

## Curriculum Vitae

### Personal information

First name(s) / Surname(s) **Volodya Harutyunyan**

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Nationality Armenian

Date of birth 17.06.1949

### Work experience

Dates September 2012-onward

Occupation or position held Associate-Professor, Professor

Name and address of employer Russian-Armenian (Slavonic) University, 123 H.Emin Str., 0051Yerevan, Armenia

Dates April 2000-September 2012

Occupation or position held Vice-Director

Name and address of employer State Engineering University of Armenia, Gyumri Branch, 2, M.Mkrtchyan st., 3103 Gyumri, Armenia

Type of business or sector Higher education

Dates September 1992-April 2000

Occupation or position held Assotiate-Professor

Name and address of employer Physics department, State Engineering University of Armenia, Gyumri Branch, 2, M.Mkrtchyan st., 3103 Gyumri, Armenia

Type of business or sector Higher education

Dates September 1972 - September 1992

Occupation or position held Assistant Professor (1972-1987), Associate Professor (1987-1992)

Name and address of employer Physics Department, Vanadzor State Pedagogical Institute, 36 Tigran Mets street, Vanadzor, Armenia

Type of business or sector Higher education

### Education and training

Dates 1999

Title of qualification awarded Doctor of Sciences (Physics)

Name and type of organisation providing education and training Institute of Applied Problems of Physics, National Academy of Sciences of Armenia, Yerevan, Armenia

Dates 1985

Title of qualification awarded Ph.D. (Physics)

Name and type of organisation providing education and training

Azerbaijan State University, Baku, Azerbaijan SSR

Dates

1966-1972

Title of qualification awarded

Diploma

Name and type of organisation providing education and training

Yerevan State University, Physics Department  
Yerevan, Armenia

**Personal skills and competences**

Mother tongue(s)

**Armenian**

Other language(s)

Self-assessment

*European level (\*)*

**Russian**

**English**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
A2	Basic user	B1	Independent user	A1	Basic user	A1	Basic user	B1	Independent user

**Publications:**

More than 70 scientific and

5 methodical publications,

1 monograph

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#### MAIN PUBLICATIONS

(as author of articles: V.A. Harutyunyan, or V.A. Arutyunyan, or V.A. Haroutyunian, or V.A. Haroutunian)

1. V.A.Harutyunyan , D.B.Hayrapetyan, E.M.Kazaryan, Optical absorption and photoluminescence in the spherical InP/InSb/InP core/shell/shell nanostructure, **Advances in Material Sciences and Engineering**, 2018,v.2, Iss.1,pp1-7.
2. V.A.Harutyunyan, Statistics of charge carriers of quantum semiconductor film in the presence of strong lateral electrostatic field, **AIMS Material Science**, 2018, v.5, Iss.2, pp.257-275.
3. 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**, volume 510, Feb.2017, pp.33-37.
4. V.A. Harutyunyan, D. B. Hayrapetyan, D. A. Baghdasaryan, Single-electron states in semiconductor nanospherical layer of large radius, **Journal of Contemporary Physics (Armenian Academy of Sciences)**, October 2016, Volume 51, Iss.4, pp 350–359.
5. V.A.Harutyunyan, E.M.Kazaryan, H.A.Sarkisyan, Electroabsorption in a narrow gap semiconductor nanotube in the field of uniformly charged ring, **Physica E: Low – dimensional systems and nanostructures**, v.64, p.p.7-14 (2014).
6. V.A.Harutyunyan, Semiconductor nanotube in the field of uniformly charged ring: Additional quantization in the form of one-dimensional hydrogen-type levels, **Physica E: Low – dimensional systems and nanostructures**, v.57, p.p.69-75 (2014).
7. V.A.Harutyunyan, Single-particle states and interband optical transitions in radially-symmetric semiconductor heterolayer , **Physica E: Low – dimensional systems and nanostructures**, v. 56, p.p.189-1955 (2014).
8. V.A.Harutyunyan, V.A.Gasparyan, Interband electrooptical transitions in InSb quantum well, **Physica E: Low – dimensional systems and nanostructures**, v. 53, p.p. 78-87 (2013).
9. V.A.Harutyunyan, V.A.Gasparyan, Analytical Consideration Of Quantum-Confined Stark-Effect

and Interband Optical transitions in Semiconductor Quantum Well, **Micro and Nanosystems**, v.5, p.p. 61-69 (2013).

