


<b>Full name</b>	David B. Hayrapetyan	
<b>Date of birth</b>	27 August, 1982	
<b>Citizenship</b>	Republic of Armenia	
<b>Nationality</b>	Armenian	
<b>Home address</b>	Ashtarak, Gitavan-2, 0203, Bld. 7a, Apt. 8	
<b>Phone</b>	+374-93 93-43-11	
<b>Marital status</b>	Married, 1 son, 1 daughter	
<b>E-mail</b>	<a href="mailto:dhayrap82@gmail.com">dhayrap82@gmail.com</a> , <a href="mailto:david.hayrapetyan@rau.am">david.hayrapetyan@rau.am</a>	
<b>Business address</b>	Russian-Armenian University H. Emin 123, Yerevan 0051, Armenia	
<b>Academic background, education</b>	<p><b>2013</b> - Associate professor in the field of physics.</p> <p><b>2009</b> – Doctor of Physics (PhD) in the field of Semiconductor and Insulator Physics, Yerevan State University, Scientific supervisors Prof. J.R. Panosyan and Prof. E.M. Kazaryan <b>PhD thesis:</b> “Investigation of electronic and optical properties of quantum structures with nontrivial geometry”.</p> <p><b>2006 – 2009</b>, Postgraduate Student, Department of Physics, State Engineering University of Armenia.</p> <p><b>2004 – 2006</b>, Department of Solid State Physics, Faculty of Physics, Yerevan State University. <b>Master’s degree</b> of Physics in the field of Physics (diploma of honor), <b>Master thesis:</b> “Direct interband light absorption in strongly oblate and strongly prolate ellipsoidal quantum dots”</p> <p><b>2000 – 2004</b>, Graduated from Faculty of Physics, Department of Solid State Physics, Yerevan State University. <b>Bachelor’s degree</b> of Physics in the field of Physics (Diploma of honor) <b>Bachelor thesis:</b> “Electron states in a strongly flattened ellipsoidal quantum dot in the presence of electric and magnetic fields”</p>	
<b>Honors and awards</b>	<p><b>2017</b> – Winner of the “Highly effective young researchers under 35 age (Top 50)” competition initiated by State Committee of Science of Armenia</p> <p><b>2016</b> – Winner of the “Highly effective young researchers under 35</p>	

age (Top 50)” competition initiated by State Committee of Science of Armenia

**2016** – “The Best Young Scientist” initiated by Russian-Armenian University

**2015** – Award after V. Hambartsumian initiated by Russian-Armenian State University

**2012** – Award from “Tashir” charitable foundation for articles with maximum citations in the international scientific journals

**2012** – “The Best Young Scientist” initiated by Russian-Armenian University

**2011** – “The Best Young Lecturer” initiated by Russian-Armenian University

**2011** – Award from “Gagik Tsarukyan” charitable foundation for articles in the international scientific journals with high impact factor

**2011** – “The Best scientific work” initiated by World Armenian Congress, The Union of Armenians in Russia and The National Academy of Sciences of Armenia in the nomination Physics

**2006** – President Educational Award in the field of Information Technologies, First place in “The Best Master” nomination

**2003** – “The Best Student” in Yerevan State University

**2003** – “The Best Student” in Physics Faculty of Yerevan State University 3rd place award

**2000** – Gold medal for the excellent advancement and exemplary behavior in the high school

## **Employment history**

**2018 – up to now**, Head of the Department of General Physics and Quantum Nanostructures, Engineering Physical Institute, Russian-Armenian University.

**2017 – up to now**, Associate professor, Department of Semiconductor Physics and Nanoelectronics, Institute of Physics, Nanotechnologies and Telecommunications, Peter the Great St. Petersburg Polytechnic University.

**2017 – up to now**, Head of the Laboratory of Mathematical Modeling of Quantum Systems, Institute of Mathematics and High

Technologies, Russian-Armenian University.

