

Marzieh Nadafan



CONTACT

Address:

Department of Physics, Faculty of Science, Shahid Rajaee Teacher Training University (SRTTU)
16788-15811, Lavizan, Tehran, Iran

Phone:

+98 02122970060

Email:

m.nadafan@sru.ac.ir
m_naddafan@yahoo.com

ORCID

0000-0002-0052-7975

LANGUAGES

Persian

English

Personal Information

Place of birth Mashhad, Iran

Nationality Iranian

Current Position

Assistant Professor SRTTU

Education

2009-2015 (1388-1394)

Ph.D. in Atomic and Molecular Physics

Tarbiat Modares University, Tehran, Iran.

Supervisor: Prof. R. Malekfar

Thesis: Preparation and characterization of optical properties of doped rigid foam polyurethane with nano oxide precursors of cordierite glass ceramics.

2005-2007 (1384-1387)

M.Sc. in Atomic and Molecular Physics

Tarbiat Modares University, Tehran, Iran

Supervisor: Dr. Ghorbanzadeh

Thesis: The spectroscopy of hyperfine structure and determining some characteristics of Rb atomic beam by Doppler-Free method.

2000-2004 (1379-1383)

B.Sc. in Applied Physics

Ferdowsi university of mashhad, Mashhad, Iran

Research Interest

Nonlinear optical properties

Awards and Honors

Excellent Teaching Award, SRTTU (2020)

Publications

(Corresponding author is highlighted with *)

1. The refractive index sensor of the SMF covered by nanodiamond layer, **M. Nadafan***, J.Z. Anvari, A. Ahmadian, Z. Reyhani clor, *Acta Physica Polonica A*, 2021.
2. The effect of synthesis situation on the structural, dielectric, linear and nonlinear optical properties of thiol-capped water-soluble lead sulfide (PbS) quantum dots, Z. Dehghani*, **M. Nadafan**, A.F. Alamouti, *Optik* 245, pp. 167623, 2021.
3. Investigation of the linear and nonlinear optical properties of La_{2-x}Sr_xCoO₄ (x = 0.5, 0.7, 0.9, 1.1, 1.3 and 1.5) nanoparticles, **M. Nadafan**, T. Ghorbani-Moghadam*, M. Mousavi, *Journal of Materials Chemistry C* 9(32), pp. 10443–10452, 2021.
4. Third-Order Nonlinear Optical Behavior of an Amide-Tricarboxylate Zinc(II) Metal-Organic Framework with Two-Fold 3D+3D Interpenetration, R. Abazari, E. Yazdani*, **M. Nadafan**, ..., C.L. Carpenter-Warren, *Inorganic Chemistry* 60(13), pp. 9700–9708, 2021.
5. Transmission behavior of single-mode fiber based on a microchannel, **M. Nadafan***, A. Ahmadian, S.N. Arab, J.Z. Anvari, *Acta Physica Polonica A* 139(6), pp. 627–633, 2021.
6. Z-scan investigation to evaluate the third-order nonlinear optical properties of cauliflower-like VS₂ structures, M. Parishani, **M. Nadafan**, R. Malekfar*, *Journal of the Optical Society of America B: Optical Physics* 38(5), pp. 1586–1592, 2021.
7. Application of nitrogenated holey graphene for detection of volatile organic biomarkers in exhaled breath of humans with chronic kidney disease: a density functional theory study, R. Majidi*, **M. Nadafan**, *Journal of Computational Electronics*, 2021.

