Marvin L Cohen

List of Publications by Citations

160 papers	20,542 citations	65 h-index	143 g-index
175 ext. papers	22,031 ext. citations	8.3 avg, IF	6.7 L-index

#	Paper	IF	Citations
160	Band Structures and Pseudopotential Form Factors for Fourteen Semiconductors of the Diamond and Zinc-blende Structures. *Physical Review*, **1966**, 141, 789-796		1477
159	Theory of graphitic boron nitride nanotubes. *Physical Review B*, **1994**, 49, 5081-5084	3.3	1383
158	First-principles study of metal adatom adsorption on graphene. *Physical Review B*, **2008**, 77,	3.3	1104
157	Graphene at the edge: stability and dynamics. *Science*, **2009**, 323, 1705-8	33.3	1042
156	Calculation of bulk moduli of diamond and zinc-blende solids. *Physical Review B*, **1985**, 32, 7988-7991	3.3	922
155	The origin of the anomalous superconducting properties of MgB(2). *Nature*, **2002**, 418, 758-60	50.4	772
154	Pure carbon nanoscale devices: Nanotube heterojunctions. *Physical Review Letters*, **1996**, 76, 971-974	7.4	767
153	Superconductivity in Semiconducting SrTiO3. *Physical Review Letters*, **1964**, 12, 474-475	7.4	669
152	Electronic mechanism of hardness enhancement in transition-metal carbonitrides. *Nature*, **1999**, 399, 132-134	50.4	556
151	Anisotropic behaviours of massless Dirac fermions in graphene under periodic potentials. *Nature Physics*, **2008**, 4, 213-217	16.2	531
150	BerkeleyGW: A massively parallel computer package for the calculation of the quasiparticle and optical properties of materials and nanostructures. *Computer Physics Communications*, **2012**, 183, 1269-1289	4.3	530
149	Microscopic Theory of the Phase Transformation and Lattice Dynamics of Si. *Physical Review Letters* , **1980**, 45, 1004-1007	7.4	465
148	Electron-phonon interaction using Wannier functions. *Physical Review B*, **2007**, 76,	3.3	425
147	Fully collapsed carbon nanotubes. *Nature*, **1995**, 377, 135-138	50.4	419
146	The Fitting of Pseudopotentials to Experimental Data and Their Subsequent Application. *Solid State Physics*, **1970**, 37-248	2	394
145	Ideal Shear Strengths of fcc Aluminum and Copper. *Physical Review Letters*, **1999**, 82, 2713-2716	7.4	392
144	Electronic properties of oxidized carbon nanotubes. *Physical Review Letters*, **2000**, 85, 1710-3	7.4	368

143	Pseudopotentials and Total Energy Calculations. *Physica Scripta*, **1982**, T1, 5-10	2.6	332
142	Broken symmetry and pseudogaps in ropes of carbon nanotubes. *Nature*, **1998**, 391, 466-468	50.4	312
141	First-principles calculation of the superconducting transition in MgB2 within the anisotropic Eliashberg formalism. *Physical Review B*, **2002**, 66,	3.3	295
140	Experimental and theoretical equation of state of cubic boron nitride. *Nature*, **1989**, 337, 349-352	50.4	278
139	Vacancy hardening and softening in transition metal carbides and nitrides. *Physical Review Letters*, **2001**, 86, 3348-51	7.4	251
138	In Situ Band Gap Engineering of Carbon Nanotubes. *Physical Review Letters*, **1997**, 79, 2093-2096	7.4	250
137	Nanostructured Carbon Allotropes with Weyl-like Loops and Points. *Nano Letters*, **2015**, 15, 6974-8	11.5	248
136	Multiply folded graphene. *Physical Review B*, **2011**, 83,	3.3	247
135	Superconductivity in Many-Valley Semiconductors and in Semimetals. *Physical Review*, **1964**, 134, A511-A521		219
134	Wave-Vector-Dependent Dielectric Function for Si, Ge, GaAs, and ZnSe. *Physical Review B*, **1970**, 2, 1821-1826	3.3	212
133	Electronic Structure and Optical Properties of Semiconductors. *Springer Series in Solid-state Sciences*, **1989**,	0.4	192
132	Superconductivity in high-pressure metallic phases of Si. *Physical Review Letters*, **1985**, 54, 2375-2378	7.4	186
131	Ideal strength of bcc molybdenum and niobium. *Physical Review B*, **2002**, 66,	3.3	172
130	High accuracy many-body calculational approaches for excitations in molecules. *Physical Review Letters*, **2001**, 86, 472-5	7.4	160
129	Iodine intercalation of a high-temperature superconducting oxide. *Nature*, **1990**, 348, 145-147	50.4	160
128	Structural forms of cubic BC2N. *Physical Review B*, **2001**, 64,	3.3	146
127	Self-consistent pseudopotential method for localized configurations: Molecules. *Physical Review B*, **1975**, 12, 5575-5579	3.3	145
126	Observation of the giant stark effect in boron-nitride nanotubes. *Physical Review Letters*, **2005**, 94, 056804	7.4	143

