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Language skills

English Русский Deutsch

Publications

Article

Exciton-optical phonon coupling in non-spherical quantum dots: A resonant Raman study of InP/ZnSe nanocrystals

A.L. Vartanian, A.L. Asatryan, A.H. Movsisyan, L.A. Vardanyan, N. Del Fatti, F. Valle'e

Computational Materials Science 2025 113394/11

Article

Intermediate interaction theory of the Dirac fermions with plasmon-surface LO-phonon excitations in the monolayer graphene on polar substrate

Arshak L.Vartanian

Journal of Physics and Chemistry of Solids 2022 110790

Article

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

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

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2022 207287

Article

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

Article

External electric and magnetic field effects on the polaron in a wurtzite nitride nanowire embedded in a nonpolar matrix

Anna L. Asatryan, Ashot H. Movsisyan, Arshak L. Vartanian

EUROPEAN PHYSICAL JOURNAL B 2021 id 70/8

Manual

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ. մաս 2

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

Վալերի Հարությունյան

2021 190

Article

Polaronic effects on the impurity-related linear and nonlinear optical properties in a nanowire with magnetic field

Arshak L. Vartanian, Tigran K. Ghukasyan

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2020 106339(1-13)

Article

Possible Frohlich surface polaron formation in graphene on a polar substrate

Arshak L. Vartanian

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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)

Article

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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Article

Influence of image charges on the impurity-related optical properties of near-surface quantum wells under a transverse electric field

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

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Article

Polaron and dielectric mismatch effects on impurity-related optical absorption and refractive index changes in a spherical quantum dot

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

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2018 442-458

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Article

Impurity-Bound Polaronic States in ZnSe Quantum Dots Under Electric Field: Image Charge Effect

A. Vartanian, A. Asatryan, L. Vardanyan

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Effect of Rashba spin-orbit coupling on polaron properties in CdSe nanowire under electric field

A.L.Vartanian, L.A.Vardanyan

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

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Influence of image charge effect on impurity-related optical absorption coefficients and refractive index changes in a spherical quantum dot.

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

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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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Article

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. Mkhitarian, S.S. Avetisyan

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Article

ONE-DIMENSIONAL FRÖHLICH POLARON WITH SPIN-ORBIT COUPLING

K. Vardanyan, A. Kirakosyan, A. Vartanian

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Article

Influence of spin-orbit interactions on the polaron properties in wurtzite semiconductor quantum well

Mkrtich A. Yerosyan, Arshak L. Vartanian, Karen A. Vardanyan

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Influence of the image charge effect on the hydrogen-like impurity-bound polaron in a spherical quantum dot in the presence of an electric field

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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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Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ մաս I

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Գառնիկ Վերմիշյան

2016 168

Article

The influence of electric field on the interface polaron properties in a wurtzite nitride nanowire.

Anna L. Asatryan, Karen A. Vardanyan, Arshak L. Vartanian

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Article

Polaronic effects due to quasi-confined optical phonons in wurtzite nitride nanowire in the presence of an electric field.

Karen A. Vardanyan, Anna L. Asatryan, Arshak L. Vartanian

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2015 588-594

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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>

Article

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

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Article

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

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

JOURNAL OF ELECTRONIC MATERIALS 2015 2779-2785

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Article

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...>

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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

Physica B: Condensed Matter 2015 365-370

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Manual

Պիկո մարմնի ֆիզիկայի խնդիրներ, Մաս I

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

2015 154

Conference

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

Conference

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

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

Conference

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

Conference

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

Conference

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

Conference

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

Conference

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

Conference

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

Conference

Impurity-bound polaronic states under an external electric field in quantum dots: Image charge effect.

Lyudvig Vardanyan, Arshak Vartanian, Anna Asatryan

Conference

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

Conference

Rashba and Dresselhaus spin-orbit coupling effects on the electronic structure of quantum wires under the influence of in-plane magnetic field.

V. Arzumanyan, K. Vardanyan, A. Asatryan, A. Vartanian

Conference

Influence of image charge effect on impurity-related optical absorption coefficient in a spherical quantum dot.

A. Mkhitarian, L. Vardanyan, A. Asatryan, A. Vartanian

Conference

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

Conference

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

Vartanian A, Vardanyan K, Kirakosyan A

Conference

Image charge effect on oscillator strength and intradonor absorption spectra under external electric field in quantum dots.

Arshak Vartanian, Anna Asatryan, Lyudvig Vardanyan

Conference

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

Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

Conference

Impurity-Bound Polaronic States in ZnSe Quantum Dots under Electric Field: Image Charge Effect

A. Asatryan, L. Vardanyan, A. Vartanian

Conference

Effect of Rashba Spin-Orbit Coupling on Polaron Properties in CdSe Nanowire under Electric Field

A. Vartanian, K. Vardanyan

Conference

Dielectric mismatch and polaron effects on optical-absorption spectra and refractive index changes associated with impurities in quantum dots

Arshak Vartanian, Tigran Ghukasyan, Levon Samsonyan

Conference

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

Conference

Magnetic field control of phononmediated decoherence of spin-based qubit in two-dimensional quantum dot embedded in a suspended slab

Arshak L. Vartanian

Conference

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

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

Ematerial

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ

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

Գառնիկ Վերմիշյան

Conference

Exciton-Phonon Interaction in Elliptically Shaped Core-Shell Quantum Dots: Resonant Raman Scattering

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

Conference

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.

Conference

First-order Raman spectra induced by the Fröhlich excitation-lattice interaction in a non-spherical core/shell nanocrystals

Anna Asatryan, Ashot Movsisyan, Siranush Avetisyan, Tatevik Hayriyan, Arshak Vartanian

Conference

Exciton Resonant Raman Scattering in Colloidal Quantum Dots: The Role of the Fröhlich-Type Interaction

A. Asatryan, A. Movsisyan, L. Vardanyan, A. Vartanian

Conference

Intermediate Coupling Theory of the Dirac Fermions with Plasmon-Surface Polar Optical Phonon Excitations in the Monolayer Graphene on Polar Substrate

Arshak Vartanian
