

Curriculum Vitae

A Brief Description

Nasser L. Hadipour

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Address: Physical Chemistry Department, Faculty of Sciences, Tarbiat Modares University, Tehran, Iran.
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Academic Rank

Full Professor of Physical Chemistry, Tarbiat Modares University, Tehran, Iran.

Education

Sabbatical

Visiting fellow at Institute of Chemistry, Academia Sinica of Taiwan (Sept. 2007- Sept. 2008)

Postdoctoral fellowship

University of New York, New York, USA, 1985-1986.

PhD

Physical Chemistry, University of Massachusetts Amherst, Massachusetts, USA, 1985.

MSC

Physics, University of Massachusetts Amherst, Massachusetts, USA, 1983.

Chemistry, Northeastern University, Massachusetts, USA, 1981.

BSC

Chemistry, Sharif University of Technology, Tehran, Iran. 1976.

Language Skills

1. Persian

Speaking: Native, Reading: Native, Writing: Native

2. English-close to native

Speaking: Native, Reading: Native, Writing: Native

Teaching Experience

A) Taught Undergraduate Courses

General Chemistry I & II

Physical Chemistry I & II

Elementary Quantum Chemistry

Basic Molecular Spectroscopy

B) Taught Graduate Courses

Advanced Physical Chemistry
Modern Quantum Chemistry
Statistical Thermodynamics I & II
Advanced Molecular Spectroscopy
NMR Spectroscopy

Research Interests

Density Functional Theory (DFT) calculations
Molecular dynamics simulations of biological systems and nanostructures
Investigation of hydrogen bonds in crystalline phase using ab initio calculations

List of Publications

[112] Density functional theory evaluation of pristine and BN-doped biphenylene nanosheets to detect HCN R Esfandiarpour, MR Hosseini, NL Hadipour, A Bahrami. *Journal of Molecular Modeling* 2019, 25 (6), 163.

[111] Influence of dendrimer surface chemistry and pH on the binding and release pattern of chalcone studied by molecular dynamics simulations. F Badalkhani-Khamseh, A Ebrahim-Habibi, NL Hadipour. *Journal of Molecular Recognition* 2019, 32 (1), e2757.

[110] The influence of the structural variations of the fused electron rich-electron deficient unit in the π -spacer of A-D- π -D-A organic dyes on the efficiency of dye-sensitized solar cells: A computational study. E Hosseinzadeh, NL Hadipour. *Organic Electronics* 2018, 62, 43-55.

[109] Bare surface of gold nanoparticle induces inflammation through unfolding of plasma fibrinogen. B Kharazian, SE Lohse, F Ghasemi, M Raoufi, AA Saei, F Hashemi, et al. *Scientific Reports* 2018, 8 (1), 12557.

[108] Atomistic computer simulations on multi-loaded PAMAM dendrimers: a comparison of amine- and hydroxyl-terminated dendrimers. F Badalkhani-Khamseh, A Ebrahim-Habibi, NL Hadipour. *Journal of computer-aided molecular design* 2017, 31 (12), 1097-1111.

[107] Molecular engineering of bithiazole-based organic dyes with different electron-rich linkers toward highly efficient dye-sensitized solar cells. E Hosseinzadeh, NL Hadipour, G Parsafar. *Journal of Photochemistry and Photobiology A: Chemistry* 2017, 349, 171-182.

[106] DFT, QTAIM, and NBO studies on the trimeric interactions in the protrusion domain of a piscine betanodavirus. EK Astani, NC Chen, YC Huang, A Bahrami, LY Chen, PR Lin, HH Guan, et al. *Journal of Molecular Graphics and Modelling* 2017, 78, 61-73.

