryan, A. G. Stepanyan, K. A. Vardanyan, A. A. Kirakosyan
International Journal of Modern Physics B 2020 2050322(1-13)

Статья

Influence of image charge effect on the binding energy of hydrogen-like donor impurity in a near-surface quantum well under transverse electric field

A.L. Vartanian, A.L. Asatryan, A.A. Kirakosyan, K.A. Vardanyan

Physica E: Low-dimensional Systems and Nanostructures 2019 1-4

Статья

Effect of anisotropic strain on the electronic characteristics of an InAs/GaAs honeycomb superlattice

Vram Mughnetsyan, Albert Kirakosyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2019 243-251

Статья

Effect of the impurity on the Aharonov-Bohm oscillations and the intraband absorption in GaAs/ Ga1-xAlxAs quantum ring under intense THz laser field

M.G. Barseghyan, V.N. Mughnetsyan, L.M. Perez, A.A. Kirakosyan, D. Laroze

Physica E: Low-dimensional Systems and Nanostructures 2019 91-97

Статья

Rashba splitting of Dirac points and symmetry breaking in strained artificial graphene

Vram Mughnetsyan, Aram Manaselyan, Manuk Barseghyan, Albert Kirakosyan, David Laroze

Physical Review B 2019 195132(1-8)

Образовательный Руководство

Ատոմի ֆիզիկա

Արթուր Շիրակոսյան

2019 224

Статья

Modeling of anisotropic properties of double quantum rings by the terahertz laser field

Henrikh M. Baghramyan, Manuk G. Barseghyan, Albert A. Kirakosyan, Judith H. Ojeda, Jean Bragard,

David Laroze

Scientific Reports 2018 6145(1-10)

Статья

Intense Terahertz Radiation Effect on Electronic and Intraband Optical Properties of Semiconductor Quantum Rings

H.M. Baghramyan, M.G. Barseghyan, A.A. Kirakosyan, D. Laroze

Physics of Quantum Rings 2018 411-445

Статья

Effect of interdiffusion and external magnetic field on electronic states and light absorption in Gaussian-shaped double quantum ring

V.L. Aziz Aghchegala, V.N. Mughnetsyan, A.A. Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2018 11-16

Статья

Spin relaxation mediated by spin-orbit and acoustic phonon interactions in a single-electron two-dimensional quantum dot

A.L. Vartanian, A.A. Kirakosyan, K.A. Vardanyan

Статья

Energy loss rate of hot electrons due to polar-optical phonon modes in a semiconductor nanowire under transverse electric field

A. Stepanyan, A. Asatryan, M. Yeranossyan, K. Vardanyan, A. Kirakosyan, A. Vartanian

Physica B: Condensed Matter 2018 340-346

Статья

Laser driven intraband optical transitions in two-dimensional quantum dots and quantum rings

M.G. Barseghyan, A.A. Kirakosyan, D. Laroze

Optics Communications 2017 571-576

<http://www.journals.elsevier.com/optics-communications>

Статья

Effect of interdiffusion and magnetic field on two-electron states in Gaussian-shaped double quantum rings

V.L. Aziz Aghchegala, V.N. Mughnetsyan, A.A. Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2017 157-163

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Effect of Rashba spin-orbit coupling and external magnetic field on electronic minibands in highly strained one-layer quantum ring superlattice

Vram Mughnetsyan, Aram Manaselyan, Albert Kirakosyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2017 10-18

<http://www.journals.elsevier.com/superlattices-and-microstructures>

Статья

Energy-loss rate of hot electrons due to confined acoustic phonon modes in a semiconductor quantum wire under transverse electric field.

A. Stepanyan, M. Yeranossyan, L. Vardanyan, A. Asatryan, A. Kirakosyan, A. Vartanian

Physica B: Condensed Matter 2017 102-107

<http://www.journals.elsevier.com/physica-b-condensed-matter>

Статья

Frohlich polaron in nanowire with Rashba and Dresselhaus spin-orbit couplings

Arshak Vartanian, Albert Kirakosyan, Karen Vardanyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2017 655-661

<http://www.journals.elsevier.com/superlattices-and-microstructures>

Статья

EFFECTS OF ELECTRIC FIELD AND IMAGE CHARGES ON THE IMPURITY-RELATED OPTICAL ABSORPTION COEFFICIENTS IN A SPHERICAL QUANTUM DOT

A.L. Vartanian, A.L. Asatryan, A.A. Kirakosyan, A.A. Mkhitarian, S.S. Avetisyan

Proceedings of the YSU A. Physical and Mathematical Sciences 2017 124-127

<http://www.ysu.am/science/en/journals>

Статья

ONE-DIMENSIONAL FRÖHLICH POLARON WITH SPIN-ORBIT COUPLING

K. Vardanyan, A. Kirakosyan, A. Vartanian

Вестник Российско-Армянского Университета: Физико-математические и естественные науки 2017
41-46

