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Կոնդենսացված վիճակի ֆիզիկայի կենտրոն
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Institute of Physics
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Education

Institution	Yerevan State University
Faculty	Faculty of Physics, Chair of Solid State Physics
Date	2002 - 2005
Degree name	PhD student

Institution	Yerevan State University
Faculty	Faculty of Physics, Chair of Solid State Physics
Date	2000 - 2002
Degree name	Masters

Institution	Yerevan State University
Faculty	Faculty of Physics
Date	1996 - 2000
Degree name	Bachelor

Scientific Rank/degree

Institution	Yerevan State University
Date	2017
Degree name	Associate professor

Institution	Yerevan State University
Date	2005
Degree name	Candidate
Scientific Supervisor	Kirakosyan Albert

Language skills

Work experience

Institution	Group of modeling and simulations of nanostructures, Institute of physics, YSU
Period of time	2023 till now
Rank/degree	Senior researcher

Institution	Department of solid state physics, Institut of physics, YSU
Period of time	2017 till now
Rank/degree	Associate professor

Publications

Article

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

Article

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

Article

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

Article

Planar quantum dots: Theoretical approaches

Aram Manaselyan, Vram Mughnetsyan, Albert Kirakosyan

Encyclopedia of Condensed Matter Physics (Second Edition) 2024 297-307

Article

CALCULATIONS OF THE INTERBAND TRANSITION ELECTRON ENERGIES OF THE CDSE/CDS COLLOIDAL CORE-SHELL QUANTUM DOTS

Naira PETROSYAN, Aram MANASELYAN

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Article

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

Conference
ELECTRONIC AND OPTICAL PROPERTIES OF CdSe/CdS COLLOIDAL CORE-SHELL QUANTUM DOTS
PETROSYAN Naira, MANASELYAN Aram

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Electronic and optical properties of CdSe/CdS colloidal core-shell quantum dots
Naira Petrosyan, Aram Manaselyan

2023 105 - 105

https://photonicsai.com/optics11/

Article
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

Article
The effect of intense terahertz laser radiation on magnetization of Semiconductor Quantum Ring
N.H. Movsisyan, A.Kh. Manaselyan

Journal of Contemporary Physics (Armenian Academy of Sciences) 2021 254-259

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

Վալերի Հարությունյան
2021 190

Article
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)

Article
Seeking Maxwell’s Demon in a nonreciprocal quantum ring
Aram Manaselyan, Wenchen Luo, Daniel Braak, Tapash Chakraborty

Scientific Reports 2019 9244 (1-8)

Article

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)

Article

Controllable continuous evolution of electronic states in a single quantum ring
Tapash Chakraborty, Aram Manaselyan, Manuk Barseghyan, David Laroze

Physical review. B./Physical review. B 2018 041304(R),(1-5)

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Article

Effective tuning of electron charge and spin distribution in a dot-ring nanostructure at the ZnO interface
Tapash Chakraborty, Aram Manaselyan, Manuk Barseghyan

Physica E: Low-dimensional Systems and Nanostructures 2018 63-66

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Article

Electronic, Magnetic and Optical Properties of Quantum Rings in Novel Systems
Tapash Chakraborty, Aram Kh. Manaselyan, Manuk G. Barseghyan

Physics of Quantum Rings 2018 283-326

Article

Irregular Aharonov–Bohm effect for interacting electrons in a ZnO quantum ring
Tapash Chakraborty, Aram Manaselyan, Manuk Barseghyan

JOURNAL OF PHYSICS-CONDENSED MATTER 2017 075605 1-5

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Article

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

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Unique properties of ZnO quantum rings

A. Kh. Manaselyan

Proceedings of the YSU A Physical and Mathematical Sciences 2017 117-120

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Interaction-driven distinctive electronic states of artificial atoms at the ZnO interface
Tapash Chakraborty, Aram Manaselyan, Manuk Barseghyan

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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

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Signatures of Majorana fermions in an elliptical quantum ring
A. Ghazaryan, A. Manaselyan, T. Chakraborty

Physical review. B./Physical review. B 2016 245108

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Study manual

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

Գառնիկ Վերմիշյան
2016 168

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Tuning of exciton states in a magnetic quantum ring
A. Ghazaryan, A. Manaselyan, T. Chakraborty

Physica E: Low-dimensional Systems and Nanostructures 2015 157-161

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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

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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

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