Curriculum Vitae

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Education:

Institution	Degree	Year
Razi University	Ph. D/Physics/Nano-optics)	Sep. 2009
Vali-e-Asr University of Rafsanjan	M.Sc/Physics/Laser	Sep 2005
Lorestan University	B.Sc/Physics	June 1998

Research Experience/Employment

Sep. 2009 - Present: Department of Physics, Razi University, Kermanshah, Iran

Teaching Experience

Undergraduate students:

General Physics (Classical Mechanics, Electricity and Magnetism),

Theory of Electromagnetics (I & II), Mathematical Methods of Physics (I & II)
Modern Optics, Optoelectronics, Spectroscopy, Numerical calculations

Graduate students:

Quantum Electronics, Nonlinear optics, Quantum optics, Photonics, Laser Physics
Laser Applications, Special Topics, Numerical physics

Ph.D Thesis:

Title of Ph.D thesis: Interaction of intense laser field with single-walled carbon nanotubes;High-order harmonic generation

M.Sc Thesis:

Title of M.Sc thesis: Theoretical study of hybrid TEA –CO_2 Lasers

Research interests:

Optics and Photonics, Nano-optics, Nonlinear Optics, Quantum optics & Plasmonics

Publications:

1. N Daneshfar, A Bahari, M Jalilian, Optical bistability in an asymmetric Fabry-Perot optical cavity filled with hybrid molecules formed by a semiconductor quantum dot coupled to a graphene-covered nanosphere, Quarterly Journal of Optoelectronic (2025).
2. M Jalilian, N Daneshfar, A Bahari, Optical Bistability in a Nanodimer Made of Two Graphene-Coated Nanoparticles with a Molecule Situated in the Gap Region, Plasmonics (2025), Doi:10.1007/s11468-025-03122-0.
3. M Abbasi Moghaddam, N Daneshfar, Study of nonlinear optical absorption and optical sideband generation in a hybrid plasmonic nanoparticle-quantum dot-DNA system in the presence of two optical fields, Scientific Reports 15, 23685 (2025).
4. M Rashidi, N Daneshfar, Second harmonic generation in a plexcitonic system comprising a quantum dot coupled to a reduced-symmetry plasmonic nanoparticle, Results in Physics 75, 108302 (2025).
5. H Foroughi, N Daneshfar, Bistable optical response of a three-cavity hybrid optomechanical system: effect of Kerr nonlinearity, JOURNAL OF MODERN OPTICS 72, 517-525 (2025).
6. M Jalilian, A Bahari, N Daneshfar, Investigation of optical bistability from a graphene-wrapped nanoparticle near a pair of molecules and an electric point charge, Applied Physics A 131 (8), (2025).

7. G Heydarpour, N Daneshfar, Study of the linear and nonlinear optical properties of quantum dot molecules: Tunneling induced transparency, Iranian Journal of Physics Research 24 (2), 159-166 (2024).

8. H Foroughi, N Daneshfar, Comparison of optical bistability in two different hybrid optomechanical systems: Impact of quantum dot molecules, Iranian Journal of Physics Research 24 (2), 237-243 (2024).

9. M Abbasi Moghaddam, N Daneshfar, Two- and three-photon absorption cross-section investigation in nanometer-sized heterodimer and heterotrimer structures, The European Physical Journal Plus 139 (7), 607 (2024).

10. N Daneshfar, M Rashidi, Study of the impact of polarization and shape factor on the nonlinear optical response of a hybrid molecule including a semiconductor quantum dot coupled two metallic nanoparticles, Iranian Journal of Physics Research 23 (4), 555-561 (2024).

11. N Daneshfar, S Nouraei, H Rezania, The Far‐Field Optical Properties and Fluorescence Enhancement of Multilayer Plasmonic Nanoshells Containing a Luminescent Layer, *Plasmonics* **19**, 2179–2191 (2024).

12. M Rashidi, N Daneshfar, Enhanced second harmonic generation from a hybrid nanosystem consisting of a semiconductor quantum dot in the presence of two spheroidal plasmonic nanoparticles, The European Physical Journal Plus 138 (8), 9 (2023).

13. H Foroughi, N Daneshfar, Study of optical bistability in a double-cavity hybrid optomechanical system consisting of an optical cavity coupled with a mechanical resonator filled with semiconductor quantum dot molecules, The European Physical Journal D 77 (6), 11 (2023).

14. N Daneshfar, M Mohammadbeigi,Theoretical study of the nonlinear optical effects in tunable plasmon–exciton hybrid nanosystems: third- and fifth-order optical processes, The European Physical Journal Plus 138 (5), 12 (2023).

15. M Afshari-Bavil, N Daneshfar, D Liu, On Thermally Controlled Light Propagation in Plasmonics Waveguide and Filter, Journal of Physics & Astronomy 10 (11), 11 (2022).

16. N Daneshfar, S Shahrabadi, Investigation of optical density in photonic quasicrystals for filtering applications: Effect of composite layers, AIP Advances 12 (3), 1-5 (2022).