<http://science.rau.am/rus/50/701>

Статья

Strain distribution and band structure of InAs/GaAs quantum ring superlattice

Vram Mughnetsyan, Albert Kirakosyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2017 318-327

Статья

Elastic strain distribution in one layer quantum ring superlattice

V.N. Mughnetsyan, A.A. Kirakosyan

Proceedings of the YSU A. Physical and Mathematical Sciences 2017 121-123

Статья

Influence of lateralel ectric field on intraband optical absorption in concentric double quantum rings

H.M. Baghrmian, M.G.Barseghyan, D.Laroze, A.A.Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2016 81-89

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Impurity-modulated Aharonov-Bohm oscillations and intraband optical absorption in quantum dot-ring nanostructures

M.G. Barseghyan, A.Kh.Manaselyan, D.Laroze, A.A.Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2016 31-36

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Image Charge and Electric Field Effects on Hydrogen-like Impurity-bound Polaron Energies and Oscillator Strengths in a Quantum Dot

L.A. Vardanyan, A.L. Vartanian, A.L. Asatryan, A.A. Kirakosyan

JOURNAL OF ELECTRONIC MATERIALS 2016 5847-5852

<http://www.springer.com/materials/optical+%26+electronic+materials/journal/11664>

Статья

Electric field and image charge effects on impurity-bound polarons in a CdS colloidal quantum dot embedded in organic matrices

A.L.Asatryan, A.L.Vartanian, A.A.Kirakosyan, L.A.Vardanyan

Physica B: Condensed Matter 2016 70-74

<http://www.journals.elsevier.com/physica-b-condensed-matter>

Статья

Laser driven impurity states in two-dimensional quantum dots and quantum rings

D. Laroze, M.G. Barseghyan, A. Radu, A.A. Kirakosyan

Physica B: Condensed Matter 2016 1-4

<http://www.journals.elsevier.com/physica-b-condensed-matter>

Статья

Impurity-related intraband absorption in coupled quantum dot-ring structure under lateral electric field

M.G. Barseghyan, H.M.Baghrmian, D.Laroze, J.Bragard, A.A.Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2015 421-425

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Rashba Spin-Orbit Coupling in a Two-Dimensional Quantum Ring Superlattice

V. Mughnetsyan, A. Manaselyan, A. Kirakosyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2015 584-591

<http://www.journals.elsevier.com/superlattices-and-microstructures>

Статья

The influence of electric field on the quasi-confined and interface polaron basic parameters in a wurtzite nitride quantum wire.

A.L. Asatryan, K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

Journal of Physics: Conference Series 2015 012048/1-4

<http://iopscience.iop.org/journal/1742-6596>

Статья

Confined acoustic phonon-mediated spin relaxation in a twodimensional quantum dot in the presence of perpendicular magnetic field

K A Vardanyan, A L Vartanian, A G Stepanyan, A A Kirakosyan

Journal of Physics: Conference Series 2015 012043 /4pp

<http://iopscience.iop.org/journal/1742-6596>

Статья

Electron capture processes in quantum dots due to one-and two-phonon assisted transitions: The role of optical phonon confinement

A L Vartanian, K A Vardanyan, V N Mughnetsyan, A A Kirakosyan

Journal of Physics: Conference Series 2015 012017/4pp

<http://iopscience.iop.org/journal/1742-6596>

Статья

Effect of Phonon Confinement on Optical Phonon-Mediated Carrier Capture into CdSe/ZnS Quantum Dots

K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

JOURNAL OF ELECTRONIC MATERIALS 2015 2779-2785

<http://www.springer.com/materials/optical+%26+electronic+materials/journal/11664>

Статья

Effect of phonon confinement on one- and two-polar optical phonon capture processes in quantum dots

K.A. Vardanyan, A.L. Vartanian, V.N. Mughnetsyan, A.A. Kirakosyan
Physica E: Low-dimensional Systems and Nanostructures 2015 268-274
<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Phonon confinement effect on the polaron states in a double quantum ring structure in the presence of electric and magnetic fields

Mkrtich A. Yeranosyan, Arshak L. Vartanian, Abbas Shahbandari, Albert A. Kirakosyan

Physica B: Condensed Matter 2015 365-370

<http://www.journals.elsevier.com/physica-b-condensed-matter>

Статья

Effect of interdiffusion on electronic states of strain-free Gaussian-shaped double quantum ring superlattice

V.L. Aziz Aghchegala, V.N. Mughnetsyan, A.A. Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2015 30-35

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Effect of interdiffusion on nonlinear intraband light absorption in Gaussian-shaped double quantum rings

V.L. Aziz Aghchegala, V.N. Mughnetsyan, A.A. Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2015 210-216

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

Статья

Effect of interdiffusion on band structure in GaAs/Ga_{1-x}Al_xAs quantum ring superlattices

