Ալբերտ Ավետիսի Կիրակոսյան

kirakosyan@ysu.am

Ֆիզիկայի ինստիտուտ
Կոնդենսացված վիճակի ֆիզիկայի ամբիոն
Պրոֆեսոր

Ֆիզիկայի ինստիտուտ
Կոնդենսացված վիճակի ֆիզիկայի ամբիոն
Պրոֆեսոր

Ֆիզիկայի գիտահետազոտական ինստիտուտ
Կոնդենսացված վիճակի ֆիզիկայի կենտրոն
Պինդ մարմնի ֆիզիկայի լաբորատորիա
Լաբորատորիայի վարիչ

Լեզուների իմացություն

Հայերեն

Հրապարակումներ

Հոդված
Enhanced efficiency of intermediate-band semiconductor solar cells embedded with quantum dot superlattices
Naira Petrosyan, Lilit Yeganyan, Aram Manaselyan, Vram Mughnetsyan, Vidar Gudmundsson,

Albert Kirakosyan
Physics Letters A 2026 131639
https://doi.org/10.1016/j.physleta.2026.131639

Հոդված
Effect of two-dimensional nonlocal screening on mobility of electrons in transition-metal dichalcogenide monolayers
Aram Manaselyan, Vram Mughnetsyan, Anna Asatryan, Albert Kirakosyan
Semiconductor Science and Technology 2026 045015
https://doi.org/10.1088/1361-6641/ae5f43

Հոդված
Electronic states in a semiconductor nanobelt in the two-wave approximation
Minas Balyan, Vram Mughnetsyan, Albert Kirakosyan
Physics Letters A 2026 132007
https://doi.org/10.1016/j.physleta.2026.132007

Հոդված
Electronic states in a bending semiconductor nanobelt within the framework of finite potential well approximation
Minas Balyan, Vram Mugnetsyan, Albert Kirakosyan
Micro and Nanostructures 2026 208850
https://doi.org/10.1016/j.micrna.2026.208850

Հոդված

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

Հոդված

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

Հոդված

Quasi-One-Dimensional Fröhlich Polaron Characteristics in ZnO Nanowires under the External Fields [Характеристики квазиодномерного фрёлиховского полярона в нанопроволоках ZnO во внешних полях]
A. Asatryan, A. Movsisyan, L. Vardanyan, S. Hayrapetyan, A. Kirakosyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2024 287 - 293

Հոդված

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

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

2023 69 - 69

https://www.nanocon.eu/en/

Հոդված

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

Հոդված

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

Հոդված

Electron–hole interaction in cylindrical quantum dots
Vram Mughnetsyan, Ashot Movsisyan, Albert Kirakosyan

Physica E: Low-dimensional Systems and Nanostructures 2022 115366

Հոդված

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

Հոդված

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

Գիտաժողովի նյութ

Phonon-Assested Optical Absorption for Nanowires with Spin-Orbit Coupling
Ghukasyan T. K., Asatryan A.L., Vardanyan K.A., Kirakosyan A.A., Vartanian A.L.

2022 33-33

https://www.wisdommeetings.com/nanotechnology/

Ուսումնական ձեռնարկ

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ. մաս 2
Ալբերտ Կիրակոսյան, Արշակ Վարդանյան, Աննա Ասատրյան, Արամ Մանասելյան,

Վալերի Հարությունյան

2021 190

Հոդված

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)

Հոդված

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)

Հոդված

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)

Հոդված

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

Հոդված

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

Հոդված

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

Հոդված

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./Physical review. B 2019 195132(1-8)

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

2019 62-63

https://anam2019.org/

Ուսումնական ձեռնարկ

Ատոմի ֆիզիկա

Ալբերտ Կիրակոսյան

2019 224

Հոդված

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)

Հոդված

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

Հոդված

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

Հոդված

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

Micro and Nanostructures (Previously known as Superlattices and Microstructures) 2018 548-556

Հոդված

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

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

2018 El-P-3

http://www.irphe.am/?q=irphe_2018

Հոդված

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

Հոդված

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...