**2013 – up to now**, Associate professor, Department of General Physics and Quantum Nanostructures, Institute of Mathematics and High Technologies, Russian-Armenian University.

**2014 – 2016**, Research scientist, Department of theoretical physics, Centre of Quantum Technologies and New Materials, Yerevan State University

**2014 – 2017** director of Energy Systems LLC

**2013 – 2014**, Teacher, “Usmunq” Private School

**2010 – 2011**, Researcher in BiPi LLC

**2009 – 2015**, Research scientist, Heliotechnic Problem Laboratory, National Polytechnic University Of Armenia

**2009 – 2013**, Senior lecturer, Faculty of Applied Physics and Engineering, Russian-Armenian University.

**2007 – 2009**, Junior Research scientist, Faculty of Applied Physics and Engineering, Russian-Armenian University.

## **Grants**

**2016 - 2018** – Head of the Project of the Young Scientists Research Support Program initiated by the State committee of science of Armenia, Project 16YR-1C022, Investigation of quantum nanostructures with non-trivial geometry: electronic, excitonic and impurity states, linear and nonlinear optical properties in terahertz range

**2014 - 2017** Tempus “Armenqa” project 543817, Implementation of National and Sectorial Qualifications Frameworks in Armenia

**2016 - 2018** – Participant of the Development Project initiated by the Russian-Armenian University, Investigation of many particle and photoluminescence characteristics of the semiconductor quantum dots and dashes

**2016 - 2018** – Participant of the ISTC (The International Science and Technology Center) Project A-2130, Control of light in structured nonlinear media: Application to all-optical devices

**2015 - 2016** – Participant of the Development Project initiated by the Russian-Armenian University, Investigation of Coulomb, spin,

and electro-optical properties of layered quantum dots and quantum dashes

**2015 - 2016** – Principle Investigator of the ANSEF (the Armenian National Science and Education Fund) Award 2015, NANO-3905, Cylindrical quantum dot with different confining potentials in the presence of external electrical and magnetic fields: impurity states and electrostatic multipoles

**2013 - 2015** – Participant of the ISTC Project K-2050, Development of Technologies of Stabilization of Parameters of Photovoltaic Cells

**2011 - up to now** – Participant of the Basic funding of the State Committee of Science of Armenia, Investigation of physical properties of quantum nanostructures with non-trivial geometry and different confinement potentials

**2009 - 2011** – Participant of the ISTC Project A-1695, Nanotubes/Diamond Like Carbon composite transparent conductive material for Solar Cell and Conductive Coating Applications

**2009** – Participant of the ANSEF Award 2008, NANO-1759, Theoretical Investigation and Modeling of Electronic and Optical Properties of Strongly Oblated Semi-Ellipsoidal (3D) and Semi-elliptical (2D) Lens Shaped Quantum Dots

**2008** – Participant of the ANSEF Award 2008, NANO-1301, Theoretical Investigation and Modeling of Electronic and Optical Properties of Strongly Oblate (Prolate) Ellipsoidal and Semi-ellipsoidal Quantum Dots

#### **Membership in committees**

**2018** – Member of International Advisory and Program Committees of the 5<sup>th</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2018), 22 - 27 June, 2018, Yerevan-Ashtarak, Armenia

**2017-2018** – Member of the Programme Committee for the specific programme implementing Horizon 2020 - Configuration NMBP (European Commission)

**2017** – Director of the 4<sup>th</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2017), 19 - 25 September, 2017, Yerevan-Ashtarak, Armenia

**2017-2018** Member of the committee of the state examination and Bachelor graduate works of Yerevan State University (Faculty of Radiophysics)

**2016** – Director of the 3<sup>rd</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2016), 29 February - 12 March, 2016, Yerevan-Ashtarak, Armenia

**2015 – 2017** Member of the Committee for Sectorial Qualifications Framework in the Higher Education System for Physics of Republic of Armenia (Co-funded by the Tempus Programme of the European Union)

