

## Институт физики

Кафедра физики твердого тела

Профессор

## 🌐 Знание языков

Հայերեն

## 📖 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 квазидномерного фрёлиховского полярона в нанопроволоках ZnO во внешних полях]**

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

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287 - 293

### Статья

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

Maryam Mansouri, 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

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Статья

**Electron-hole interaction in cylindrical quantum dots**

Vram Mughnetsyan, Ashot Movsisyan, Albert Kirakosyan

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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

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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

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Ալբերտ 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

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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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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

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*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**

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*Статья*

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*Статья*

**Effect of the impurity on the Aharonov-Bohm oscillations and the intraband absorption in GaAs/ Ga<sub>1-x</sub>Al<sub>x</sub>As quantum ring under intense THz laser field**

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

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**Ալիքի Ֆիզիկա**

Ալբերտ Կիրակոսյան

2019 224

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*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,

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

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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**

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

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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**

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

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**Պինդ մարմնի ֆիզիկայի ներածություն, Առաջ 1**

Ա.Ա. Կիրակոսյան

2015 288

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*Монография*

**Պինդ մարմնի ֆիզիկայի ներածություն, Առաջ 2**

Ա.Ա. Կիրակոսյան

2015 364

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*Образовательный Руководство*

**Պինդ մարմնի ֆիզիկայի խնդիրներ, Առաջ 1**

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

2015 154

---

*Статья*

**Потенциал точечного заряда в полупроводниковой гетероструктуре с цилиндрической симметрие**

Ա.Ա. Կիրակոսյան, Հ.Գ. Մօվսիսյան, Շ.Գ. Ղափարյան

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

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Конференция

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

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

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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

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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

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

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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

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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

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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

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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

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Конференция

**Influence of Phonon Confinement on Optical Phonon-Mediated Carrier Capture into**

**CdSe/ZnS/H<sub>2</sub>O Quantum Dots**

Vartanian A, Vardanyan K, Kirakosyan A

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Конференция

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

Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

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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

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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

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Электронный материал

**Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ**

Ալեքս Կիրակոսյան, Արշակ Վարդանյան, Աննա Սահակյան, Արմեն Մանասյան,

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Электронный материал

**Ալումինի ֆիզիկա**

Ա. Կիրակոսյան

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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.

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Конференция

**Magneto-Optical Properties of Artificial Graphene Constructed of Cylindrical and Elliptical**

**Quantum Dots**

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

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