V. Mughnetsyan, A. Kirakosyan, A. Manaselyan

6-th International Conference on Nanomaterials, NANOCON-2014, Conference Proceedings 2015 47-53

http://nanocon2014.tanger.cz/files/proceedings/20/index_en.htm

Монография

Պինդ մարմնի ֆիզիկայի ներածություն, Մաս I

Ա.Ա. Կիրակոսյան

2015 288

Монография

Պինդ մարմնի ֆիզիկայի ներածություն, Մաս II

Ա.Ա. Կիրակոսյան

2015 364

Образовательный Руководство

Պինդ մարմնի ֆիզիկայի խնդիրներ, Մաս I

Ա.Ա. Կիրակոսյան, Ա.Լ. Վարդանյան, Ա.Լ. Ասատրյան

2015 154

Статья

Потенциал точечного заряда в полупроводниковой гетероструктуре с цилиндрической симметрии

А.А. Киракосян, Н.Г. Мовсисян, Ш.Г. Гаспарян

Конференция

Effect of image charges on the impurity-bound polaronic states in colloidal quantum dots embedded in different organic matrices.

A.L. Vartanian, A.L. Asatryan, L.A. Vardanyan, A.A. Kirakosyan

Конференция

Spin-orbit interaction enhanced polaron effect in wurtzite semiconductor quantum well.

M.A. Yerosyan, K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

Конференция

Spin Relaxation in the Presence of Spin-Orbit Interactions in Single Electron Quantum Dots Embedded in a Suspended Phonon Cavity

A.L. Vartanian, K.A. Vardanyan, A.A. Kirakosyan

Конференция

Elastic Strain Distribution in one layer InAs/GaAs Quantum Ring Superlattice.

V.N. Mughnetsyan, A.A. Kirakosyan

Конференция

The influence of electric field on the quasi-confined and interface polaron basic parameters in a wurtzite nitride quantum wire.

A.L. Asatryan, K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

Конференция

Effect of Rashba and Dresselhaus spin-orbit interactions on the polaron properties in wurtzite semiconductor quantum dot in the presence of external fields.

M.A. Yerosyan, K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

Конференция

Confined acoustic phonon-mediated spin relaxation in a two-dimensional quantum dot in the presence of perpendicular magnetic field.

K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

Конференция

Electron capture processes in quantum dots due to one- and two-phonon assisted transitions: The role of optical phonon confinement.

A.L. Vartanian, K.A. Vardanyan, V.N. Mughnetsyan, A.A. Kirakosyan

Конференция

Dilatational and flexural acoustic-phonon mediated spin relaxation in a two-dimensional quantum dot in the presence of perpendicular magnetic field.

Arshak Vartanian, Karen Vardanyan, Armen Stepanyan, Albert Kirakosyan

Конференция

Electric field effect on hot-electron energy-loss rate via LA-phonon scattering in a cylindrical quantum wire.

A. Stepanyan, L. Vardanyan, A. Asatryan, A. Vartanian, A. Kirakosyan

Конференция

Confined and interface polar optical phonon-limited electron mobility in quantum wires in the presence of perpendicular electric field.

K. Vardanyan, Y. Brsoyan, A. Vartanian, A. Kirakosyan

Конференция

Influence of Phonon Confinement on Optical Phonon-Mediated Carrier Capture into CdSe/ZnS/H₂O Quantum Dots

Vartanian A, Vardanyan K, Kirakosyan A

Конференция

Quasi-one-dimensional Fröhlich polaron with spin-orbit Rashba and Dresselhaus couplings

Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

Конференция

The influence of the transverse electric field on the hot electron energy loss rate via polar-optical phonons in nanowires

A.Asatryan, A.Stepanyan, M.Yeranosyan, A.Kirakosyan, A.Vartanian

Конференция

Wurtzite-nitride quantum wires under electric and magnetic fields: Polaron basic parameters

A.L. Asatryan, L.A. Vardanyan, A.A. Kirakosyan, A.L. Vartanian

Электронный материал

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ

Արթուր Կիրակոսյան, Արշակ Վարդանյան, Աննա Ասատրյան, Արամ Մանասեյան,

Գառնիկ Վերմիշյան

Электронный материал

Ատոմի ֆիզիկա

Ա. Կիրակոսյան

Конференция

Phonon-Assisted Optical Absorption for Nanowires with Spin-Orbit Coupling

Ghukasyan T. K., Asatryan A.L., Vardanyan K.A., Kirakosyan A.A., Vartanian A.L.

Конференция

Magneto-Optical Properties of Artificial Graphene Constructed of Cylindrical and Elliptical Quantum Dots

YEGANYAN Lilit, MUGHNETSYAN Vram, MANSOURY Maryam, KIRAKOSYAN Albert, GUDMUNDSSON Vidar