Հոդված

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

---

Հոդված

Energy-loss rate of hot electrons due to confined acoustic phonon modes in a semiconductor quantum wire under transverse electric field.
A. Stepanyan, M. Yeranosyan, L. Vardanyan, A. Asatryan, A. Kirakosyan, A. Vartanian

Physica B Condensed Matter 2017 102-107

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

Հոդված

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

---

Հոդված

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

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

Հոդված

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

Հոդված

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

Հոդված

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

Հոդված

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

H.M. Baghramyan, 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…

Հոդված

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…

Հոդված

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

Հոդված

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

Հոդված

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

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

2016 89

http://www.rau.am/optics2016/

Գիտաժողովի նյութ

Confined and interface polar optical phonon-limited electron mobility in quantum wires in the presence of perpendicular electric field.
K. Vardanyan, A. Vartanian, A. Kirakosyan, Y. Brsoyan

2016 103-103

http://www.rau.am/optics2016/

Գիտաժողովի նյութ

Quasi-one-dimensional Fröhlich polaron with spin-orbit Rashba and Dresselhaus couplings
Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

2016 89

https://eds2016.sciencesconf.org/

Ուսումնական ձեռնարկ

Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ մաս I
Ալբերտ Կիրակոսյան, Արշակ Վարդանյան, Աննա Ասատրյան, Արամ Մանասելյան,

Գառնիկ Վերմիշյան
2016 168

Հոդված

Impurity-related intraband absorption in coupled quantum dot-ring structure under lateral electric field
M.G. Barseghyan, H.M.Baghramyan, 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...

Հոդված

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

---

Հոդված

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

Հոդված

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

Հոդված

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

Հոդված

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

Հոդված

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…

Հոդված

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

Հոդված

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…

Հոդված

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…

Հոդված

Effect of interdiffusion on band structure in GaAs/Ga1-xAlxAs 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

---

Գիտաժողովի նյութ

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

2015 74-75

http://www.dom-events.org/

Գիտաժողովի նյութ

Spin-orbit interaction enhanced polaron effect in wurtzite semiconductor quantum well.
M.A. Yeranosyan, K.A. Vardanyan, A.L. Vartanian, A.A. Kirakosyan

2015 45-47

http://www.dom-events.org/

Գիտաժողովի նյութ

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

2015 49-50

http://www.dom-events.org/

Գիտաժողովի նյութ

Elastic Strain Distribution in one layer InAs/GaAs Quantum Ring Superlattice.
V.N. Mughnetsyan, A.A. Kirakosyan

2015 59-60

http://www.dom-events.org/

Գիտաժողովի նյութ

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

2015 Էջ-126

http://edison19.usal.es/

Գիտաժողովի նյութ

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

2015 110-110

http://edison19.usal.es/

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

2015 109-109

http://edison19.usal.es/

Գիտաժողովի նյութ

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

2015 42-42

http://edison19.usal.es/

Գիտաժողովի նյութ

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

2015 134-134

http://www.rau.am/optics2015/

Գիտաժողովի նյութ

Influence of Phonon Confinement on Optical Phonon-Mediated Carrier Capture into CdSe/ZnS/H2O Quantum Dots
Vartanian A, Vardanyan K, Kirakosyan A

2015 243-243

http://ii-vi-2015.sciencesconf.org/

Ուսումնական ձեռնարկ

Պինդ մարմնի ֆիզիկայի խնդիրներ, Մաս I
Ա.Ա. Կիրակոսյան, Ա.Լ. Վարդանյան, Ա.Լ. Ասատրյան

2015 154

Մենագրություն

Պինդ մարմնի ֆիզիկայի ներածություն, Մաս I
Ա.Ա. Կիրակոսյան
2015 288

Մենագրություն

Պինդ մարմնի ֆիզիկայի ներածություն, Մաս II
Ա.Ա. Կիրակոսյան
2015 364

Հոդված

Потенциал точечного заряда в полупроводниковой гетероструктуре с цилиндрической симметрие
А.А. Киракосян, Н.Г. Мовсисян, Ш.Г. Гаспарян

Proceedings of NAS RA Physics 2013 125-135