8. Cu-doped ZnO synthesis by ionothermal method: Morphology and optical properties, M. Sabbaghan, **M. Nadafan***, H.R. Lamei, *Optical Materials*, 111, pp. 110679, 2021.
9. Structural and Optical Coefficients Investigation of γ -Al₂O₃ Nanoparticles using Kramers-Kronig Relations and Z-scan Technique, A. Faraji Alamouti, **M. Nadafan***, Z. Dehghani, M. H. Majles Ara, A. Vejdani Noghreiyani, *Journal of Asian Ceramic Societies* 9, pp. 366-373, 2021.
10. Third-order optical nonlinear properties of Co-doped V₂O₅ nanoparticles, M. Mousavi, **M. Nadafan***, Sh. Tabatabai Yazdi, *Optik* 226, pp. 165925, 2021.
11. Comparative study of the third-order nonlinear optical properties of ZnO/Fe₃O₄nanocomposites synthesized with or without Ionic Liquid, **M. Nadafan***, M. Sabbaghan*, P. Sofalgar, J. Z. Anvari, *Optics & Laser Technology* 131, pp. 106435, 2020.
12. Detecting compressive strain by evaluation of Raman spectroscopy of the multiwall Carbon nanotubes/TiO₂ nanocomposites, **M. Nadafan***, A. S. Alattar, Z. Dehghani, R. Malekfar, *International Journal of Nano Dimension* 11 (2), pp. 168-176, 2020.
13. Study of optical constants and dielectric properties of nanocrystalline α -cordierite ceramic, **M. Nadafan***, R. Majidi, *Journal of Asian Ceramic Societies* 8, pp. 502-509, 2020.
14. Evaluation of structural, optical and dielectric properties of MWCNTBaTiO₃/silica ceramic nanocomposites, **M. Nadafan***, M.R. Tohidifar, *Ceramics International* 46, pp. 12243-12248, 2020.
15. Detection of exhaled gas by γ -graphyne and twin-graphene for early diagnosis of lung cancer: A density functional theory study, R. Majidi*, **M. Nadafan**, *Physics Letters A* 384, pp. 126036, 2020.
16. Calculating of the Refractive index, the absorption and the third order susceptibility coefficients in the nematic liquid crystal 5CB and ZnS nanoparticles complex, Z. Dehghani*, **M. Nadafan**, A. Faraji Alamooti, *Nano dimension (In Persian)* 6(4), pp. 54-60, 2020.
17. Evaluation of the structural, optical and physical properties of polyurethane composites by metal alkoxide, **M. Nadafan***, J.Z. Anvari, *Materials Science-Poland* 38 (3), 2020.
18. Structural, Optical And Dielectric Studies Of Ag Nanoparticles

- Decorated By Herceptin, N. Jafarzadeh, **M. Nadafan**, R. Malekfar, A. Shakeri-Zadeh, A. Meidanchi*, S. Eynali, *Physica E-Low-Dimensional Systems & Nanostructures* 114, pp. 113562, 2019.
19. The effect of external applied fields on the third order nonlinear susceptibility and two-photon absorption cross-section of E5CN7@Fe3O4-CNT, M.H. Majles Ara*, Z. Dehghani, **M. Nadafan**, *Optics & Laser Technology* 119, pp. 105653, 2019.
 20. Assessment of the optical and dielectric properties of f-MWCNTs/BaTiO3 nanocomposite ceramics, **M. Nadafan***, M.R. Tohidifar, M. Karimi, R. Malekfar, G.H. Khorrami, *Ceramics International* 44(13), pp. 15804-15808, 2018.
 21. The effect of different doses of γ -ray irradiation on the third-order nonlinear optical properties, molecular structure and mass attenuation coefficients of synthesized colloidal silver nanoparticles, Z. Dehghani*, A. Vajdani Noghreiyani, **M. Nadafan**, M. H. Majles Ara, *Physica E: Low-dimensional Systems and Nanostructures* 103, pp. 423-429, 2018.
 22. Optical and dielectric properties of NiFe2O4 nanoparticles under different synthesized temperature, M. Parishani, **M. Nadafan***, Z. Dehghani, R. Malekfar, G.H.H. Khorrami, *Results in physics*, pp. 3619-3623, 2017.
 23. Investigation of electrical and nonlinear optical properties of colloidal composite nematic liquid crystal, Z. Dehghani*, N. Dalir, **M. Nadafan**, M.H. Majles Ara, E. Saievar Iranizad, *Journal of Molecular Liquids* 225, pp. 502-509, 2017.
 24. The effect of magnetic metal doping on the structural and the third-order nonlinear optical properties of ZnS nanoparticles, Dehghani, Z. Shadrokh, **M. Nadafan**, *Optik* 131, pp. 925-931, 2017.
 25. Investigation of gamma-ray irradiation on molecular structure, optical properties and mass attenuation coefficients of colloidal gold nanoparticles, Z. Dehghani*, A. Vajdani Noghreiyani, **M. Nadafan**, M.H. Majles Ara, *Optical Materials* 70, pp. 99-105, 2017.
 26. Third-order nonlinear optical properties of NiFe2O4 nanoparticles by Z-scan technique, **M. Nadafan***, Marziye Parishani, Zahra Dehghani, Javid Z. Anvari, Rasoul Malekfar, *Optik* 144, pp. 672-678, 2017.
 27. Measurement of third-order nonlinear optical susceptibility of polyurethane-containing silica nanocomposites by Z-scan method, Z. Dehghani, **M. Nadafan***, R. Malekfar, M.H. Majles Ara, *Inorganic And*

