# Martin E Garcia

List of Publications by Year
in descending order



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|---|---|---|---|
| 88 papers | 2,363 citations | 236925 25 h-index | 223800 46 g-index |
| 89 all docs | 89 docs citations | 89 times ranked | 2258 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Modelling ultrafast laser ablation. Journal Physics D: Applied Physics, 2017, 50, 193001. | 2.8 | 331 |
| 2 | Theory for the Ultrafast Ablation of Graphite Films. Physical Review Letters, 2001, 87, 015003. | 7.8 | 170 |
| 3 | Nanoscale Depth-Resolved Coherent Femtosecond Motion in Laser-Excited Bismuth. Physical Review Letters, 2008, 100, 155501. | 7.8 | 136 |
| 4 | Microscopic analysis of the laser-induced femtosecond graphitization of diamond. Physical Review B, 1999, 60, R3701-R3704. | 3.2 | 93 |
| 5 | Properties of Liquid Silicon Observed by Time-Resolved X-Ray Absorption Spectroscopy. Physical Review Letters, 2003, 91, 157403. | 7.8 | 83 |
| 6 | Short laser pulse nanostructuring of metals: direct comparison of molecular dynamics modeling and experiment. Applied Physics A: Materials Science and Processing, 2013, 111, 675-687. | 2.3 | 71 |
| 7 | Anharmonic Noninertial Lattice Dynamics during Ultrafast Nonthermal Melting of InSb. Physical Review Letters, 2008, 101, 135701. | 7.8 | 66 |
| 8 | Experimental and Theoretical Investigation of Periodic Nanostructuring of Au with Ultrashort UV Laser Pulses near the Damage Threshold. Physical Review Applied, 2015, 4, . | 3.8 | 63 |
| 9 | Electric Field-Driven Disruption of a Native Î²-Sheet Protein Conformation and Generation of a Helix-Structure. Biophysical Journal, 2010, 99, 595-599. | 0.5 | 62 |
| 10 | Theory for the change of the bond character in divalent-metal clusters. Physical Review Letters, 1991, 67, 1142-1145. | 7.8 | 60 |
| 11 | Selective Cap Opening in Carbon Nanotubes Driven by Laser-Induced Coherent Phonons. Physical Review Letters, 2004, 92, 117401. | 7.8 | 54 |
| 12 | Fractional Diffusion in Silicon. Advanced Materials, 2013, 25, 5605-5608. | 21.0 | 50 |
| 13 | Squeezed Thermal Phonons Precurse Nonthermal Melting of Silicon as a Function of Fluence. Physical Review X, 2013, 3, . | 8.9 | 46 |
| 14 | Atomistic-continuum modeling of short laser pulse melting of Si targets. Physical Review B, 2014, 90, . | 3.2 | 44 |
| 15 | Molecular dynamics study of the short laser pulse ablation: quality and efficiency in production. Applied Physics A: Materials Science and Processing, 2014, 117, 2133-2141. | 2.3 | 40 |
| 16 | Molecular dynamics modeling of periodic nanostructuring of metals with a short UV laser pulse under spatial confinement by a water layer. Applied Physics A: Materials Science and Processing, 2017, 123, 1. | 2.3 | 36 |
| 17 | Theory for the Photoacoustic Response to X-Ray Absorption. Physical Review Letters, 1988, 61, 121-124. | 7.8 | 35 |
| 18 | Coherent and incoherent structural dynamics in laser-excited antimony. Physical Review B, 2017, 95, . | 3.2 | 35 |

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|---|---|---|---|
| 19 | Molecular Dynamics Simulation of the Effect of Crystal Orientation on Lithiumâ€ Ion Diffusion at the â€‰Vâ€‰2â€‰Oâ€‰5â€‰/â€‰Li2SiO3 Interface. Journal of the Electrochemical Society, 1999, 146, 840-849. | 2.9 | 34 |
| 20 | Generalized Markov State Modeling Method for Nonequilibrium Biomolecular Dynamics: Exemplified on Amyloid Î² Conformational Dynamics Driven by an Oscillating Electric Field. Journal of Chemical Theory and Computation, 2018, 14, 3579-3594. | 5.3 | 34 |
| 21 | Femtosecond-laser-induced bond breaking and structural modifications in silicon, TiO $$_2$$ 2 , and defective graphene: an ab initio molecular dynamics study. Applied Physics A: Materials Science and Processing, 2014, 114, 1-9. | 2.3 | 32 |