- [105] A theoretical study on quadrupole coupling parameters of HRPII Protein modeled as 310-helix & α -helix structures. F Elmi, N Hadipour. Quarterly Iranian Chemical Communication 2017, 5, 372-380.
- [104] Complexation of nicotinic acid with first generation poly (amidoamine) dendrimers: A microscopic view from density functional theory. F Badalkhani-Khamseh, A Bahrami, A Ebrahim-Habibi, NL Hadipour. Chemical Physics Letters 2017, 684, 103-112.
- [103] The electronic and structural responses of B12N12 nanocage toward the adsorption of some nonpolar X2 molecules: X=(Li, Be, B, N, O, F, Cl, Br, I): A DFT approach. A Bahrami, MB Qarai, NL Hadipour. Computational and Theoretical Chemistry 2017, 1108, 63-69.
- [102] Molecular interactions investigated with DFT calculations of QTAIM and NBO analyses: An application to dimeric structures of rice α -amylase/subtilisin inhibitor. EK Astani, NL Hadipour, CJ Chen. Chemical Physics Letters 2017, 672, 80-88.
- [101] A computational investigation on the influence of different π spacer groups in the bithiazole-based organic dye sensitizers on the short-circuit photocurrent densities of dye-sensitized solar cells. E Hosseinzadeh, NL Hadipour, G Parsafar. Journal of Photochemistry and Photobiology A: Chemistry 2017, 333, 70-78.
- [100] A DFT study on the functionalization of C60 fullerene with 1, 2-benzoquinone. MK Hazrati, NL Hadipour. Computational and Theoretical Chemistry 2016, 1098, 63-69.
- [99] DFT explorations of quadrupole coupling constants for planar 5-fluorouracil pairs. M Mirzaei, O Gülseren, N Hadipour. Computational and Theoretical Chemistry 2016, 1090, 67-73.
- [98] A theoretical study on the characteristics of the intermolecular interactions in the active site of human androsterone sulphotransferase: DFT calculations of NQR and NMR parameters and QTAIM analysis. EK Astani, E Heshmati, CJ Chen, NL Hadipour. Journal of Molecular Graphics and Modelling 2016, 68, 14-22.
- [97] Relaxations of fluorouracil tautomers by decorations of fullerene-like SiCs: DFT studies. A Kouchaki, O Gülseren, N Hadipour, M Mirzaei. Physics Letters A 2016, 380 (25-26), 2160-2166.
- [96] A study of hydrogen bond effects on the oxygen, nitrogen, and hydrogen electric field gradient tensors in the active site of human dehydroepiandrosterone sulphotransferase: A density functional theory based treatment. E Astani, E Heshmati, CJ Chen, NL Hadipour, S Shekarsaraei. Chemical Physics Letters 2016, 653, 78-84.
- [95] Understanding the nanoparticle–protein corona complexes using computational and experimental methods. B Kharazian, NL Hadipour, MR Ejtehadi. The international journal of biochemistry & cell biology 2016, 75, 162-174.

[94] DFT studies of NH---Cl hydrogen bond of amino acid hydrochloride salts in ion channels. M Moridi, S Shekarsaraei, NL Hadipour. *Acta Chimica Slovenica* 2016, 63 (2), 241-250.

[93] Noncovalent intermolecular interactions between dehydroepiandrosterone and the active site of human dehydroepiandrosterone sulphotransferase: A density functional theory based treatment. E Astani, E Heshmati, CJ Chen, NL Hadipour, S Shekarsaraei. *Chemical Physics Letters* 2016, 649, 123-129.

[92] Adsorption behavior of 5-fluorouracil on pristine, B-, Si-, and Al-doped C60 fullerenes: A first-principles study. MK Hazrati, NL Hadipour. *Physics Letters A* 2016, 380 (7-8), 937-941.

[91] Interplay between Tetrel and Triel Bonds in RC6H4CN center dot center dot center dot MF3CN center dot center dot center dot BX3 Complexes: A Combined Symmetry-Adapted S Yourdkhani, T Korona, NL Hadipour. *Journal Of Computational Chemistry* 2015, 36 (32), 2412-2428.

[90] Interplay between tetrel and triel bonds in RC6H4CN... MF3CN... BX3 complexes: A combined symmetry-adapted perturbation theory, Møller-Plesset, and quantum theory of atoms-in S Yourdkhani, T Korona, NL Hadipour. *Journal of computational chemistry* 2015, 36 (32), 2412-2428.

[89] A Computational Study of N-H... O Hydrogen Bonding to Investigate Cooperative Effects. S Shekarsaraei, M Moridi, NL Hadipour. *World Academy of Science, Engineering and Technology, International Journal of Chemical and Molecular Engineering* 2015, 9 (3).

[88] Structure and Energetics of Complexes of B12N12 with Hydrogen Halides: SAPT(DFT) and MP2 Study. S Yourdkhani, T Korona, NL Hadipour. *The Journal of Physical Chemistry A* 2015, 119 (24), 6446-6467.

[87] Theoretical study on the Al-doped ZnO nanoclusters for CO chemical sensors. NL Hadipour, A Ahmadi Peyghan, H Soleymanabadi. *The Journal of Physical Chemistry C* 2015, 119 (11), 6398-6404.

[86] Theoretical investigation on the selective detection of SO2 molecule by AlN nanosheets. SF Rastegar, NL Hadipour, H Soleymanabadi. *Journal of molecular modeling* 2014, 20 (9), 2439.