10. V.A.Harutyunyan, V.A.Gasparyan, E.M.Kazaryan, H.A. Sarkisyan, Electron and hole states in a narrow-band semiconductor InSb film in the presence of uniform electrostatic field, **Journal of Contemporary Physics**, v.48, No4, p.p. 162-172 (2013).

11. V.A.Harutyunyan, V.A.Gasparyan, Effect of radial electrostatic field on optical absorption in semiconductor nanotube, **J. Phys. (Conference series)** v. 350, p.p.012019-1-012019-6 (2012).

12. V. A. Harutyunyan, Nanospherical heterolayer in strong electrostatic field, **Applied Nanoscience**, v.2, p.p. 339-344 (2012).

13. V.A. Harutyunyan, Electro-optical Transitions in a Semiconductor Cylindrical Nanolayer, **Physics of Solid States**, v.54, p.p.1096-1103 (2012).

14. V.A.Harutyunyan, M.Mkrtchyan, Semiconductor quantum ring in strong lateral electrostatic field, **Quantum Computers and Computing**, v. 11, p.p. 44-51 (2011).

15. V.A.Harutyunyan, Semiconductor nanotube in strong electrostatic field, **Journal of Applied Physics**, v.109, No 1, pp.014325-1 - 014325-8 (2011).

16. V.A.Harutyunyan, E.M.Kazaryan, H.A.Sarkisyan, Optical absorption in a narrow-gap InSb cylindrical layered nanowire in the presence of strong electrostatic field, **Journal of Contemporary Physics**, v.46, No 6, p.p.440-450 (2011).

17. V.A.Harutyunyan, G.H.Demirian, N.H.Gasparyan, Semiconductor nanotube in strong radial electrostatic field: spectrum of carriers and interband transitions, **Physica E: Low – dimensional systems and nanostructures**, v.42, No2, pp.614 - 619, 2010.

18. V.A.Harutyunyan, Semiconductor nanocylindrical layer in a strong electric field: spectrum of carriers and intraband transitions **Physics of the Solid State**, v.52, No.8, pp. 1744 -1749, 2010 (Russian version: **Fizika Tverdogo Tela**, v.52, No.8, pp.1621-1626, 2010).

19. V.A.Harutyunyan, Semiconductor nanocylindrical heterolayer in a radial electrostatic field: electronic spectrum and optical properties, **Applied Surface Science**, v.256, No. 2, pp. 455 - 459, 2009.

20. V.A.Harutyunyan, Cylindrical nanolayer in the strong uniform electrical field: the localization of carriers and electrooptical transitions, **Physica E: Low – dimensional systems and nanostructures**, v.41, No2, pp.695 -700, 2009.

21. V.A.Harutyunyan, S.L. Harutyunyan, G.H.Demirjian, N.H.Gasparyan, Optical absorption in a semiconductor cylindrical nanolayer, **Journal of contemporary physics**, v.43, No.5, pp. 218-

**225 (2008).**

22. **V.A.Harutyunyan**, Optical transitions in semiconductor nanospherical layer under the presence of perturbing electrical field, **Physica E: Low – dimensional systems and nanostructures**, v.39, No1, pp.37- 49 (2007).

23. **V.A.Harutyunyan, E.M.Kazaryan, A.A.Kostanyan, H.A.Sarkisyan**, Interband transitions in cylindrical layer quantum dot: influence of magnetic and electrical field, **Physica E: Low – dimensional systems and nanostructures**, v.36, pp. 114 - 118, 2007.

24. **V.A.Arutyunyan, S.L.Arutyunyan, G.O.Demirchyan,G.Sh.Petrosyan**, Optical transitions in a quantized cylindrical layer in the presence of a homogeneous electric field, **Semiconductors**, v.39, No.7 ,pp. 805 – 810 (2005), (Russian version: **Fizika i Tekhnika Poluprovodnikov**, v.39, No.7, pp.839 - 843, 2005).