**2015** – Head of the local organizing committee of 3rd International Symposium of "Optics and its applications" 2015

**2015 – 2018** Member of the committee of the state examination and Master graduate works of Russian-Armenian University (Chair of General Physics and Quantum Nanostructures)

**2014** – Manager of organizing committee of 2nd International Symposium of "Optics and its applications" 2014

**2014** – Manager of organizing committee of International Advanced School on "Frontiers on Optics and Photonics-2014"

**2012 – 2014** Member of the committee of the state examination and Bachelor graduate works of Russian-Armenian University (Chair of General Physics and Quantum Nanostructures)

**2011** – Member of Olympiad program committee of Sixth annual international Microelectronics Olympiad of Armenia, Yerevan

**2010** – Member of Olympiad program committee of Fifth annual international Microelectronics Olympiad of Armenia, Yerevan

**2003** – Member of organizing committee of 3rd National Conference of Young Physicists 2003

**Membership of professional societies**

**2011 up to now** – Member of Armenian Territorial Committee in International Commission for Optics

**Reviewer of Scientific Journals**

Physica E: Low-dimensional Systems and Nanostructures

Superlattices and Microstructures

Optics Communications

Physica B: Condensed Matter

Journal of Contemporary physics

Journal of Inorganic and Organometallic Polymers and Materials

Radiation Effects and Defects in Solids

International Journal of Modern Physics B

Journal of Materials Research and Technology

Philosophical Magazine Letters

**Languages**

Armenian (native), Russian (Fluent), English (Fluent)

**Expertise**

Expert of the ANQA on the institutional review of the French university in Armenia in the framework of the tempus TNA\_QA project, 2017

Expert of the ARMENQA on the development of sectorial qualifications frameworks for Armenian higher education in the field of physics, 2015-2017

**TEACHING COURSES (Assoc. Prof at Russian-Armenian University)**

1. Post graduate Optical properties of quantum systems, lectures, training, testing, exam.
2. Graduate Quantum systems of Nanoelectronics, lectures, training, testing, exam.
3. Approximation Methods of Quantum Mechanics, lectures, training, testing, exam.
4. Graduate Methods of Mathematical Modeling (Wolfram Mathematica 10.4), lectures, practical training, testing, essay, and exam.
5. Undergraduate Basics of Theoretical Physics (Mechanics, Electromagnetism, Quantum Mechanics, Statistical mechanics), practical training, testing, exam.
6. Undergraduate General Physics (Classical Mechanics, Molecular Physics), lectures, laboratory, testing, exam.

**INVITED LECTURER**

1. Saarland University, Chair of Physical and Theoretical Chemistry, Erasmus+ Programme, 14-19 November 2016. Titles:
  - a) Electronic and Optical Properties of the Conical Quantum Dots Ensemble.
  - b) Core/shell/shell spherical quantum dot with Kratzer confining potential.
2. Peter the Great St. Petersburg Polytechnic University, Department of Semiconductor Physics and Nanoelectronics, Institute of Physics, Nanotechnologies and Telecommunications, 5-100 Programme, 12-18 November 2016. Titles:
  - a) Conical quantum dots: Electronic states and optical properties.
  - b) Application of the Wolfram Language for the Calculations of Physical Characteristics of Quantum Nanostructures.
  - c) The use of different types of confining potential for modeling of semiconductor quantum nanostructures.

## **RESEARCH AREAS**

Electronic and optical properties of semiconductor low dimensional systems: one-electron states, impurity states, exciton states, biexciton and trion states, interband and intraband transitions, absorption coefficient (for ensemble of quantum dots (QD)), influence of external electric and magnetic fields, influence of external hydrostatic pressure and temperature, different shaped QDs (quantum rings, core/shell QDs, nanoshells, spherical, cylindrical, ellipsoidal, conical QDs),

Optical properties of Diamond Like Carbon (DLC) films, Analyse of Raman spectras and IR spectras of DLC films, contact angle measurement and analyse of DLC films.

