

# Aram Khachik Manaselyan

## Research Institute of Physics

Senior researcher

☎ 37494009986  
23-57

✉ amanasel@ysu.am

## Education

---

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

---

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

---

<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Faculty of Physics
<b>Date</b>	1996 - 2000
<b>Degree name</b>	Bachelor

## Scientific Rank/degree

---

<b>Institution</b>	Yerevan State University
<b>Date</b>	2017
<b>Degree name</b>	Associate professor
<b>Specialty</b>	Physico-mathematical sciences

---

<b>Institution</b>	Yerevan State University
<b>Date</b>	2005
<b>Degree name</b>	Candidate
<b>Specialty</b>	Physico-mathematical sciences
<b>Scientific Supervisor</b>	Kirakosyan Albert

## Language skills

---

Հայերեն Русский English

## 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*

**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

NANOCON Conference Proceedings - International Conference on Nanomaterials 2024 198700/ 136-141

---

*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

---

*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

---

Manual

**ՊիՆդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ. մաս 2**

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

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 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 2018 041304(R),(1-5)

<https://journals.aps.org/prb/>

---

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

<https://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostr...>

---

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

<http://iopscience.iop.org/journal/0953-8984>

---

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  
<http://www.journals.elsevier.com/superlattices-and-microstructures>

---

*Article*

**Unique properties of ZnO quantum rings**

A. Kh. Manaselyan

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

<http://www.y-su.am/science/en/journals>

---

*Article*

**Interaction-driven distinctive electronic states of artificial atoms at the ZnO interface**

Tapash Chakraborty, Aram Manaselyan, Manuk Barseghyan

JOURNAL OF PHYSICS-CONDENSED MATTER 2017 215301 (5pp)

<http://iopscience.iop.org/journal/0953-8984>

---

*Article*

**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...>

---

*Article*

**Signatures of Majorana fermions in an elliptical quantum ring**

A. Ghazaryan, A. Manaselyan, T. Chakraborty

Physical Review B 2016 245108

<http://journals.aps.org/prb/>

---

*Manual*

**Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ մաս I**

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

Գառնիկ Վերմիշյան

2016 168

---

*Article*

**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

<http://www.journals.elsevier.com/physica-e-low-dimensional-systems-and-nanostru...>

---

*Article*

**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>

---

*Article*

**Effect of interdiffusion on band structure in GaAs/Ga<sub>1-x</sub>Al<sub>x</sub>As quantum ring superlattices**

V. Mughnetsyan, A. Kirakosyan, A. Manaselyan

6-th International Conference on Nanomaterials, NANOCON-2014, Conference Proceedings 2015 47-53

*Ematerial*

**Պինդ մարմնի ֆիզիկայի լաբորատոր աշխատանքներ**

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

Գառնիկ Վերմիշյան

---

*Conference*

**Electronic and optical properties of CdSe/CdS colloidal core-shell quantum dots**

Naira Petrosyan, Aram Manaselyan

---

*Conference*

**ELECTRONIC AND OPTICAL PROPERTIES OF CdSe/CdS COLLOIDAL CORE-SHELL QUANTUM DOTS**

PETROSYAN Naira, MANASELYAN Aram

---