17. N Daneshfar, The Study of Scattering-to-absorption Ratio in Plasmonic Nanoparticles for Photovoltaic Cells and Sensor Applications, Plasmonics, 1-7 (2021).

18. N Daneshfar, Z Noormohammadi, The study of optical bistabiltiy in a hydrodynamic metallic nanoparticle, Iranian Journal of Physics Research 21 (1), 63-67 (2021).

19. N Daneshfar, Z Noormohammadi, Optical second harmonic generation from plasmonic nanoshells using the nonlocal hydrodynamic model, Journal of Luminescence 232, 117853 (2021).

20. M Jalilian, N Daneshfar, The study of intermolecular energy transfer in a molecule-plasmon system: The effect of an electric charge (2020). Physics of Plasmas 27 (3), (2020).

21. M Jalilian, T Naseri, N Daneshfar, The energy transfer between a pair of molecules (donor-acceptor) in the vicinity of a graphene-coated nanoparticle, Iranian Journal of Physics Research 19 (4), 851-855 (2020).

22. N Daneshfar, Z Noormohamadi, Optical surface second harmonic generation from plasmonic graphene-coated nanoshells: influence of shape, size, dielectric core and embedding medium, Applied Physics A 126 (1), 55 (2020).

23. N Daneshfar, T Naseri, M Moradbeigi, Study of slow light in a composite consisting of core-shell cylindrical nanoparticles doped in a dielectric, Iranian Journal of Physics Research 18 (4), 697-704 (2019).

24. N Daneshfar, M Moradbeigi, T Naseri, Electromagnetically induced transparency in a plasmonic system comprising of three metal-dielectric-metal parallel slabs: Plasmon-Plasmon interaction, Iranian Journal of Physics Research 17 (5), 709-715 (2019).

25. T Naseri, N Daneshfar, M Moradi-Dangi, F Eynipour-Malaee, Terahertz optical bistability of graphene-coated cylindrical core–shell nanoparticles, ournal of Theoretical and Applied Physics 12 (4), 257-263 (2018).

26. N Daneshfar, T Naseri, M Jalilian, Effect of gain medium and graphene on the resonance energy transfer between two molecules positioned near a plasmonic multilayer nanoparticle, Physics of Plasmas 25 (9) (2018).

27. T Naseri, N Daneshfar, Optical bistability of a plexcitonic system consisting of a quantum dot near a metallic nanorod, Journal of Theoretical and Applied Physics 12 (3), 183-189 (2018).

28. N Daneshfar, M Tabrizi, S Aminijavid, Study of optical properties of a plasmonic nanoparticle on a dielectric substrate, Iranian Journal of Applied Physics 8 (1), 11-19 (2018).

29. T Naseri, N Daneshfar, F Pourkhavari, Investigation of optical bistability in core-shell nanoparticles consisting of nonlocal core and magnetoplasmonic shell, Physics of Plasmas 25 (8) (2018).

30. N Daneshfar, A Yavari, Sensing based on the energy transfer in a hybrid plasmonic-molecular system: The orientation effect of the donor and acceptor molecules, Physics of Plasmas 25 (1) (2018).

31. N Daneshfar, T Naseri, H Foroughi, Influence of Anisotropy on Optical Bistability in Plasmonic Nanoparticles with Cylindrical Symmetry, Plasmonics 13 (2), 385-392 (2018).

32. T Naseri, N Daneshfar, S Shafiipour, M Moradbeigi, Study of optical absorption and dispersion in a semiconductor-metal nanoparticle hybrid system: Exciton-plasmon coupling, Iranian Journal of Applied Physics 7 (1), 31-42 (2017).

33. N Daneshfar, T Naseri, Switching between optical bistability and multistability in plasmonic multilayer nanoparticles, Journal of Applied Physics 121 (2) (2017).

34. N Daneshfar, H Foroughi, Optical bistability in plasmonic nanoparticles: effect of size, shape and embedding medium, Physica E: Low-dimensional Systems and Nanostructures 83, 268-274 (2016).

35. N Daneshfar, A Yavari, Transfer of energy between a pair of molecules near a plasmonic core-shell nanoparticle: Tunability and sensing, Physics of Plasmas 23 (5) (2016).

36. N Daneshfar, Second-harmonic generation from bimetal composites doped with metal nanoparticles, Physica E: Low-dimensional Systems and Nanostructures 79, 80-86 (2016).

37. N Daneshfar, M Moradi, An analytical solution for light scattering by metallic cylindrical nanoparticles with core–shell structure, Modern Physics Letters B 30 (05), 1650041 (2016).

38. N Daneshfar, N Moradbeigi, Solutions for the electric potential and field distribution in cylindrical core-shell nanoparticles using the image charge method, AIP Advances 5 (12) (2015).

39. N Daneshfar, Study of energy transfer between molecules placed in the vicinity of a bimetal composite nanoparticle, Physics of Plasmas 22 (10) (2015).

40. N Daneshfar, Effect of interparticle plasmon coupling and temperature on the optical properties of bimetallic composite nanoparticles with a core-shell structure, Journal of Applied Physics 117 (12) (2015).