25. **V.A.Harutyunyan, H.Sh.Petrosyan**, Influence of a homogeneous electric field on the exciton states in a quantized wire, **Journal of Contemporary Physics**, v.43, No.5, pp. 218-225 (2005).

26. **V.A.Harutyunyan, K.S.Aramyan, H.Sh.Petrosyan, G.H.Demirjian**, Optical transitions in spherical quantized layer under the presence of radial electrical field, **Physica E: Low – dimensional systems and nanostructures**, v.24, No3 - 4, pp.173 - 177, 2004.

27. **V.A.Haroutyunian**, Interband optical absorption in a small-radius quantized spherical film, **Thin Solid Films**, v.446, pp.258 - 263, 2004.

28. **V.A.Harutyunyan, K.S.Aramyan, H.Sh.Petrosyan** , Confinement Stark effect and electroabsorption in semiconductor cylindrical layer, **Physica E: Low – dimensional systems and nanostructures**, v.21, No3 - 4, pp.111-116, 2004.

29. **V.A.Arutyunyan, K.S.Aramyan, H.Sh.Petrosyan**, Quantum confinement Stark effect and electroabsorption in semiconductor spherical layers, **Semiconductors**, v.38, No.4, pp. 335 - 339, 2004 (Russian version: **Fizika i Tekhnika Poluprovodnikov**, v.39, No.7, pp.349 - 353, 2004).

30. **V.A.Harutyunyan, K.S.Aramyan, H.Sh.Petrosyan**, Innerband optical transitions in a semiconductor nanospherical layer, **Journal of Contemporary Physics**, v.39, No.3, pp. 25-31, (2004).

31. **V.A.Arutyunyan**, Quantum-confined Stark effect and intraband transitions in a semiconductor spherical layer, **Physics of the Solid State**, v.45, No.7, pp. 1342 - 1346, 2003 (Russian version:**Fizika Tverdogo Tela**, v.45, No.7, pp.1280 - 1283, 2003).

32. **V.A.Harutyunyan, H.G.Sultanyan**, Quantum-size stark effect in a semiconductor cylindrical layer, **Journal of contemporary physics**, v.38, No.1, pp. 29-34, (2003).

33. **V.A.Harutyunyan, H.G.Sultanyan**, Quantum-size stark effect in a semiconductor spherical layer, **Journal of contemporary physics**, v.37, No.4, pp. 35-40 (2003).
34. **V.A.Arutyunyan**, Effect of a radial electric field on absorption in a quantized spherical layer, **Semiconductors**, v.36, No.4, pp. 379 - 381, 2002 (Russian version: **Fizika i Tekhnika Poluprovodnikov**, v.36, No.4, pp.401 - 403, 2002).
35. **V.A.Haroutyunian, S.LHaroutyunian,E.M.Kazarian**, Electric field influence on excitone absorption in size-quantized films, **Thin Solid Films**, v.323, pp.209 - 211, 1998.
36. **V.A.Haroutyunian, S.L.Haroutyunian, E.M.Kazarian**, Possibility of Bose-condensation of excitons in size-quantized semiconductor disc, **Thin Solid Films**, v.170, pp. 321 - 326, 1989.
37. **V.A.Haroutunian, E.M.Kazarian**, Feasibility of the Bose-condensation of excitons in semiconductor sphere, **Physica Status Solidy (B) K115** , v.136, pp. k105-k108, 1986.
38. **V.A.Haroutyunian, E.M.Kazarian**, An investigation of the possibility of Bose-condensation of excitons in semiconducting films, **Thin Solid Films**, v.115, pp. 245 - 251, 1984.

#### Books:

1. **V.A.Harutyunyan**, “Effect of Static Electric Fields on The Electronic and Optical Properties of Layered Semiconductor Nanostructures. *PART I: Effect of Static Electric Fields on The Electronic Properties of Layered Semiconductor Nanostructures*”, **Bentham Science**, July 2015, 243 p.