28. The Third Order Nonlinear Optical behavior of Poly Ether Urethane, **M. Nadafan***, R. Malekfar, Z. Dehghani, *The Journal of Interfaces and Thin Films* 1, pp. 25-30, 2017.
29. Synthesis and nonlinear optical studies of organometallic Cobalt (II) with polyurethane elastomer, **M. Nadafan***, Z. Dehghani, S.I. Fakhrinia, *Optik* 127, pp. 9361-9366, 2016.
30. Synthesis of Gold Nanoparticles and The improvement of their Optical Properties and Mass Attenuation Coefficient under Gamma-ray Irradiation, Z. Dehghani*, A. Vejdani Noghreiyani, M. H. Majles Ara, **M. Nadafan**, *Nanoscale* 3(1), pp. 11-16, 2016.
31. Determination of nonlinear optical properties of MgO nanoparticles doped in Poly (Ether) Urethane, **M. Nadafan**, R. Malekfar*, Z. Dehghani, *Acta Physica Polonica A* 128(1), pp. 29-33, 2015.
32. Microstructural and nonlinear optical properties of SiO₂ and Al₂O₃ nanoparticles doped in polyurethane, **M. Nadafan**, R. Malekfar*, Z. Dehghani, *Journal of Materials Research* 30(11), pp. 1788-1796, 2015.
33. structural and optical properties of cordierite glass-ceramic doped in a polyurethane matrix, **M. Nadafan***, R. Malekfar*, Z. Dehghani, *AIP Advances* 5(6), pp. 067135-1:10, 2015.
34. The effect of external applied fields on the third order nonlinear susceptibility of ferro-nematics, Z. Dehghani, **M. Nadafan**, E. Saievar Iranizad*, *Journal of Molecular Liquids* 204, pp. 70-75, 2015.
35. Investigation of electric field effect on the third order nonlinear optical properties of Fe₃O₄ nanoparticles-doped nematic liquid crystal, E. Saievar Iranizad*, Z. Dehghani, **M. Nadafan**, *Optics communications* 334, pp. 16-21, 2015.
36. Synthesis and Analysis of Optical Properties of Cordierite Nanopowder Prepared by the Pechini Method, **M. Nadafan**, R. Malekfar*, Z. Dehghani, Gh. H. Khorrami, *Procedia Materials Science* 11, pp. 331-335, 2015.
37. Investigation into properties of polyurethane closed cell by high loading of SiO₂ nanoparticles, **M. Nadafan**, R. Malekfar*, Z. Dehghani, *International Journal of Nanoscience and Nanotechnology* 11(3), pp. 185-192, 2015.
38. Compressive Strain of MWCNTs Doped in Titania Covered by Ag Nanop

- A. Alattar, R. Malekfar*, **M. Nadafan**, *nanoscale* 1(1), pp. 19-24, 2015.
39. Microstructural and antibacterial properties of Silver nanoparticle-decorated porous polyurethane surface for water purification, **M. Nadafan***, R. Malekfar, Ali Izadi-Darbandi, Z. Dehghani, *Desalination and Water Treatment* 57, pp. 21286-21293, 2015.
40. Nonlinear refractive (NLR) Index of TiO₂ NPs in E5CN7 Nematic liquid Crystal under CW laser Illumination, Z. Dehghani*, M.H. Majles Ara, H. Hoseinzade Saraf, **M. Nadafan**, N. Dalir, *Procedia Materials Science* 11, pp. 706-710, 2015.
41. Nonlinear Optical Properties of Rigid Polyurethane Foam/SiO₂ Nanocomposite, **M. Nadafan**, R. Malekfar, Z. Dehghani, *International Journal of Optics and Photonics (IJOP)* 8(2), pp. 85-93, 2014.
42. Nonlinear optical properties of nematic liquid crystal doped with different compositional percentage of synthesis of Fe₃O₄ nanoparticles, E. Saievar Iranizad*, Z. Dehghani, **M. Nadafan**, *Journal of Molecular Liquids* 190, pp. 6-9, 2014.
43. High loading of SiO₂ nanoparticles to investigate optical and Mechanical properties of polyurethane open cell, **M. Nadafan***, Rasoul Malekfar, Ali Izadi-Darbandi, Zahra Dehghani, *Advanced Material Research* 829, pp.30-35, 2014.
44. Optical properties of synthesized Fe₃O₄ nanoparticles doped in nematic liquid crystal under electric field, E. Saievar Iranizad, Z. Dehghani, **M. Nadafan**, *Advanced Material Research* 829, pp.836-840, 2014.