41. N Daneshfar, K Bazyari, Optical and spectral tunability of multilayer spherical and cylindrical nanoshells, Applied Physics A 116 (2), 611-620 (2014).

42. N Daneshfar, Temperature dependence of the optical characteristics and surface plasmon resonance of core-shell nanoparticles, Physics of Plasmas 21 (6) (2014).

43. H Fuladvand, A Salehi, N Daneshfar, A Bahrampour, RF Moghaddam, The Intra-cavity Mode Competition and Laser Absorption Spectroscopy with CO2 Laser, Optik 125 (10), 2248-2255 (2014).

44. N Daneshfar, A Bahari, Theoretical study of armchair single-walled carbon nanotubes in the presence of a strong laser field: high harmonic generation, Applied Physics A 110 (1), 105-110 (2013).

45. H Rezania, N Daneshfar, Study of third-harmonic generation in zigzag carbon nanotubes using the Green function approach, Applied Physics A 109 (2), 503-508 (2012).

46. N Daneshfar, A Bahari, Study of dielectric corona pre-ionization in hybrid TEA lasers, Optik 123 (14), 1297-1300 (2012).

47. A Bahari, AR Mohamadi, N Daneshfar, Effect of number of walls on plasmon energy in interaction of charged particles with double walled metallic nanotubes, Optics Communications 285 (5), 800-803 (2012).

48. N. Daneshfar, A. Bahari, "Rabi frequency and nonlinear optical response of semiconductor carbon nanotubes", *J. Opt.* ***12****, 095202 (2010).*

49. H. Khosravi, N. Daneshfar, and A. Bahari, *"*Theoretical study of the light scattering from two alternating concentric double silica-gold nanoshell*", Plasma of Physics, 17, 1 (2010).*

50. H. Khosravi, N. Daneshfar, and A. Bahari, "Effect of a magnetic field on high-harmonic generation by carbon nanotubes", *Optics Letters, 34, Issue 11, 1723-1725(2009).*

51. A. Bahari, N. Daneshfar, and H. Khosravi, "High-order harmonic generation by carbon nanotubes in bichromatic laser field", *Carbon 47, Issue2, 457-462, (2009).*

52. H. Khosravi, N. Daneshfar, and A. Bahari, "Interaction of charged particles with nanotubes''**,** *Optics Communications 281, 5045-48 (2008).*

53. H. Khosravi , A.R. Bahrampour, A. Bahari, R. Farrahi, N. Daneshfar, "Theoretical study of hybrid TEA–CO_{2} lasers" *Optics & Laser Technology 40, 779–784 (2008).*

54. H. Khosravi, A. Bahari, and N. Daneshfar, "Theoretical study of the high-order harmonic generation by carbon nanotubes", *Physica. Scripta. 77, 055702(1-4) (2008).*

55. N. Daneshfar, "Interaction of laser pulse with semiconductor carbon nanotubes:Rabi oscillations", AIP Conference Proceedings 1400, 434 (2011).

Conferences **(Oral /Poster Presentations):**

1 N. Daneshfar**,** A. R. Bahrampour, and R. Farrahi**, "**Theoretical study of Hybrid CO_2 Lasers with considering of CO effects**"** 12th Conference on Optics & Photonics, Feb 2006, Shiraz, Iran (Oral Presentation).

2 N. Daneshfar**,** H. Khosravi, and A. Bahari**, "**High-Order Harmonic Generation in Carbon Nanotubes**",** 2th Nanotecnology conference, Sep 2007, Kashan, Iran (Oral Presentation).

3 N. Daneshfar**,** H. Khosravi, and A. Bahari**, "**Interaction of strong fields with carbon nanotubes**",** 6th Nanotecnology conference, Dec 2009, Tehran, Iran(Oral Presentation).

4 N. Daneshfar**, "**Interaction of laser pulse with semiconductor carbon nanotubes:Rabi oscillations**",** Advances in Applied Physics and Materials Science Congress, 12-15 May 2011, Turkey.

5 . N. Daneshfar, K. Bazyari "Study of optical properties of nanoshells", Annual Physics Conference of Iran, 26-29 August 2013, Birjand University, Iran.

6 K. Bazyari, N. Daneshfar, Study of scattering and absorption by 5-layer cylindrical and spherical Nanoshells, 20th Iranian Conference on Optics and Photonics and 6th Iranian Conference on Photonics Engineering and Technology, 28-30 January 2014, Shiraz University of Technology-Shiraz.

7 Optical Properties of Three Layer metal - Semiconductor - metal nanoshell, International coference on mathematical modeling in Physical Sciences.

8 Influence of temperature on the optical absorption of nanoshells", 5th International Conference on Nanostructures (ICNS5).

9 N. Daneshfar, The second harmonic generation in plasmonic nanotubes, Annual Physics Conference of Iran, University of Tabriz, 2019

10 Comparison of optical properties of one-dimensional quasiperiodic Thue-Mosre and Fibonacci photonic structures,