125	Calcium-decorated carbon nanotubes for high-capacity hydrogen storage: First-principles calculations. *Physical Review B*, **2009**, 80,	3.3	135
124	Small phonon contribution to the photoemission kink in the copper oxide superconductors. *Nature*, **2008**, 452, 975-8	50.4	135
123	Electron-Phonon Interactions in Solid C36. *Physical Review Letters*, **1998**, 81, 697-700	7.4	123
122	Electron-phonon interaction via electronic and lattice Wannier functions: superconductivity in boron-doped diamond reexamined. *Physical Review Letters*, **2007**, 98, 047005	7.4	122
121	Coulomb-hole summations and energies for GW calculations with limited number of empty orbitals: A modified static remainder approach. *Physical Review B*, **2013**, 87,	3.3	119
120	Connecting atomistic and experimental estimates of ideal strength. *Physical Review B*, **2002**, 65,	3.3	119
119	Structural and electronic properties of n-doped and p-doped SrTiO3. *Physical Review B*, **2004**, 70,	3.3	118
118	Dynamic sliding friction between concentric carbon nanotubes. *Physical Review Letters*, **2004**, 93, 065503	7.4	111
117	Mechanical instability and ideal shear strength of transition metal carbides and nitrides. *Physical Review Letters*, **2001**, 87, 075503	7.4	111
116	Self-Consistent Pseudopotential Calculation for a Metal-Semiconductor Interface. *Physical Review Letters*, **1975**, 35, 866-869	7.4	107
115	Static conductivity and superconductivity of carbon nanotubes: Relations between tubes and sheets. *Physical Review B*, **1995**, 52, 14935-14940	3.3	106
114	The physics of boron nitride nanotubes. *Physics Today*, **2010**, 63, 34-38	0.9	105
113	Temperature dependence of the band gap of semiconducting carbon nanotubes. *Physical Review Letters*, **2005**, 94, 036801	7.4	105
112	Computational design of direct-bandgap semiconductors that lattice-match silicon. *Nature*, **2001**, 409, 69-71	50.4	99
111	GW method with the self-consistent Sternheimer equation. *Physical Review B*, **2010**, 81,	3.3	98
110	Theory of sodium ordering in NaxCoO2. *Physical Review B*, **2005**, 71,	3.3	98
109	Amplification of fluctuations in a spinor Bose-Einstein condensate. *Physical Review A*, **2009**, 79,	2.6	97
108	Ab initio survey of the electronic structure of tetrahedrally bonded phases of silicon. *Physical Review B*, **2008**, 78,	3.3	96

107	Ab initio study of silicon in the R8 phase. *Physical Review B*, **1997**, 56, 6662-6668	3.3	91
106	Complete absence of isotope effect in YBa2Cu3O7: Consequences for phonon-mediated superconductivity. *Physical Review B*, **1987**, 36, 3990-3993	3.3	87
105	Electronic structure of the □bonded chain model and the nonbuckled antiferromagnetic insulator model for the Si(111) surface. *Journal of Vacuum Science and Technology*, **1982**, 21, 333-336		84
104	Hydrostatic pressure effects on the structural and electronic properties of carbon nanotubes. *Physica Status Solidi (B): Basic Research*, **2004**, 241, 3352-3359	1.3	82
103	Constraints on Tc for superconductivity in heavily boron-doped diamond. *Physical Review B*, **2008**, 77,	3.3	79
102	Structural and electronic properties of carbon in hybrid diamond-graphite structures. *Physical Review B*, **2005**, 72,	3.3	75
101	Doping effects on the electronic and structural properties of CoO2: An LSDA+U study. *Physical Review B*, **2004**, 70,	3.3	73
100	Identifying defects in nanoscale materials. *Physical Review Letters*, **2004**, 93, 196803	7.4	71
99	Theory of semiconductor surface states and metal□semiconductor interfaces. *Journal of Vacuum Science and Technology*, **1976**, 13, 790-797		71
98	Nanotubes, Nanoscience, and Nanotechnology. *Materials Science and Engineering C*, **2001**, 15, 1-11	8.3	69
97	Three-dimensional fluctuation conductivity in superconducting single crystal K3C60 and Rb3C60. *Nature*, **1993**, 361, 54-56	50.4	67
96	First-principles prediction of high-temperature superconductivity in metallic hydrogen. *Nature*, **1989**, 340, 369-371	50.4	66
95	Phonon Softening and Superconductivity in Tellurium under Pressure. *Physical Review Letters*, **1996** , 77, 1151-1154	7.4	59
94	Hypothetical hard structures of carbon with cubic symmetry. *Physical Review B*, **2006**, 74,	3.3	55
93	Ab initio study of the optical properties of Si-XII. *Physical Review B*, **2008**, 78,	3.3	51
92	First-principles scattering-state approach for nonlinear electrical transport in nanostructures. *Physical Review B*, **2007**, 76,	3.3	50
91	Van Hove singularity and apparent anisotropy in the electron-phonon interaction in graphene. *Physical Review B*, **2008**, 77,	3.3	46
90	The Theory of Real Materials. *Annual Review of Materials Research*, **2000**, 30, 1-26		44