### **Calculation methods**

Effective mass method, geometrical adiabatic approximation, variational method, perturbation theory, numerical methods (Wolfram Mathematica 10.4, OriginPro 2015)

## **SHORT TERM SCIENTIFIC VISITS**

1. The group of Prof. Dr. Michael Springborg, Chair of Physical and Theoretical Chemistry, Saarland University, Saarbrücken, Germany, 14-19 November 2016.
2. The group of Prof. Dr. Dmitry Firsov, Department of Semiconductor Physics and Nanoelectronics, Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia, 12-18 November 2017.
3. The group of Prof. Dr. habil. Arturs Medvids, Department of Semiconductor Physics, Riga Technical University, Riga, Latvia, 18-25 November 2017.

## **CONFERENCES, SCHOOLS AND WORKSHOPS**

1. 7<sup>th</sup> International Conference on New Frontiers in Physics (ICNFP 2018), “Theoretical investigation of optical properties of quasi two-dimensional excitonic complexes in ellipsoidal quantum dots” 4-12 July, Kolymbari, Crete, Greece.

2. 5<sup>th</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2018), “Investigation of excitonic complexes in ellipsoidal quantum dots”, 22-27 June, 2018, Yerevan-Ashtarak, Armenia.
3. International School on Metamaterials and Nanotechnologies, “Conical quantum dots: exciton states and optical properties” and “Application of Wolfram- Mathematica for modeling of quantum dots”, 24-28 December, Tsakhkadzor, Armenia, 2017 (Lecture).
4. Armenian Wolfram Technology Conference 2017, “Application of the Wolfram Language for the Calculations of Physical Characteristics of Quantum Nanostructures”, 23-24 September, Yerevan, Armenia, 2017. (Oral)
5. Laser Physics 2017 Conference, “Binding energy and photoionization cross-section of hydrogen-like donor impurity in strongly oblate ellipsoidal quantum dot”, 19-22 September, Ashtarak, Armenia, 2017. (Oral).
6. 4<sup>th</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2017), 19-25 September, 2017, Yerevan-Ashtarak, Armenia (Organizer - Director).
7. School Natural Science and Applications, “Application of Wolfram language in natural sciences”, 26-28 August, Tsakhkadzor, Armenia, 2017 (Lecture).
8. Final Conference “National and Sectorial Qualifications Frameworks of the Higher Education of Armenia: Achievements and Issues”, 17 May, Yerevan, 2017 (Lecture).
9. Seminar and Workshop on “Learning outcomes and study programmes – assessment and evaluation”, Tempus “Armenqa” project 543817, 17-21 April, Ghent, Belgium, 2017 (Participant)
10. Conference Devoted to the 75 Anniversary of E.M. Kazaryan, Russian-Armenian University, “Conical quantum dot in the presence of the electric field” February 23-24, Yerevan, Armenia, 2017 (Oral).
11. 11<sup>th</sup> Annual Scientific Conference of Russian-Armenian University, “Electronic and Optical Properties of the Conical Quantum Dots Ensemble”, 5-9 December, Yerevan, Armenia, 2016 (Oral).
12. “Implementation of National and Sectorial Qualification Frameworks in Armenia”, Workshop on “Finalizing SQFs in five subject areas of HE” and Training in “Using NQFs and SQFs for shaping programs of HE”, 15-16 December, Yerevan, 2016. (Lecturer and Trainer).
13. Scientific camp “Physics and We: lightning the optics”, “What is NANO?”, 8-12 August, 2016, Byurakan, Yerevan (Lecture).
14. 4<sup>th</sup> International Symposium of "Optics and its applications" (Optics-2016), July 25-28, Yerevan – Ashtarak, Armenia, 2016. (Organizer - Chair).
15. 3<sup>rd</sup> Russian School of young Scientists, St Petersburg, 21-25 June, 2016. (Participant)
16. Workshop on Twining project “Empowerment of the Tertiary Level Education of the Republic of Armenia for European Higher Educational Area Integration”, Yerevan, 5-6 April, 2016.
17. 3<sup>rd</sup> International Advanced School on “Frontiers in Optics & Photonics” (FOP-2016), 29 February - 12 March, 2016, Yerevan-Ashtarak, Armenia (Organizer -Director).
18. Issues of the Implementation of National and Sectorial Qualifications Frameworks in the Higher Education System of Armenia, Yerevan, 3-4 March, 2016.
19. Energy Materials and Nanotechnology (EMN) Guangzhou Meeting, “Magneto optics in conical quantum dot ensemble”, December 3-6, Guangzhou, China, 2015. (Invited Speaker).
20. Workshop on “Development of sectorial qualifications frameworks for Armenian higher education”, Tempus “Armenqa” project 543817, Osnabruck, 02-05 November, 2015. (Participant)