[85] DFT study of NH3 adsorption on pristine, Ni-and Si-doped graphynes. AA Peyghan, SF Rastegar, NL Hadipour. *Physics Letters A* 2014, 378 (30-31), 2184-2190.

[84] Theoretical investigation of azo dyes adsorbed on cellulose fibers: 2. Spectroscopic study. F Zanjanchi, NL Hadipour, H Sabzyan, J Beheshtian. *Journal of the Iranian Chemical Society* 2014, 11 (1), 111-121.

[83] A DFT study on doping assisted changing of B80 electronic structure: Promising candidates for NH₃ sensor. A Bahrami, S Yourdkhani, MD Esrafil, NL Hadipour. *Sensors and Actuators B: Chemical* 2014, 191, 457-463.

[82] Density functional theory studies of carbon nanotube—graphene nanoribbon hybrids. A Omidvar, NL Hadipour. *Journal of the Iranian Chemical Society* 2013, 10 (6), 1239-1246.

[81] Theoretical investigation of azo dyes adsorbed on cellulose fibers: 1. Electronic and bonding structures. F Zanjanchi, NL Hadipour, H Sabzyan, J Beheshtian. *Journal of the Iranian Chemical Society* 2013, 10 (5), 985-999.

[80] DFT studies of acrolein molecule adsorption on pristine and Al-doped graphenes. SF Rastegar, NL Hadipour, MB Tabar, H Soleymanabadi. *Journal of molecular modeling* 2013, 19 (9), 3733-3740.

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[77] NO₂ detection by nanosized AlN sheet in the presence of NH₃: DFT studies. SF Rastegar, AA Peyghan, HR Ghenaatian, NL Hadipour. *Applied Surface Science* 2013, 274, 217-220.

[76] A computational investigation of the electronic properties of Octahedral Al_nN_n and Al_nP_n cages (n = 12, 16, 28, 36, and 48). M Saeedi, M Anafcheh, R Ghafouri, NL Hadipour. *Structural Chemistry* 2013, 24 (2), 681-689.

[75] Effects of Al doping and double-antisite defect on the adsorption of HCN on a BC₂N nanotube: density functional theory studies. A Ahmadi Peyghan, NL Hadipour, Z Bagheri. *The Journal of Physical Chemistry C* 2013, 117 (5), 2427-2432.

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Solar Energy Materials and Solar Cells 2012, 105, 125-131.

[72] ^1H and ^{29}Si NMR investigation of Si_nH_n polysilanes with $n \leq 60$: A DFT study. M Anafcheh, R Ghafouri, NL Hadipour. *Physica E: Low-dimensional Systems and Nanostructures* 2012, 44 (10), 2099-2104.

[71] Can aluminum nitride nanotubes detect the toxic NH_3 molecules? AA Peyghan, A Omidvar, NL Hadipour, Z Bagheri, M Kamfiroozi. *Physica E: Low-dimensional Systems and Nanostructures* 2012, 44 (7-8), 1357-1360.

[70] Theoretical study of aluminum nitride nanotubes for chemical sensing of formaldehyde. A Ahmadi, NL Hadipour, M Kamfiroozi, Z Bagheri. *Sensors and Actuators B: Chemical* 2012, 161 (1), 1025-1029.

[69] A DFT exploration of structural and electronic properties of a photoswitchable octapeptide cyclized with (4-aminomethyl) phenylazobenzoic acid. F Ektefa, M Anafcheh, NL Hadipour. *Computational and Theoretical Chemistry* 2011, 977 (1-3), 1-8.

[68] The effect of surface curvature of aluminum nitride nanotubes on the adsorption of NH_3 . A Ahmadi, M Kamfiroozi, J Beheshtian, NL Hadipour. *Structural Chemistry* 2011, 22 (6), 1261.

[67] A computational NICS and ^{13}C NMR characterization of BN-substituted 60C fullerenes. M Anafcheh, NL Hadipour. *Physica E: Low-dimensional Systems and Nanostructures* 2011, 44 (2), 400-404.

[66] Characteristics and nature of halogen bonds in linear clusters of NCX ($\text{X} = \text{Cl}$, and Br): an ab initio, NBO and QTAIM study. MD Esrafil, NL Hadipour. *Molecular Physics* 2011, 109 (20), 2451-2460.

[65] Computational study on the characteristics of the interaction in linear urea clusters. MD Esrafil, J Beheshtian, NL Hadipour. *International Journal of Quantum Chemistry* 2011, 111 (12), 3184-3195

[64] Interaction of NH_3 with aluminum nitride nanotube: electrostatic vs. covalent. A Ahmadi, J Beheshtian, NL Hadipour. *Physica E: Low-dimensional Systems and Nanostructures* 2011, 43 (9), 1717-1719.

