

# 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	Key role of surface plasmon polaritons in generation of periodic surface structures following single-pulse laser irradiation of a gold step edge. <i>Nanophotonics</i> , 2022, 11, 359-367.	6.0	14
2	Dynamic all-optical control in ultrashort double-pulse laser ablation. <i>Applied Surface Science</i> , 2021, 537, 147940.	6.1	11
3	Ultrafast nonthermal NV center formation in diamond. <i>Carbon</i> , 2021, 174, 524-530.	10.3	16
4	The SARS-CoV-2 spike protein is vulnerable to moderate electric fields. <i>Nature Communications</i> , 2021, 12, 5407.	12.8	26
5	Probing the Energy Conversion Pathways between Light, Carriers, and Lattice in Real Time with Attosecond Core-Level Spectroscopy. <i>Physical Review X</i> , 2021, 11, .	8.9	10
6	Numerical Investigation of Ultrashort Laser-Ablative Synthesis of Metal Nanoparticles in Liquids Using the Atomistic-Continuum Model. <i>Molecules</i> , 2020, 25, 67.	3.8	13
7	Atomic and Electronic Structure of Solid-Density Liquid Carbon. <i>Physical Review Letters</i> , 2020, 125, 155703.	7.8	10
8	Formation of Periodic Nanoridge Patterns by Ultrashort Single Pulse UV Laser Irradiation of Gold. <i>Nanomaterials</i> , 2020, 10, 1998.	4.1	10
9	Ultrafast structural relaxation dynamics of laser-excited graphene: Ab initio molecular dynamics simulations including electron-phonon interactions. <i>Physical Review B</i> , 2020, 101, .	3.2	10
10	Self-Learning Method for Construction of Analytical Interatomic Potentials to Describe Laser-Excited Materials. <i>Physical Review Letters</i> , 2020, 124, 085501.	7.8	16
11	Transient optics of gold during laser irradiation: From first principles to experiment. <i>Physical Review B</i> , 2020, 101, .	3.2	16
12	High-Order Harmonic Generation in Au Nanoparticle-Contained Plasmas. <i>Nanomaterials</i> , 2020, 10, 234.	4.1	10
13	Universal behavior of the band gap as a function of the atomic mean-square displacement in laser-excited silicon. <i>Advanced Optical Technologies</i> , 2020, 9, 145-153.	1.7	3
14	Aluminum nanoparticle plasma formation for high-order harmonic generation. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2019, 52, 245601.	1.5	0
15	Beyond spikes: Multiscale computational analysis of <i>in vivo</i> long-term recordings in the cockroach circadian clock. <i>Network Neuroscience</i> , 2019, 3, 944-968.	2.6	6
16	Pulse Duration and Wavelength Effects of Laser Ablation on the Oxidation, Hydrolysis, and Aging of Aluminum Nanoparticles in Water. <i>Nanomaterials</i> , 2019, 9, 767.	4.1	21
17	Performance of state-of-the-art force fields for atomistic simulations of silicon at high electronic temperatures. <i>European Physical Journal: Special Topics</i> , 2019, 227, 1615-1629.	2.6	6
18	High efficiencies for laser cleaning of glassware irradiated from the back: application to glassware historical objects. <i>Applied Physics A: Materials Science and Processing</i> , 2018, 124, 1.	2.3	9