21. 3<sup>rd</sup> International Symposium of "Optics and its applications" (Optics-2015), October 1-5, Yerevan – Ashtarak, Armenia, 2015. (Organizer - Chair).
22. Armenian Wolfram Technology Conference, 26-27 September, Dilijan, Armenia, 2015. (Participant)
23. School on Anomalous Transport, Superconductivity and Magnetism in Nanosystems, 15-20 June, Kyiv – Ukraine, 2015. (Participant)
24. SPIE Microtechnologies, “Light absorption of cylindrical quantum dot with Morse potential in the presence of parallel electrical and magnetic fields”, 4 - 6 May, Barcelona, Spain, 2015. (Poster)
25. 2<sup>nd</sup> International Symposium on Optics and its Applications, September 1-5, Yerevan – Ashtarak, Armenia, 2014.
26. 2<sup>nd</sup> International Advanced School on “Frontiers in Optics & Photonics” 30 August - 5 September, Yerevan-Ashtarak, Armenia, 2014. (Invited Speaker).
27. SPIE Optical Metrology, 13-16 May, Munich, Germany, 2013.
28. Laser Physics 2013, 8-11 October, Ashtarak, Armenia, 2013.
29. Scientific Conference “Actual Problems of Nanoscale Systems Physics” dedicated to the 70<sup>th</sup> anniversary of NAS RA academician E.M. Kazaryan NAS of Armenia, March 21-22, Yerevan, Armenia, 2012.
30. International Advanced School on “Frontiers in Optics & Photonics” (FOP-2012) 2-7 July, Yerevan-Ashtarak, Armenia, 2012. (Invited Speaker)
31. Workshop on Supersymmetry in Integreble Systems, 27-30 August, Yerevan, Armenia, 2012.
32. International Conference Laser Physics 2012, Ashtarak, Armenia, 9-12 October, 2012.
33. 7<sup>th</sup> Annual Scientific Conference of Russian-Armenian (Slavonic) University, 3-7 December, 2012.
34. International Scientific Workshop Photonics & Micro- and Nano- structured Materials (PMNM - 2011), Yerevan, Armenia, June 28-30, 2011.
35. International Symposium "OPTICS and its applications" (OPTICS-2011), Yerevan – Ashtarak, Armenia, 5-9 September 2011.
36. International Conference Laser Physics 2011, Ashtarak, Armenia, 11-14 October, 2011.
37. 6<sup>th</sup> Annual Scientific Conference of Russian-Armenian (Slavonic) University, 5-9 December, 2011.
38. Second International School on Nanophotonics and Photovoltaics, Tsakhkadzor, Armenia, 15-22 September, 2010.
39. Third International Forum “ROSNANOTECH”, Moscow, 1-3 November, 2010.
40. Annual Scientific Conference of State Engineering University of Armenia, Yerevan, November 22-26, 2010.
41. 5<sup>th</sup> Annual Scientific Conference of Russian-Armenian (Slavonic) University, 6 - 10 December, 2010.
42. Second International Forum “ROSNANOTECH”, Moscow, 6-8 October, 2009.
43. 4<sup>th</sup> Annual Scientific Conference of Russian-Armenian (Slavonic) University, 30 November - 4 December, 2009.
44. International Advanced Research Workshop Modern Problems in Optics & Photonics (MPOP), Yerevan, Armenia, 27 August – 2 September, 2009.
45. Virtual Conference on Nanoscale Science and Technology, “VC-NST-2008” USA, July 24-29, 2008.
46. First International Forum “ROSNANOTECH”, Moscow, 6-8 October, 2008
47. 3<sup>rd</sup> Annual Scientific Conference of RAU, 5-10 December, 2008.
48. Annual Scientific Conference of State Engineering University of Armenia, Yerevan, October 6-9, 2008.