#### PARTICIPATION IN INTERNATIONAL CONFERENCES

1. Electrooptical properties of spherical symmetric nanocrystalline layer in the presence of radial electric field, **Bulleten of APS v.48, N1, part I, p.504, Austin TX, USA, March -2003.**
2. The influence of uniform electrical field on the optical properties of size-quantized cylindrical semiconductor layer, **Symposium «Nano and Giga challenges in Microelectronics»,p.114, Cracow, Poland, 2004**
3. Optical transitions in spherical nanocrystalline layer in the presence of homogeneous electrical field, **Bulleten of APS March Meeting 2005, Abstract NK1.0009, Los-Angeles CA, USA 2005**
4. Electronic states in nanoradial cylindrical layer with quantum well of finite depth, **Reviews and Short Notes to Nanomeeting-2005, p.216-218, Minsk, 2005**
5. Optical properties of CdS/HgS/Cd nanospherical direct band semiconductor layer, **Proceedings of the International Conference «Electronoc and Photonic Materials, Devices and**

**Systems», p.D7-D9, Calcutta, India, 2006**

6. Optical Transitions in Cylindrical Nanolayer in the Presence of Radial Electric field, **Proceedings of the XXVI International Conference «Solid State Physics and Material Science», p.72- 73,Alexandria,Egypt, 2006**
7. Intersubband optical Transitions in Cylindrical Nanolayer in the Presence of Radial Electric field, **Proceedings of Ninth International Conference On Intersubband Transitions in Quantum Wells, p.22-23, Cumbria, Ambleside, UK, 2007**
8. Optical transitions in semiconductor nanotube under strong electrostatic field, **Proceedings of Ninth International Conference on the Science and Application of Nanotubes NT-08, p.378 Montpellier, France 2008.**
9. Semiconductor nanocylindrical heterolayer in a radial electrostatic field: the electronic spectrum and optical properties, **Proceedings of 2-nd International Conference of Surface and Interfaces, p.97, Puri, India, 2009**
10. Semiconductor nanospherical heterolayer in a radial electrostatic field:electronic spectrum and optical properties, **Modern problems in Optics &Photonics. Book of Abstracts of International Advanced Research Workshop, p.63-64, Yerevan, 2009**
11. Semiconductor quantum ring in strong lateral electrostatic field, **International Conference on Theoretical Physics 2011, Moscow, Russia, 20-23 of june, Book of Abstracts, p.22,**
12. Nanospherical heterolayer in strong electrostatic field, **2nd International Conference on ‘Advanced Nanomaterials and Nanotechnology (ICANN-2011), 8-10 Dec. 2011, Guwahati, India, Book of Abstracts, p.75.**
13. **V.A.Harutyunyan, V.A.Gasparyan,** Analytical Consideration of Quantum-Confined Stark-Effect and Intersubband Optical Transitions in Semiconductor Quantum Well, **Proceedings of 2-nd International Conference of Theoretical Physics and Its Applications, p.p. 49-58, Moscow, 2013.**
14. **V.A.Harutyunyan, E.M.Kazaryan, H.A.Sarkisyan,** Single-particle states and interband electrooptical transitions in InSb nanotube in the presence of electrostatic field of uniformly charged ring, **Proceedings of the 5<sup>th</sup> international conference on nanostructures (ICNS-5), Volume 2, EPP, PP.823-825, 6-9 March, Kish Island, Iran, 2014.**
15. **V.A.Harutyunyan,** Nanospherical Heterolayer in Radial Electrostatic Field, **Third International Conference on Advanced Complex Inorganic Nanomaterials, July 13-17, 2015, Namur, Belgium.**

16. **V.A.Harutyunyan, E.M.Kazaryan**, Influence of strong homogeneous electrostatic field on statistical properties of semiconductor nanofilm, **Abstract Booklet of the Seventh International Conference of Nanostructures(ICNS-7), Feb27-Mar 01, 2018 Tehran, Iran, v.Low 02, pp.1283-1285**