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19	Simulations of Highly-Excited Silicon. <i>Silicon</i> , 2018, 10, 567-568.	3.3	0
20	Controlling Three Laser-Excited Coherent Phonon Modes in Boron Nitride Nanotubes To Produce Ultrashort Shaped Terahertz Pulses: Implications for Memory Devices. <i>ACS Applied Nano Materials</i> , 2018, 1, 6932-6937.	5.0	4
21	Generalized Markov State Modeling Method for Nonequilibrium Biomolecular Dynamics: Exemplified on Amyloid $\beta$ Conformational Dynamics Driven by an Oscillating Electric Field. <i>Journal of Chemical Theory and Computation</i> , 2018, 14, 3579-3594.	5.3	34
22	Coherent and incoherent structural dynamics in laser-excited antimony. <i>Physical Review B</i> , 2017, 95, .	3.2	35
23	Modelling ultrafast laser ablation. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 193001.	2.8	331
24	Simulations of laser-induced dynamics in free-standing thin silicon films. <i>Applied Physics A: Materials Science and Processing</i> , 2017, 123, 1.	2.3	8
25	Molecular dynamics simulations of a femtosecond-laser-induced solid-to-solid transition in antimony. <i>Applied Physics A: Materials Science and Processing</i> , 2017, 123, 1.	2.3	5
26	Molecular dynamics modeling of periodic nanostructuring of metals with a short UV laser pulse under spatial confinement by a water layer. <i>Applied Physics A: Materials Science and Processing</i> , 2017, 123, 1.	2.3	36
27	Nonequilibrium dynamics of the phonon gas in ultrafast-excited antimony. <i>Physical Review Materials</i> , 2017, 1, .	2.4	6
28	Quasimomentum-Space Image for Ultrafast Melting of Silicon. <i>Physical Review Letters</i> , 2016, 116, 153901.	7.8	20
29	Experimental and Theoretical Investigation of Periodic Nanostructuring of Au with Ultrashort UV Laser Pulses near the Damage Threshold. <i>Physical Review Applied</i> , 2015, 4, .	3.8	63
30	Signatures of nonthermal melting. <i>Structural Dynamics</i> , 2015, 2, 054101.	2.3	28
31	Vesicle Motion during Sustained Exocytosis in Chromaffin Cells: Numerical Model Based on Amperometric Measurements. <i>PLoS ONE</i> , 2015, 10, e0144045.	2.5	4
32	Melting of Al Induced by Laser Excitation of 2p Holes. <i>Materials Research Letters</i> , 2015, 3, 149-155.	8.7	4
33	On the interatomic interaction potential that describes bond weakening in classical molecular-dynamic modelling. <i>Journal of Optical Technology (A Translation of Opticheskii Zhurnal)</i> , 2014, 81, 254.	0.4	9
34	Molecular-dynamics study of the mechanism of short-pulse laser ablation of single-crystal and polycrystalline metallic targets. <i>Journal of Optical Technology (A Translation of Opticheskii Zhurnal)</i> , 2014, 81, 137-140.	0.0	160
35	Ultrafast structural phenomena: theory of phonon frequency changes and simulations with code for highly excited valence electron systems. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2014, 31, C22.	2.1	18
36	Influence of the environment on protein bond energies. <i>Chemical Physics Letters</i> , 2014, 615, 75-82.	2.6	0

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37	Atomistic-continuum modeling of short laser pulse melting of Si targets. <i>Physical Review B</i> , 2014, 90, .	3.2	44
38	Femtosecond-laser-induced bond breaking and structural modifications in silicon, TiO <sub>2</sub> , and defective graphene: an ab initio molecular dynamics study. <i>Applied Physics A: Materials Science and Processing</i> , 2014, 114, 1-9.	2.3	32
39	Silicon before the bonds break. <i>Applied Physics A: Materials Science and Processing</i> , 2014, 117, 1-5.	2.3	21
40	Biomolecular structure manipulation using tailored electromagnetic radiation: a proof of concept on a simplified model of the active site of bacterial DNA topoisomerase. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 21768-21777.	2.8	3
41	Molecular dynamics study of the short laser pulse ablation: quality and efficiency in production. <i>Applied Physics A: Materials Science and Processing</i> , 2014, 117, 2133-2141.	2.3	40
42	Mechanical properties of boron-nitride nanotubes after intense femtosecond-laser excitation. <i>Nanotechnology</i> , 2014, 25, 145701.	2.6	5
43	Fractional Diffusion in Silicon. <i>Advanced Materials</i> , 2013, 25, 5605-5608.	21.0	50
44	Short laser pulse nanostructuring of metals: direct comparison of molecular dynamics modeling and experiment. <i>Applied Physics A: Materials Science and Processing</i> , 2013, 111, 675-687.	2.3	71
45	Squeezed Thermal Phonons Precure Nonthermal Melting of Silicon as a Function of Fluence. <i>Physical Review X</i> , 2013, 3, .	8.9	46
46	Modeling of material properties after ultrashort laser and XUV excitation. <i>Applied Physics A: Materials Science and Processing</i> , 2013, 110, 519-528.	2.3	18
47	Light propagation in media with a highly nonlinear response: An analytical study. <i>Physica D: Nonlinear Phenomena</i> , 2011, 240, 894-901.	2.8	3
48	Exact and approximate symmetries for light propagation equations with higher order nonlinearity. <i>Lobachevskii Journal of Mathematics</i> , 2010, 31, 123-140.	0.9	3
49	Electric Field-Driven Disruption of a Native $\beta$ -Sheet Protein Conformation and Generation of a Helix-Structure. <i>Biophysical Journal</i> , 2010, 99, 595-599.	0.5	62
50	Designing lattice structures with maximal nearest-neighbor entanglement. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 315302.	2.1	0
51	Fluence dependence of the ultrafast transition from the A7 to the simple cubic structure in arsenic. <i>Applied Physics A: Materials Science and Processing</i> , 2009, 96, 19-22.	2.3	6
52	Quantum dynamical study of the amplitude collapse and revival of coherent A <sub>1g</sub> phonons in bismuth: a classical phenomenon?. <i>Applied Physics A: Materials Science and Processing</i> , 2009, 96, 5-10.	2.3	12
53	Molecular dynamics simulations of laser-induced damage of nanostructures and solids. <i>Applied Physics A: Materials Science and Processing</i> , 2009, 96, 33-42.	2.3	24
54	Monte Carlo Simulations of Proteins in Cages: Influence of Confinement on the Stability of Intermediate States. <i>Biophysical Journal</i> , 2009, 96, 1076-1082.	0.5	26