49. Semiconductor Micro and Nanoelectronics. The sixth international conference, Tsakhkadzor, Armenia, September 18-20, 2007.
50. Conference dedicated to the 50<sup>th</sup> anniversary of YSU Solid State Physics Chair, Yerevan, October, 2007.
51. 2<sup>nd</sup> Annual Scientific Conference of Russian-Armenian (Slavonic) University, 3-7 December, 2007.
52. Annual Scientific Conference of State Engineering University of Armenia, Yerevan, October 8-10, 2007.
53. International Conference Micro and Nanotechnologies With the Use of Ions Beams, Accelerated to Low and Average Energies. Obninsk, Russia, 16-18 October, 2007.
54. 14<sup>th</sup> Semiconducting and Insulating Materials Conference, SIMC-XIV, University of Arkansas, Fayetteville, Arkansas 72701, USA, May 15-20, 2007.
55. 10<sup>th</sup> International scientific conference and school. Actual problems of solid electronics and microelectronics. Divnomorskoye, Russia, 24-29 September, 2006.
56. Semiconductor Micro and Nanoelectronics. The fifth international conference, Agveran, Armenia, September 16-18, 2005.
57. 3<sup>rd</sup> National Conference of Young Physicists, Yerevan, YSU, Armenia, November 4-8, 2003.

## SCIENTIFIC PUBLICATIONS

1. D.B. Hayrapetyan, V.A. Harutyunyan, E.M. Kazaryan, Optical absorption and photoluminescence in the spherical InP/InSb/InP core/shell/shell nanostructure, *Advances in Materials Science and Engineering*, 2(1), pp. 1-7, 2018.
2. S.I. Pokutnyi, Y.N. Kulchin, V.P. Dzyuba, D.B. Hayrapetyan, Exciton Spectroscopy of Spatially Separated Electrons and Holes in the Dielectric Quantum Dots, *Crystals*, 8(4), 148, 2018.
3. D.B. Hayrapetyan, D.A. Baghdasaryan, E.M. Kazaryan, S.I. Pokutnyi, H.A. Sarkisyan, Exciton states and optical absorption in core/shell/shell spherical quantum dot. *Chemical Physics*, 506, pp. 26-30, 2018.
4. D.A. Baghdasaryan, D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, Thermal and magnetic properties of electron gas in toroidal quantum dot. *Physica E: Low-dimensional Systems and Nanostructures*, 101, pp. 1-4, 2018.
5. V.A. Harutyunyan, D.B. Hayrapetyan, E.M. Kazaryan, Interband Absorption and Photoluminescence in the Cylindrical Layered CdS/HgS/CdS Heterostructure. *Journal of Contemporary Physics*, 53(1), pp.48-57, 2018.
6. A.N. Sofronov, R.M. Balagula, D.A. Firsov, L.E. Vorobjev, A.A. Tonkikh, H.A. Sarkisyan, D.B. Hayrapetyan, L.S. Petrosyan, E.M. Kazaryan, Absorption of Far-Infrared Radiation in Ge/Si Quantum Dots, *Semiconductors*, 52 (1) 59–63, 2018
7. D.B. Hayrapetyan, G.L. Ohanyan, D.A. Baghdasaryan, H.A. Sarkisyan, S. Baskoutas, E.M. Kazaryan, Binding energy and photoionization cross-section of hydrogen-like donor impurity in strongly oblate ellipsoidal quantum dot, *Physica E: Low-dimensional Systems and Nanostructures*, 95, 27-31, 2018.
8. D.A. Baghdasaryan, D.B. Hayrapetyan, H.A. Sarkisyan, E.M. Kazaryan, S.I. Pokutnyi, Exciton states and direct interband light absorption in the ensemble of toroidal quantum dots, *Journal of Nanophotonics*, 11, 4, 046004, 2017.
9. H.T. Ghaltaghchyan, D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, Few body magneto-absorption in prolate ellipsoidal quantum dot, *Physics of Atomic Nuclei*, 80, 4, 769–773, 2017.