| 22 | Femtosecond Laser Nanosurgery of Defects in Carbon Nanotubes. Nano Letters, 2005, 5, 1361-1365. | 9.1 | 31 |
| 23 | Signatures of nonthermal melting. Structural Dynamics, 2015, 2, 054101. | 2.3 | 28 |
| 24 | Delocalization of a hole in van der Waals clusters: Ionization potential of rare-gas and smallHgnclusters. Physical Review B, 1993, 48, 8388-8397. | 3.2 | 27 |
| 25 | Monte Carlo Simulations of Proteins in Cages: Influence of Confinement on the Stability of Intermediate States. Biophysical Journal, 2009, 96, 1076-1082. | 0.5 | 26 |
| 26 | The SARS-CoV-2 spike protein is vulnerable to moderate electric fields. Nature Communications, 2021, 12, 5407. | 12.8 | 26 |
| 27 | Optimized Gaussian basis sets for Goedeckerâ€“Teterâ€“Hutter pseudopotentials. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 015009. | 2.0 | 25 |
| 28 | Molecular dynamics simulations ofÂlaser-induced damage ofÂnanostructures andÂsolids. Applied Physics A: Materials Science and Processing, 2009, 96, 33-42. | 2.3 | 24 |
| 29 | Theoretical study of the structural dependence of nuclear quadrupole frequencies in high-Tcsuperconductors. Physical Review B, 1989, 40, 8809-8813. | 3.2 | 23 |
| 30 | Nonthermal fragmentation of C60. Chemical Physics Letters, 2002, 352, 154-162. | 2.6 | 22 |
| 31 | Silicon before the bonds break. Applied Physics A: Materials Science and Processing, 2014, 117, 1-5. | 2.3 | 21 |
| 32 | Pulse Duration and Wavelength Effects of Laser Ablation on the Oxidation, Hydrolysis, and Aging of Aluminum Nanoparticles in Water. Nanomaterials, 2019, 9, 767. | 4.1 | 21 |
| 33 | Theoretical study of the laser-induced femtosecond dynamics of smallSinclusters. Physical Review B, 1999, 59, 13422-13430. | 3.2 | 20 |
| 34 | Quasimomentum-Space Image for Ultrafast Melting of Silicon. Physical Review Letters, 2016, 116, 153901. | 7.8 | 20 |
| 35 | Theory for the Optimal Control of Time-Averaged Quantities in Quantum Systems. Physical Review Letters, 2002, 89, 233003. | 7.8 | 19 |
| 36 | Ground-state wave functions of two-particle systems determined using quantum genetic algorithms. Physica A: Statistical Mechanics and Its Applications, 2001, 291, 439-448. | 2.6 | 18 |

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|---|---|---|---|
| 37 | Modeling of material properties after ultrashort laser and XUV excitation. Applied Physics A: Materials Science and Processing, 2013, 110, 519-528. | 2.3 | 18 |
| 38 | Ultrafast structural phenomena: theory of phonon frequency changes and simulations with code for highly excited valence electron systems. Journal of the Optical Society of America B: Optical Physics, 2014, 31, C22. | 2.1 | 18 |
| 39 | Theory for the ultrafast structural response of optically excited small clusters: Time dependence of the ionization potential. Physical Review A, 1996, 54, R4601-R4604. | 2.5 | 17 |
| 40 | Femtosecond Neutralization Dynamics in Cluster-Solid Surface Collisions. Physical Review Letters, 1997, 79, 2562-2565. | 7.8 | 17 |
| 41 | Self-Learning Method for Construction of Analytical Interatomic Potentials to Describe Laser-Excited Materials. Physical Review Letters, 2020, 124, 085501. | 7.8 | 16 |
| 42 | Transient optics of gold during laser irradiation: From first principles to experiment. Physical Review B, 2020, 101, . | 3.2 | 16 |
| 43 | Ultrafast nonthermal NV center formation in diamond. Carbon, 2021, 174, 524-530. | 10.3 | 16 |
| 44 | Theory for optical absorption in small clusters: Dependence on atomic surface structure and cluster size. Physical Review Letters, 1994, 72, 3969-3972. | 7.8 | 15 |
