

CURRICULUM VITAE

Armen MELIKYAN

Education 1959-1965 - Yerevan State University, Faculty of Physics
1970 - PhD (Candidate of Sciences), Yerevan State University,
1984 - Doctor of Sciences, Physics and Mathematics. Moscow Institute of Physical Engineering. Thesis: Theory of Quasi-energy States as Applied to Nonlinear Optics.

Professional Experience 1970-1985 - Senior Researcher, Institute of Physical Researches, Armenian NAS

1985 - 2004 – Head, Dept. of Physics, State Engineering University of Armenia,
2004-2006 - Professor, Dept. of Physics, State Engineering University of Armenia,
2006 – present – Professor, Chair of General Physics and Quantum Nanostructures,
Russian- Armenian University, Yerevan, Armenia.
2014 - was elected Corresponding Member of the NAS of Armenia

Specialization: Main fields - Nonlinear Optics, Solid State Physics;
Current research – Nanooptics, Physics of Metals

Grants and Scholarships 1992 - Grant of the American Physical Society.

1992 - Grant of International Science Foundation.

1994-95- Long Term Grant of International Science Foundation.

1994-95 - NATO Research Fellowship, National Technical University of Athens.

1995-96 - Grant of Swiss Federal Institute of Technology (ETHZ).

1997-99- CRDF Grant AP1-376, UC Irvine

2000- 2003 - Grant of Swiss National Foundation, SCOPES Program, ETHZ.

2005- 2008 - Grant of Swiss National Foundation, SCOPES Program, EPFL

2008 - DAAD Scholarship, University of Saarland.

2011 - DFG Scholarship, University of Saarland.

2013 – 2016– Volkswagen Foundation Grant 86 933, Ulm University.

Courses taught: General Physics: Optics; Quantum Physics.

Fundamentals of theoretical physics

Languages Armenian, Russian - fluently, English - good.

Official Address: 123 Hovsep Emin Str. Russian-Armenian State University, Institute of Mathematics and High Technology, Yerevan 0051. Armenia. Tel: +37410-265-597

E-Mail: armen_melikyan@hotmail.com

Selected publications.

1. A.Sarycheva, T.Makaryan, K.Maleski et al., Two-Dimensional Titanium Carbide (MXene) as Surface-Enhanced Raman Scattering Substrate. *Journ. Phys. Chem. C* 121(36) 19983-19988 (2017)
2. E.Satheeskumar, T.Makaryan, A.Melikyan, H.Minassian, Yu. Gogotsi, M.Yoshimura One-step Solution Processing of Ag, Au and Pd@MXene Hybrids for SERS. *Scientific Reports* 6, 32049 (2016).