[63] Investigating purine-functionalised carbon nanotubes and their properties: a computational approach. M Mirzaei, HR Kalhor, NL Hadipour. *IET nanobiotechnology* 2011, 5 (2), 32-35.

[62] Study of $\text{CO} \cdots \text{HN}$ Hydrogen bond interactions in amyloid beta ($\text{A}\beta$): A DFT study of the electric field gradient and CS tensors and NBO analysis. H Behzadi, NL Hadipour, M Mousavi-khoshdel. *Computational and Theoretical Chemistry* 2011, 965 (1), 137-145.

[61] Photo-oxidation of phenylazonaphthol dyes and their reactivity analysis in the gas phase and adsorbed on cellulose fibers states using DFT and TD-DFT. F Zanjanchi, NL Hadipour, H Sabzyan, J Beheshtian. *Dyes and Pigments* 2011, 89 (1), 16-22.

[60] Covalent hybridization of CNT by thymine and uracil: a computational study. M Mirzaei, HR Kalhor, NL Hadipour. *Journal of molecular modeling* 17 (4), 695-699.

[59] DFT study of CH₄ adsorption on the (5,0), (4,4), (5,5) and (6,6) single-walled carbon nanotubes. Calculated binding energies, NMR and NQR parameters. BB Shirvani, MB Shirvani, J Beheshtian, NL Hadipour. *Journal of the Iranian Chemical Society* 2011, 8 (1), S110-S118.

[58] Chemisorption of NH₃ at the open ends of boron nitride nanotubes: a DFT study. A Ahmadi, J Beheshtian, NL Hadipour. *Structural Chemistry* 2011, 22 (1), 183-188.

[57] Synthesis and structural characterization of triorganotin (IV) methoxyacetates: Correlation of ¹³C CPMAS NMR spectroscopy with single crystal structure. MM Amini, A Azadmehr, E Najafi, N Hadipour, CD Chen, CJ Chen. *Main Group Chemistry* 2011, 10 (1), 73-87.

[56] A computational study of water adsorption on boron nitride nanotube. J Beheshtian, H Behzadi, MD Esrafil, BB Shirvani, NL Hadipour. *Structural Chemistry* 2010, 21 (5), 903-908.

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[54] DFT study of NH₃ adsorption on the (5, 0), (8, 0), (5, 5) and (6, 6) single-walled carbon nanotubes. Calculated binding energies, NMR and NQR parameters. BB Shirvani, J Beheshtian, MD Esrafil, NL Hadipour. *Physica B: Condensed Matter* 2010, 405 (6), 1455-1460.

[53] Hydrogen bonds of peptide group in four acetamide derivatives: DFT study of oxygen and nitrogen NQR and NMR parameters. M Mirzaei, Z Samadi, NL Hadipour. *Journal of the Iranian Chemical Society* 2010, 7 (1), 164-170.

[52] Ab Initio Calculations of ¹⁴n NQR Parameters and ¹³C, ¹H, And ¹⁵N Chemical Shifts Including A Comparison with Experimental NMR Data for Cyclotrisazobenzene. N Zamand, AR Aliakbar, NL Hadipour. *Journal of Theoretical and Computational Chemistry* 2009, 8 (04), 647-656.

[51] Density functional theory study of atomic oxygen, O₂ and O₃ adsorptions on the H-capped (5, 0) single-

walled carbon nanotube. R Khorrampour, MD Esrafil, NL Hadipour. *Physica E: Low-dimensional Systems and Nanostructures* 2009, 41 (8), 1373-1378.

[50] A density functional study of ^{15}N chemical shielding tensors in quinolines. H Behzadi, MD Esrafil, J Beheshtian, NL Hadipour, D van der Spoel. *Chemical Physics Letters* 2009, 476 (4-6), 196-200.

[49] Characterization of cooperative effects in linear α -glycylglycine clusters. A Bahrami, MD Esrafil, NL Hadipour. *Biophysical chemistry* 2009, 143 (1-2), 26-33.

[48] Study of hydrogen bonds in crystalline 5-nitouracil. Density functional theory calculations of the O-17, N-14, and H-2 nuclear quadrupole resonance parameters. M Mirzaei, NL Hadipour. *Journal of the Iranian Chemical Society* 2009, 6 (1), 195-199.

[47] Structure and electronic properties of hydrogen chemisorption on boron nitride nanotubes. J Beheshtian, H Behzadi, Z Bagheri, NL Hadipour 2009.

