

## Институт физики

Кафедра физики твердого тела

Профессор

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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

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**

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

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### **Signature of miniband nodes in magneto-optical properties of one-dimensional superlattice of planar quantum rings**

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

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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

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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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*Образовательный Руководство*

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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

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Manuk G. Barseghyan, Aram Manaselyan, Albert A. Kirakosyan, Laura M. Perez, David Laroze

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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**

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

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

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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

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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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**Energy loss rate of hot electrons due to polar-optical phonon modes in a semiconductor nanowire under transverse electric field**

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

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А.А. Киракосян, Н.Г. Мовсисян, Ш.Г. Гаспарян

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**Electric field effect on hot-electron energy-loss rate via LA-phonon scattering in a cylindrical quantum wire.**

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

Vartanian A, Vardanyan K, Kirakosyan A

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Karen Vardanyan, Arshak Vartanian, Albert Kirakosyan

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

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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.

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### **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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