Conference (International)

1. Early diagnosis of lung cancer by detection of exhaled gas: A density functional theory study, Majidi, Roya; **Nadafan, Marzieh**, 4th Iranian Computational Physics Conference, 2020, Tehran, I.R. Iran.
2. Electric field investigation of light propagation in an optical fiber covered by nano Carbon layer, NajafiArab, Sareh; **Nadafan, Marzieh**; Zamir Anvari, Javid; Ahmadian, Azadeh; Rihany, Zahra, 4th Iranian Computational Physics Conference, 2020, Tehran, I.R. Iran.
3. Nonlinear Optical Properties of Ferrite Nickel Nanoparticles, **M. Nadafan**, M. Parishani, R. Malekfar, Z. Dehghani, 7th international congress on nanoscience & nanotechnology, 2018, Tehran, I.R. Iran.
4. Investigation of hydrogen bonding index of polyurethane-silica nanocomposite using FTIR spectroscopy, **M. Nadafan**, Z. Dehghani, R.

- Malekfar, Physics conference of Iran, 2018, Ghazvin, I.R. Iran.
5. Enhanced of nonlinear optical responses of nematic liquid crystal with single walled carbon nanotubes, . Dehghani, N. Dalir, **M. Nadafan**, physics conference of Iran, 2018, Ghazvin, I.R. Iran.
 6. The effect of γ -ray irradiation on the linear and nonlinear optical properties of Al₂O₃ nanoparticles, A.F. Alamouti, A.V. Noghreiyani, M.H.M. Ara, **M. Nadafan**, Physics conference of Iran, 2018, Ghazvin, I.R. Iran.
 7. Investigation of basis set selection in the study of Zinc sulfide structure, M.T. Rahimi, J.Z. Anvari, M. Nadafan, E. Talebian, 3th conference of Iranian computational physics, 1397, Tehran, I.R. Iran.
 8. The comparison between DFT and Hartree-fock computational methods in calculating vibrational frequencies of zinc sulfide, M.T. Rahimi, J.Z. Anvari, M. Nadafan, E. Talebian, 25th IPM Physics Spring Conference, 1397, Tehran, I.R. Iran.
 9. Investigation of Hartree fock computational method in detecting vibrational frequencies of polytetramethylen ether glycol (PTMEG), R. Rezaee, J.Z. Anvari, M. Nadafan, E. Talebian, 25th IPM Physics Spring Conference, 1397, Tehran, I.R. Iran.
 10. Antibacterial properties of silver nanoparticle-decorated porous polyurethane surface for water purification, Ali Izadi-Darbandi; **Marzieh Nadafan**, 6th Biennial International Conference on UltraFine Grained and NanoStructured Materials, 2017, Kish Island, I.R. Iran.
 11. Raman Shift Investigation of Different Concentrations of MWCNTs in TiO₂/Ag/MWCNTs Nanocomposites, **Marzieh Nadafan**; Ammar Alattar; Rasoul Malekfar; Zahra Dehghani, 6th Biennial International Conference on UltraFine Grained and NanoStructured Materials, 2017, Kish Island, I.R. Iran.
 12. Nonlinear Optical Properties of 5CB Nematic Liquid Crystal Doped of Synthesized of ZnS Nanoparticles, Zahra Dehghani; **Marzieh Nadafan**; Mohammad Hosein Majles Ara, 6th Biennial International Conference on UltraFine Grained and NanoStructured Materials, 2017, Kish Island, I.R. Iran.
 13. Preparation of Silica Nanoparticles and Investigation of their Nonlinear Optical Properties by Z-scan technique, Z. Dehghani, M.H. Majles Ara , **M. Nadafan**, The 6th International Congress on Nanoscience & Nanotechnology (ICNN2016), Tehran, I.R. Iran.
 14. Investigation of Mass Attenuation Coefficient and Optical Properties of Prepared Alumina Nanoparticles, S. Nezamdoost, Z. Dehghani, A. Vejdani, **M. Nadafan**, The 6th International Congress on Nanoscience & Nanotechnology (ICNN2016), Tehran, I.R. Iran.
 15. Synthesis of MgO Nanoparticles and Measurement of their Mass