| 45 | Theoretical approach to the laser-induced melting of graphite under different pressure conditions. Applied Surface Science, 2003, 208-209, 61-70. | 6.1 | 15 |
| 46 | Key role of surface plasmon polaritons in generation of periodic surface structures following single-pulse laser irradiation of a gold step edge. Nanophotonics, 2022, 11, 359-367. | 6.0 | 14 |
| 47 | Photon-assisted StÃ¼ckelberg-like oscillations in a double quantum dot. Physical Review B, 2000, 62, 2630-2634. | 3.2 | 13 |
| 48 | Analytical solution of the optimal laser control problem in two-level systems. Journal of Physics B: Atomic, Molecular and Optical Physics, 2004, 37, 2569-2575. | 1.5 | 13 |
| 49 | Numerical Investigation of Ultrashort Laser-Ablative Synthesis of Metal Nanoparticles in Liquids Using the Atomistic-Continuum Model. Molecules, 2020, 25, 67. | 3.8 | 13 |
| 50 | Ab initio description of the first stages of laser-induced ultra-fast nonthermal melting of InSb. Applied Physics B: Lasers and Optics, 2008, 93, 743-747. | 2.2 | 12 |
| 51 | Quantum dynamical study of the amplitude collapse and revival of coherent A 1g phonons in bismuth: a classical phenomenon?. Applied Physics A: Materials Science and Processing, 2009, 96, 5-10. | 2.3 | 12 |
| 52 | Analysis of the ultrafast dynamics of the silver trimer upon photodetachment. Journal of Physics B: Atomic, Molecular and Optical Physics, 1996, 29, L545-L549. | 1.5 | 11 |
| 53 | Dynamic all-optical control in ultrashort double-pulse laser ablation. Applied Surface Science, 2021, 537, 147940. | 6.1 | 11 |
| 54 | Molecular-dynamics study of the mechanism of short-pulse laser ablation of single-crystal and polycrystalline metallic targets. Journal of Optical Technology (A Translation of Opticheskii) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 57 Td ( | 0.4 | 11 |

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|---|---|---|---|
| 55 | Atomic and Electronic Structure of Solid-Density Liquid Carbon. Physical Review Letters, 2020, 125, 155703. | 7.8 | 10 |
| 56 | Formation of Periodic Nanoridge Patterns by Ultrashort Single Pulse UV Laser Irradiation of Gold. Nanomaterials, 2020, 10, 1998. | 4.1 | 10 |
| 57 | Ultrafast structural relaxation dynamics of laser-excited graphene: Ab initio molecular dynamics simulations including electron-phonon interactions. Physical Review B, 2020, 101, . | 3.2 | 10 |
| 58 | High-Order Harmonic Generation in Au Nanoparticle-Contained Plasmas. Nanomaterials, 2020, 10, 234. | 4.1 | 10 |
| 59 | Probing the Energy Conversion Pathways between Light, Carriers, and Lattice in Real Time with Attosecond Core-Level Spectroscopy. Physical Review X, 2021, 11, . | 8.9 | 10 |
| 60 | On the interatomic interaction potential that describes bond weakening in classical molecular-dynamic modelling. Journal of Optical Technology (A Translation of Opticheskii Zhurnal), 2014, 81, 254. | 0.4 | 9 |
| 61 | High efficiencies for laser cleaning of glassware irradiated from the back: application to glassware historical objects. Applied Physics A: Materials Science and Processing, 2018, 124, 1. | 2.3 | 9 |
| 62 | Theory for the ultrafast melting and fragmentation dynamics of small clusters after femtosecond ionization. Journal of Chemical Physics, 1998, 109, 1101-1110. | 3.0 | 8 |
| 63 | Simulations of laser-induced dynamics in free-standing thin silicon films. Applied Physics A: Materials Science and Processing, 2017, 123, 1. | 2.3 | 8 |
| 64 | Rigorous conditions for the existence of bound states at the threshold in the two-particle case. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 9003-9016. | 2.1 | 7 |
| 65 | Influence of chaos on the ionization induced fragmentation dynamics of van der Waals clusters. Journal of Chemical Physics, 1997, 107, 9857-9863. | 3.0 | 6 |