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55	Optimized Gaussian basis sets for Goedecker's Tetrahedral pseudopotentials. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 015009.	2.0	25
56	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
57	Nanoscale Depth-Resolved Coherent Femtosecond Motion in Laser-Excited Bismuth. Physical Review Letters, 2008, 100, 155501.	7.8	136
58	Anharmonic Noninertial Lattice Dynamics during Ultrafast Nonthermal Melting of InSb. Physical Review Letters, 2008, 101, 135701.	7.8	66
59	Recovering hidden electronic states using energy-resolved imaging of metal clusters at surfaces. New Journal of Physics, 2007, 9, 340-340.	2.9	3
60	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
61	Laser manipulation of nanodiamonds. Computational Materials Science, 2006, 35, 179-182.	3.0	6
62	Femtosecond Laser Nanosurgery of Defects in Carbon Nanotubes. Nano Letters, 2005, 5, 1361-1365.	9.1	31
63	Selective Cap Opening in Carbon Nanotubes Driven by Laser-Induced Coherent Phonons. Physical Review Letters, 2004, 92, 117401.	7.8	54
64	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
65	Theoretical approach to the laser-induced melting of graphite under different pressure conditions. Applied Surface Science, 2003, 208-209, 61-70.	6.1	15
66	Properties of Liquid Silicon Observed by Time-Resolved X-Ray Absorption Spectroscopy. Physical Review Letters, 2003, 91, 157403.	7.8	83
67	Theory for the Optimal Control of Time-Averaged Quantities in Quantum Systems. Physical Review Letters, 2002, 89, 233003.	7.8	19
68	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
69	Nonthermal fragmentation of C60. Chemical Physics Letters, 2002, 352, 154-162.	2.6	22
70	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
71	Theory for the Ultrafast Ablation of Graphite Films. Physical Review Letters, 2001, 87, 015003.	7.8	170
72	Photon-assisted Stueckelberg-like oscillations in a double quantum dot. Physical Review B, 2000, 62, 2630-2634.	3.2	13

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73	Theoretical study of the laser-induced femtosecond dynamics of small Si clusters. Physical Review B, 1999, 59, 13422-13430.	3.2	20
74	Molecular Dynamics Simulation of the Effect of Crystal Orientation on Lithium Ion Diffusion at the $\text{Li}_2\text{SiO}_3$ Interface. Journal of the Electrochemical Society, 1999, 146, 840-849.	2.9	34
75	Microscopic analysis of the laser-induced femtosecond graphitization of diamond. Physical Review B, 1999, 60, R3701-R3704.	3.2	93
76	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
77	Nonradiative electronic deexcitation time scales in metal clusters. Physical Review B, 1998, 57, 4895-4899.	3.2	3
78	Femtosecond Neutralization Dynamics in Cluster-Solid Surface Collisions. Physical Review Letters, 1997, 79, 2562-2565.	7.8	17
79	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
80	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
81	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
82	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
83	Unrestricted Hartree-Fock Calculation of the Ionization Potential of Small Hg $n$ Clusters. Europhysics Letters, 1993, 21, 177-182.	2.0	5
84	Delocalization of a hole in van der Waals clusters: Ionization potential of rare-gas and small Hg clusters. Physical Review B, 1993, 48, 8388-8397.	3.2	27
85	Theory for the change of the bond character in divalent-metal clusters. Physical Review Letters, 1991, 67, 1142-1145.	7.8	60
86	Theoretical study of the structural dependence of nuclear quadrupole frequencies in high-Tc superconductors. Physical Review B, 1989, 40, 8809-8813.	3.2	23
87	Theory for the Photoacoustic Response to X-Ray Absorption. Physical Review Letters, 1988, 61, 121-124.	7.8	35
88	Transport properties of one-dimensional, disordered two-band systems. Journal of Physics C: Solid State Physics, 1986, 19, 6053-6061.	1.5	2