- 10.D.B. Hayrapetyan, Electronic states in conical quantum dot in the presence of electric field, Messenger of RAU, №1, 115-122, 2017.
- 11.D.A. Baghdasaryan, D.B. Hayrapetyan, H.A. Sarkisyan, E.M. Kazaryan, A. Medvids, Conical Quantum Dot: Electronic States and Dipole Moment, Journal of Contemporary Physics, 52 (2), pp. 129–137. 2017.
- 12.D.B. Hayrapetyan, L.S. Petrosyan, E.M. Kazaryan, H.A. Sarkisyan, Electron gas in asymmetric biconvex thin quantum lens: Realization of Kohn's theorem, Proceedings of the Yerevan State University, Physical and Mathematical Sciences, 51 (1), 109-112, 2017.
- 13.D.A. Baghdasaryan, D.B. Hayrapetyan, V.A. Harutyunyan, Optical transitions in semiconductor nanospherical core/shell/shell heterostructure in the presence of radial electrostatic field, Physica B: Condensed Matter, 510, 33-37, 2017.
- 14.D.B. Hayrapetyan, T.V. Kotanjyan, H.Kh. Tevosyan, E.M. Kazaryan, Effects of hydrostatic pressure on the donor impurity in a cylindrical quantum dot with Morse confining potential, Radiation Effects and Defects in Solids, 171, pp. 1-9, 2016.
- 15.V.A. Harutyunyan, D.B. Hayrapetyan, D.A. Baghdasaryan, Single-Electron States in Semiconductor Nanospherical Layer of Large Radius, Journal of Contemporary Physics, 51 (4), pp. 350–359. 2016.
- 16.D.B. Hayrapetyan, S.M. Amirkhanyan, E.M. Kazaryan, H.A. Sarkisyan, Effect of hydrostatic pressure on diamagnetic susceptibility of hydrogenic donor impurity in core/shell/shell spherical quantum Dot with Kratzer confining potential. Physica E: Low-dimensional Systems and Nanostructures, 84, 367-371, 2016.
- 17.D.A. Baghdasaryan, D.B. Hayrapetyan, E.M. Kazaryan, Quantum model of the prolate spheroidal Thomson hydrogen atom, Journal of Contemporary Physics, 51 (2) 157-161, 2016.
- 18.D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, Magneto-absorption in conical quantum dot ensemble: Possible applications for QD LED, Optics Communications, 371, 138–143, 2016.
- 19.D.A. Baghdasaryan, D.B. Hayrapetyan, E.M. Kazaryan, Optical properties of narrow band prolate ellipsoidal quantum layers ensemble, Journal of Nanophotonics. 10(3), 033508. 2016.
- 20.H.Ts. Ghaltaghchyan, D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, Few-body absorption in prolate ellipsoidal quantum dot, Journal of Physics: Conference Series, 673, p. 012012, 2016.
- 21.D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, Implementation of Kohn's Theorem for the Ellipsoidal Quantum Dot in the Presence of External Magnetic Field, Physica E: Low-dimensional Systems and Nanostructures 75, 353-357, 2016.
- 22.D.B. Hayrapetyan, A.V. Chalyan, E.M. Kazaryan, H.A. Sarkisyan, Direct Interband Light Absorption in Conical Quantum Dot, Journal of Nanomaterials, vol. 2015, Article ID 915742, 6 pages, 2015.
- 23.D.A. Baghdasaryan, D.B. Hayrapetyan, E.M. Kazaryan, Prolate spheroidal quantum dot: electronic states, direct interband light absorption and electron dipole moment. Physica B: Condensed Matter, 479, 85-89, 2015.
- 24.D.A. Baghdasaryan, D.B. Hayrapetyan, E.M. Kazaryan, Oblate spheroidal quantum dot: electronic states, direct interband light absorption and pressure dependence. The European Physical Journal B, 88 (9) 223, 2015.
- 25.Z.R. Panosyan, A.Z. Khachatryan, D.B. Hayrapetyan, S.S. Voskanyan, Y.V. Yengibaryan, Three-layer antireflection diamond-like carbon films on glass, Journal of Contemporary Physics, 50 (1) 72-78, 2015.
- 26.D.B. Hayrapetyan, E.M. Kazaryan, T.V. Kotanjyan, H.K. Tevosyan, Exciton states and interband absorption of cylindrical quantum dot with Morse confining potential, Superlattices and Microstructures, 78, 40-49, 2015.