[46] ^{15}N Chemical Shift Calculations and Natural Bonding Orbital Analyses of (Benzamide) N^{\ominus} 1-6 Clusters. MD Esrafil, J Beheshtian, NL Hadipour. *Journal of Theoretical and Computational Chemistry* 2009, 8 (supp01), 973-982.

[45] Electronic structure characterization of FeIII-protoporphyrin IX (FeIII-PPIX) and β -hematin using calculated nuclear quadrupole resonance (NQR) and Mössbauer parameters. MA Rafiee, NL Hadipour. *Canadian Journal of Chemistry* 2008, 86 (12), 1095-1098.

[44] A theoretical study of repeating sequence in HRP II: A combination of molecular dynamics simulations and ^{17}O quadrupole coupling tensors. H Behzadi, MD Esrafil, NL Hadipour, G Parsafar. *Biophysical chemistry* 2008, 137 (2-3), 76-80.

[43] Density functional calculations on ^{11}B and ^{15}N chemical shielding tensors of small boron nitride nanotubes and graphitic sheet. Z Bagheri, MR Abolhassani, NL Hadipour. *Physica E: Low-dimensional Systems and Nanostructures* 2008, 41 (1), 124-129.

[42] Theoretical ^{14}N nuclear quadrupole resonance parameters for sulfa drugs: Sulfamerazine and sulfathiazole. MD Esrafil, H Behzadi, J Beheshtian, NL Hadipour. *Journal of Molecular Graphics and Modelling* 2008, 27 (3), 326-331.

[41] Theoretical study of $\text{N-H}\cdots\text{O}$ hydrogen bonding properties and cooperativity effects in linear acetamide

clusters. MD Eshrafi, H Behzadi, NL Hadipour. *Theoretical Chemistry Accounts* 2008, 121 (3-4), 135-146

[40] Density functional study of zigzag BN nanotubes with equivalent ends. M Mirzaei, NL Hadipour, A Seif, M Giahi. *Physica E: Low-dimensional Systems and Nanostructures* 2008, 40 (10), 3060-3063

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[37] DFT calculations of oxygen, nitrogen and hydrogen NMR parameters to study the CH center dot center dot center dot O hydrogen bond in crystalline structure of 4-methylpyridine-N M Mirzaei, NL Hadipour. *Polish Journal of Chemistry* 2008, 82 (5), 1091-1096.

[36] Role of spin state on the geometry and nuclear quadrupole resonance parameters in hemin complex. H Behzadi, D van der Spoel, MD Eshrafi, GA Parsafar, NL Hadipour. *Biophysical chemistry* 2008, 134 (3), 200-206.

[35] A computational NQR study on the hydrogen \cdots bonded lattice of cytosine \cdots 5 \cdots acetic acid. M Mirzaei, NL Hadipour. *Journal of computational chemistry* 2008, 29 (5), 832-838.

[34] Study of hydrogen bonds in N-methylacetamide by DFT calculations of oxygen, nitrogen, and hydrogen solid-state NMR parameters. M Mirzaei, NL Hadipour. *Structural Chemistry* 2008, 19 (2), 225-232.

[33] Density functional theory study of boron nitride nanotubes: calculations of the N-14 and B-11 nuclear quadrupole resonance parameters. Z Bagheri, M Mirzaei, NL Hadipour, MR Abolhassani. *Journal of Computational and Theoretical Nanoscience* 2008, 5 (4), 614-618.

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SA Khorami. Journal of Molecular Graphics and Modelling 2018, 26 (6), 977-981.

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[22] The C-H... O Hydrogen Bonding Effects on the ^{17}O Electric Field Gradient and Chemical Shielding Tensors in Crystalline 1-Methyluracil: A DFT Study. T Partovi, M Mirzaei, NL Hadipour. Zeitschrift für Naturforschung A 2006, 61 (7-8), 383-388.

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- [13] A correlation study of quinoline derivatives and their pharmaceutical behavior by ab initio calculated NQR parameters. MA Rafiee, NL Hadipour, H Naderi-Manesh. *Journal of Computer-Aided molecular design* 2004, 18 (3), 215-220.
- [12] Investigation hydrogen-bonding capabilities of modified amide groups using calculated nuclear quadruple coupling constants. F Elmi, NL Hadipour, F Safinezhad. *Chemical physics letters* 2003, 375 (3-4), 273-278.
- [11] A new method for distinguishing between Al_2X_6 (X= Cl, Br) conformers based on ab initio calculated

nuclear quadrupole coupling constants. NL Hadipour, F Elmi. Chemical physics letters 2003, 371 (1-2), 56-61.

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