3. A. Melikyan, H. Minassian, Surface Plasmon Assisted Two-Photon Ionization of Noble and Alkali Metal Clusters. *Z.Phys.Chem.*, DOI 10.515/zph-2015-0731 (2016)
4. A.Melikyan, H.Minassian, V.Grigoryan, M.Springborg. Calculation of electron binding energies of Na^{-55} clusters. *Appl. Phys. B*, DOI 10.1007/s00340-016-6481-1 (2016).
5. M. R. Gonçalves, A. Melikyan, H. Minassian, T. Makaryan, and O. Marti. Strong dipole-quadrupole coupling and Fano resonance in H-like metallic nanostructures. *Optics Express* Vol. 22, Iss. 20, pp. 24516–24529 (2014).
6. V.G. Grigoryan, M. Springborg, H. Minassian, A. Melikyan. Optical properties of silver and copper clusters with up to 150 atoms. *Computational & Theoretical Chemistry*.2013, v.1021, pp. 197-205.
7. A.Melikyan, H.Minassian, V.Grigoryan, and M.Springborg. Shape dependence of optical properties of sodium clusters. *Appl. Phys. B*, 2013. DOI: 10.1007/s00340-013-5414-5.
8. K. Madoyan, A. Melikyan and H. Minassian. Radiation Damping of Surface Plasmons in a Pair of Nanoparticles and in Nanoparticles near Interfaces. *J. Phys. Chem. C*, 2012, 116 (31), pp 16800–16805.
9. K. Madoyan, A. Melikyan and H. Minassian, Strong Suppression of Surface Plasmon Radiation Damping Rate in Noble Metal Nanoshells. *Plasmonics*, v. 7, number 4 (2012), pp. 745-748.
10. K. Madoyan, A. Melikyan and H. Minassian. Radiation damping rate in plasmonic nanoruler: an analytical approach. *The 5th International Conference on Surface Plasmon Photonics* May 15-20, 2011 BEXCO, Busan, Korea. Abstracts, Vol.1 - Oral Papers, p.28.
11. K. Madoyan, A. Melikyan and H. Minassian. Semianalytical theory of Plasmon nanoruler. *Applied Physics B*, v.100, Issue 4, pp. 875 -881 (2010).
12. T. Makaryan, K. Madoyan, A. Melikyan and H. Minassian, Theoretical study of surface plasmon frequencies in a system of two coupled spheres and comparison with experimental data. *Photonics Europe 2010, Proc. SPIE 7212, 77121I* (2010).
13. M. Chergui, A. Melikyan and H. Minassian. Calculation of Surface Plasmon Frequencies of Two, Three and Four Strongly Interacting Nanospheres. *J. Phys. Chem. C*, v.113, pp. 6463-6471(2009).
14. A.Melikyan and H. Minassian. Calculation of Longitudinal Surface Plasmon Frequencies in Noble Metal Nanorods. *Chem. Phys. Lett.*, v. 452, pp. 139-143 (2008).
15. T.Makaryan, A.Melikyan, H.Minassian, Surface Plasmon Frequency Spectrum in a System of Two Spherical Dielectric Coated Metallic Nanoparticles. *Acta Physica Polonica A*, v. 112, n5, pp.1031-1035 (2007).
16. A.Melikyan, H.Minassian, On Surface Plasmon Damping in Metallic Nanoparticles. *Applied Physics B*, 78(3-4), pp. 455-457(2004).
17. A.Melikyan, H.Minassian, Review. Trapped Phonons in Ultrathin Metallic Films: Interpretation of Recent Femtosecond Experiments. *Quantum Electronics*, **32**, n9, pp. 756-764(2002).
18. A.Melikyan, H.Minassian, V.Truchin, E.Gini, G.Guekos. Nonlinear Interband Absorption of Intense Light Wave in Bulk InGaAsP. *Optics Communications*, **212**, (1-3) pp.183-190(2002)
19. A.Melikyan, H.Minassian, Phonon Confinement in Ultrathin Metallic Films: Interpretation of Recent Femtosecond Pump-Probe Experimental Data. In *Femtochemistry and Femtobiology*, World Scientific, pp.702-708(2002).
20. A.O.Melikyan, H.R.Minassian, Interaction of Vibrational Modes in Ultrathin Metallic Films Following Femtosecond Excitation. *Solid State Communications*, **119/8-9**, pp 497-499 (2001).
21. A.O.Melikyan, H.R.Minassian, Phonon Confinement in Ultrathin Nickel Films, *Chem.Phys.Lett.*, **331/2-4**, pp.115-118 (2000).

22. A.O.Melikyan, H.R.Minassian, Saturation of Interband Absorption in Semiconductors. *Semiconductors*, **34**, pp.386-388(2000).
23. B.V. Kryzhanowsky, A.O.Melikyan. Effects of intensity in resonance fluorescence. *Optics Communications*, v. 29, 1979.
24. A.O.Melikyan, S.H.Sahakian. Exact theory of resonant third-harmonic generation in gases. *Sov. Phys. JETP*, v.49(5), p. 776 (1979).
25. A.O.Melikyan. Quasi-energy of a 2-level system in an intense monochromatic field. *Sov.Phys. JETP*, v.41,p.610 (1975).
26. A.S.Agabekyan, A.O.Melikyan. Criteria of applicability of theory of resonance energy transfer. *Optika I Spektroskopiya*, v.32, p. 288 (1972).
27. M.L. Ter-Mikaelyan, A.O.Melikyan. Rayleigh and Raman scattering in field of an intense wave. *Sov. Phys. JETP*, v.31, p.153 (1970).
28. A.O. Melikyan. Quasi-energetic states of multilevel systems. *QuantumElectronics*, v.7, p.237 (1977).

Recent conferences

29. M. R. Gonçalves, T. Makaryan, H. Minassian, A. Melikyan, and O. Marti. Fano resonances in T-like configured nanospheroids. <http://www.dpg-verhandlungen.de/year/2014/conference/dresden/part/o/session/98/contribution/6>
30. M. R. Gonçalves, A. Melikyan, H. Minassian, T. Makaryan, and O. Marti. [http://benasque.org/2014nanolight/posters/Dipole-quadrupole plasmon coupling and Fano resonance in nanorods of T-like configuration.pdf](http://benasque.org/2014nanolight/posters/Dipole-quadrupole%20plasmon%20coupling%20and%20Fano%20resonance%20in%20nanorods%20of%20T-like%20configuration.pdf)
31. M. Gonçalves, O. Marti, T. Makaryan, A. Melikyan, H. Minassian. Fano resonance in H-like nanostructures. QuantArm-2014, Tsaghkadzor, September 22-26. Regular talk.