| 66 | Theory for the explosion of clusters due to strong femtosecond electric fields: Size and charge effects. Europhysics Letters, 2002, 57, 39-45. | 2.0 | 6 |
| 67 | Laser manipulation of nanodiamonds. Computational Materials Science, 2006, 35, 179-182. | 3.0 | 6 |
| 68 | Fluence dependence of the ultrafast transition from the A7 toÂtheÂsimple cubic structure in arsenic. Applied Physics A: Materials Science and Processing, 2009, 96, 19-22. | 2.3 | 6 |
| 69 | Beyond spikes: Multiscale computational analysis ofin vivolong-term recordings in the cockroach circadian clock. Network Neuroscience, 2019, 3, 944-968. | 2.6 | 6 |
| 70 | Performance of state-of-the-art force fields for atomistic simulations of silicon at high electronic temperatures. European Physical Journal: Special Topics, 2019, 227, 1615-1629. | 2.6 | 6 |
| 71 | Nonequilibrium dynamics of the phonon gas in ultrafast-excited antimony. Physical Review Materials, 2017, 1, . | 2.4 | 6 |
| 72 | Unrestricted Hartree-Fock Calculation of the Ionization Potential of Small Hg <sub> n </sub> Clusters. Europhysics Letters, 1993, 21, 177-182. | 2.0 | 5 |

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|---|---|---|---|
| 73 | Mechanical properties of boron-nitride nanotubes after intense femtosecond-laser excitation. Nanotechnology, 2014, 25, 145701. | 2.6 | 5 |
| 74 | Molecular dynamics simulations of a femtosecond-laser-induced solid-to-solid transition in antimony. Applied Physics A: Materials Science and Processing, 2017, 123, 1. | 2.3 | 5 |
| 75 | Vesicle Motion during Sustained Exocytosis in Chromaffin Cells: Numerical Model Based on Amperometric Measurements. PLoS ONE, 2015, 10, e0144045. | 2.5 | 4 |
| 76 | Melting of Al Induced by Laser Excitation of 2p Holes. Materials Research Letters, 2015, 3, 149-155. | 8.7 | 4 |
| 77 | Controlling Three Laser-Excited Coherent Phonon Modes in Boron Nitride Nanotubes To Produce Ultrashort Shaped Terahertz Pulses: Implications for Memory Devices. ACS Applied Nano Materials, 2018, 1, 6932-6937. | 5.0 | 4 |
| 78 | Nonradiative electronic deexcitation time scales in metal clusters. Physical Review B, 1998, 57, 4895-4899. | 3.2 | 3 |
| 79 | Recovering hidden electronic states using energy-resolved imaging of metal clusters at surfaces. New Journal of Physics, 2007, 9, 340-340. | 2.9 | 3 |
| 80 | Exact and approximate symmetries for light propagation equations with higher order nonlinearity. Lobachevskii Journal of Mathematics, 2010, 31, 123-140. | 0.9 | 3 |
| 81 | Light propagation in media with a highly nonlinear response: An analytical study. Physica D: Nonlinear Phenomena, 2011, 240, 894-901. | 2.8 | 3 |
| 82 | Biomolecular structure manipulation using tailored electromagnetic radiation: a proof of concept on a simplified model of the active site of bacterial DNA topoisomerase. Physical Chemistry Chemical Physics, 2014, 16, 21768-21777. | 2.8 | 3 |
| 83 | Universal behavior of the band gap as a function of the atomic mean-square displacement in laser-excited silicon. Advanced Optical Technologies, 2020, 9, 145-153. | 1.7 | 3 |
| 84 | Transport properties of one-dimensional, disordered two-band systems. Journal of Physics C: Solid State Physics, 1986, 19, 6053-6061. | 1.5 | 2 |
| 85 | Designing lattice structures with maximal nearest-neighbor entanglement. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 315302. | 2.1 | 0 |
| 86 | Influence of the environment on protein bond energies. Chemical Physics Letters, 2014, 615, 75-82. | 2.6 | 0 |
| 87 | Simulations of Highly-Excited Silicon. Silicon, 2018, 10, 567-568. | 3.3 | 0 |
| 88 | Aluminum nanoparticle plasma formation for high-order harmonic generation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 245601. | 1.5 | 0 |