

Ֆիզիկայի ինստիտուտ

Կոնդենսացված վիճակի ֆիզիկայի ամբիոն

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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

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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

Հոդված

Planar quantum dots: Theoretical approaches

Aram Manaselyan, Vram Mughnetsyan, Albert Kirakosyan

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

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Quasi-One-Dimensional Fröhlich Polaron Characteristics in ZnO Nanowires under the External Fields [Характеристики квазиодномерного фрелиховского 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

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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

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

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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

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Electron-hole interaction in cylindrical quantum dots

Vram Mughnetsyan, Ashot Movsisyan, Albert Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2022 115366

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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

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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

ՈՒՏՈՒՄՆԱԿԱՆ ձեռնարկ

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ. մաս 2

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

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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)

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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)

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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)

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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

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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

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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

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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)

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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)

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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

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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

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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

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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. Yeranosyan, K. Vardanyan, A. Kirakosyan, A. Vartanian

Physica B: Condensed Matter 2018 340-346

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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

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

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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

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

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

Arshak Vartanian, Albert Kirakosyan, Karen Vardanyan

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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. Mkhitaryan, S.S. Avetisyan

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

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ONE-DIMENSIONAL FRÖHLICH POLARON WITH SPIN-ORBIT COUPLING

K. Vardanyan, A. Kirakosyan, A. Vartanian

Вестник Российско-Армянского Университета: Физико-математические и естественные науки 2017
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Strain distribution and band structure of InAs/GaAs quantum ring superlattice

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Elastic strain distribution in one layer quantum ring superlattice

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

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

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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

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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

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

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

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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>

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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

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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

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

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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
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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

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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

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

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

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

V. Mughnetsyan, A. Kirakosyan, A. Manaselyan

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Ա.Ա. Կիրակոսյան

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Պինդ մարմնի ֆիզիկայի խնդիրներ, Մաս I

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Потенциал точечного заряда в полупроводниковой гетероструктуре с цилиндрической симметрией

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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

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

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

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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

Գիտաժողովի նյութ

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

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Գիտաժողովի նյութ

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

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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

Գիտաժողովի նյութ

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

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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

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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

Գիտաժողովի նյութ

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

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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

Գիտաժողովի նյութ

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

Vartanian A, Vardanyan K, Kirakosyan A

Գիտաժողովի նյութ

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

Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

Գիտաժողովի նյութ

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

Գիտաժողովի նյութ

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

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

Էլեկտրոնային նյութ

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ

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

Գառնիկ Վերմիշյան

Էլեկտրոնային նյութ

Ատոմի ֆիզիկա

Ա. Կիրակոսյան

Գիտաժողովի նյութ

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.

Գիտաժողովի նյութ

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

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