

Ֆիզիկայի ինստիտուտ

Կոնդենսացված վիճակի ֆիզիկայի ամբիոն
Պրոֆեսոր

Լեզուների իմացություն

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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

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Planar quantum dots: Theoretical approaches

Aram Manaselyan, Vram Mughnetsyan, Albert Kirakosyan

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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

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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
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Electron-hole interaction in cylindrical quantum dots

Vram Mughnetsyan, Ashot Movsisyan, Albert Kirakosyan
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Electronic and Magnetic Properties of Laser Dressed Quantum Dot and Ring with Rashba Spin-Orbit Coupling

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

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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

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

Vram Mughnetsyan, Albert Kirakosyan

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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

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

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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

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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

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

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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

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

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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

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Strain distribution and band structure of InAs/GaAs 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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Image Charge and Electric Field Effects on Hydrogen-like Impurity-bound Polaron Energies and Oscillator Strengths in a Quantum Dot

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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

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

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

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

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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

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

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

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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

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

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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

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

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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

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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

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

Vartanian A, Vardanyan K, Kirakosyan A

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

Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

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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

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

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

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Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ

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Գառնիկ Վերմիշյան

Էլեկտրոնային նյութ

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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