- Attenuation Coefficient, M. Amini, A. Vejdani, Z. Dehghani, **M. Nadafan**, The 6th International Congress on Nanoscience & Nanotechnology (ICNN2016), Tehran, I.R. Iran.
16. Optical studies of Ag nanoparticles decorated by Herceptin by KK method, N. Jafarzadeh, M.J. Rasaei, **M. Nadafan**, M. Allahabadi and R. Malekfar, 1st international Medical Sciences Congress, 2016, Iraq.
 17. Study on nonlinear optical refraction of Al₂O₃NPs doped in rigid foam by Z-scan technique, **M. Nadafan** et al., The third scientific conference of College of Science-University of Kerbala, 2015, Iraq.
 18. Optical Properties of Amorphous Cordierite Nanopowders by Combustion Method, **M. Nadafan** et al., *2nd International Conference on Modern Applications of Nanotechnology*, Belarus, 2015.
 19. Synthesis and Raman Spectroscopy of TiO₂-Ag/MWCNT Nanocomposites, Ammar Alattar, Rasoul Malekfar, **Marzieh Nadafan**, 2nd International Conference on Modern Applications of Nanotechnology, Belarus, 2015.
 20. The Application Feasibility of Silver Nanoparticle Coated Polyurethane Nanocomposite Foam As an Antibacterial Water Filter, **Marzieh Nadafan**, Rasoul Malekfar, Ali Izadi Darbandi, Asian Nano Forum Conference, 2015, Kish Island, I.R. Iran.
 21. Effects of MgO Nanoparticles on the Third Order Nonlinear Optical Properties of Poly (Ether) Urethane, **Marzieh Nadafan**, Rasoul Malekfar, Ali Izadi Darbandi, Zahra Dehghani, Asian Nano Forum Conference, 2015, Kish Island, I.R. Iran.
 22. Synthesis and analysis of optical properties of cordierite nanopowder prepared by the pechini method, **Marzieh Nadafan**, Rasoul Malekfar, Zahra Dehghani, Gholam Hossein Khorrami, 5th International Conference on Ultrafine Grained and Nanostructured Materials, 2015, Tehran, I.R. Iran.
 23. Nonlinear Refractive (NLR) Index of TiO₂ NPs in ESCN7 Nematic Liquid Crystal Under CW Laser Illumination, Z. Dehghani, M.H. Majles Ara, H. Hosseinzadeh Saraf, **M. Nadafan**, N. Dalir, 5th International Conference on Ultrafine Grained and Nanostructured Materials, 2015, Tehran, I.R. Iran.
 24. Assessment of nonlinear optical properties of polyurethane/MgO nanocomposites, **Marzieh Nadafan**, Rasoul Malekfar, Zahra Dehghani, Mohammad Allahabadi, 5th International Conference for Nanotechnology and Advanced Materials and Their Applications, 2015, Baghdad, Iraq.
 25. Nonlinear Optical Properties of Polyurethane Open Cell Containing SiO₂ Nanocomposites: Preparation and Characterization Considerations, **M. Nadafan** et al., 5th International Conference on Nanostructures

(ICNS5), 2014, Kish Island, I.R. Iran.

26. Nonlinear Optical Monitoring of Polyurethane via Addition of Cordierite Glass Ceramic by Z-Scan Technique, **M. Nadafan** et al., The 4th International Conference on Composites: Characterization, Fabrication and Application (CCFA-4), 2014, Tehran, I.R. Iran
27. Preparation and $\chi(3)$ measurement of ferro-nematic using a single beam method, Z. Dehghani, E. Saievar Iranizad, **M. Nadafan**, 5th International Conference on Nanostructures (ICNS5), 2014, Kish Island, I.R. Iran.
28. Physical Properties of SiO₂ Nanoparticles Doped in Polyurethane Foams, **M. Nadafan** et al., 1th international conference on engineering science applications (ICESA), 2014, Iraq.
29. Optical characterization of polyurethane close cell /SiO₂ nanocomposites, **M. Nadafan** et al., 9th Nanoscience and Nanotechnology Conference, 2013, Erzurum, Turkey.
30. High loading of SiO₂ nanoparticle to investigate optical and mechanical properties of polyurethane open cell, **M. Nadafan** et al., 4th International Conference on Ultrafine Grained and Nanostructured Materials UFGNSM 2013, Tehran, I.R. Iran.
31. Optical properties of synthesized Fe₃O₄ nanoparticles doped in nematic liquid crystal under electric field, Z. Dehghani, E. Saievar Iranizad, A. F. Alamouti and **M. Nadafan**, 4th International Conference on Ultrafine Grained and Nanostructured Materials UFGNSM 2013, Tehran, I.R. Iran.
32. Synthesis of ZnO nanoparticle by precipitation method, **M. Nadafan**, Laser Physics 2012 International Conference, 2012, Ashtarak, Armenia.
33. Synthesization of amorphous cordierite glass ceramics, **M. Nadafan**, Laser Physics 2012 International Conference, 2012, Ashtarak, Armenia.