- 27.D.B. Hayrapetyan, E.M. Kazaryan, L.S. Petrosyan, H.A. Sarkisyan, Core/shell/shell spherical quantum dot with Kratzer confining potential: Impurity states and electrostatic multipoles, *Physica E: Low-dimensional Systems and Nanostructures*, 66, 7-12, 2015.
- 28.D.B. Hayrapetyan, T.V. Kotanjyan, H.K. Tevosyan, Modeling of confinement potential for cylindrical quantum dot, *Journal of Contemporary Physics*, 49 (6), 272-276, 2014.
- 29.D.B. Hayrapetyan, E.M. Kazaryan, H.K. Tevosyan, Impurity states in a cylindrical quantum dot with the modified Pöschl-Teller potential, *Journal of Contemporary Physics*, 49 (3), 119-122, 2014.
- 30.D.B. Hayrapetyan, E.M. Kazaryan, H.K. Tevosyan, Optical properties of spherical quantum dot with modified Pöschl-Teller potential, *Superlattices and Microstructures* 64, 204-212, 2013.
- 31.D.B. Hayrapetyan, A.S. Achoyan, E.M. Kazaryan, H.K. Tevosyan, Electronic states in a cylindrical quantum dot with the modified Pöschl-Teller potential in the presence of external magnetic field, *Journal of Contemporary Physics*, 48 (6), 285-290, 2013.
- 32.D.B. Hayrapetyan, E.M. Kazaryan, H.A. Sarkisyan, On the possibility of implementation of Kohn's theorem in the case of ellipsoidal quantum dots, *Journal of Contemporary Physics*, 48 (1), 32-36, 2013.
- 33.D.B. Hayrapetyan, H. Kh. Tevosyan, E.M. Kazaryan. Direct Interband Light Absorption in the Cylindrical Quantum Dot with Modified Pöschl-Teller Potential. *Physica E*, vol. 46, p. 274-278, 2012.
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- 35.A. Abdul-Nagy, D.B. Hayrapetyan, Zh.R. Panosyan, Annealing Effects on the Optical and Structural Properties of DLC Films, *Journal of Material Science and Engineering B*, V 2 (4), pp.295-299, 2012.
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