89	Alternative stacking sequences in hexagonal boron nitride. *2D Materials*, **2019**, 6, 021006	5.9	43
88	Molecular Self-Assembly in a Poorly Screened Environment: F4TCNQ on Graphene/BN. *ACS Nano*, **2015**, 9, 12168-73	16.7	42
87	Two bounds on the maximum phonon-mediated superconducting transition temperature. *Physical Review B*, **2006**, 74,	3.3	42
86	Rubidium isotope effect in superconducting Rb3C60. *Physical Review Letters*, **1994**, 72, 3706-3709	7.4	41
85	Electron-phonon coupling in C60 using hybrid functionals. *Physical Review B*, **2010**, 81,	3.3	39
84	Carbon kagome lattice and orbital-frustration-induced metal-insulator transition for optoelectronics. *Physical Review Letters*, **2014**, 113, 085501	7.4	38
83	Controlled formation of metastable germanium polymorphs. *Physical Review B*, **2014**, 89,	3.3	36
82	A class of topological nodal rings and its realization in carbon networks. *Physical Review B*, **2018**, 97,	3.3	32
81	Torsional instability in the single-chain limit of a transition metal trichalcogenide. *Science*, **2018**, 361, 263-266	33.3	30
80	Theory of domain formation in inhomogeneous ferromagnetic dipolar condensates within the truncated Wigner approximation. *Physical Review A*, **2009**, 80,	2.6	30
79	GW quasiparticle corrections to the LDA+UGA+U electronic structure of bcc hydrogen. *Physical Review B*, **2008**, 77,	3.3	29
78	Anisotropic Eliashberg theory and the two-band model for the superconducting properties of MgB2. *Physical Review B*, **2006**, 73,	3.3	27
77	Origin of superconductivity in boron-doped silicon carbide from first principles. *Physical Review B*, **2009**, 79,	3.3	26
76	Theory of bulk moduli of hard solids. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **1988**, 105-106, 11-18	5.3	25
75	Ab initio calculations of pressure-induced structural phase transitions of GeTe. *Physical Review B*, **2010**, 82,	3.3	24
74	First-principles study of superconductivity and Fermi-surface nesting in ultrahard transition metal carbides. *Physical Review B*, **2008**, 77,	3.3	24
73	Mechanism for bias-assisted indium mass transport on carbon nanotube surfaces. *Physical Review B*, **2005**, 72,	3.3	22
72	Selective functionalization of halogens on zigzag graphene nanoribbons: A route to the separation of zigzag graphene nanoribbons. *Applied Physics Letters*, **2010**, 97, 233101	3.4	21

71	Observation of pressure-induced direct-to-indirect band gap transition in InP nanocrystals. *Journal of Chemical Physics*, **2000**, 113, 2016-2020	3.9	19
70	Lattice matching and electronic structure of finite-layer graphene/h-BN thin films. *Physical Review B*, **2014**, 89,	3.3	18
69	Reply to Comment on First-principles calculation of the superconducting transition in MgB2 within the anisotropic Eliashberg formalism *Physical Review B*, **2004**, 69,	3.3	17
68	Anomalous behavior in high-pressure carbonaceous sulfur hydride. *Physica C: Superconductivity and Its Applications*, **2021**, 583, 1353851	1.3	17
67	Search for Superconductivity in Lithium. *Journal of Low Temperature Physics*, **1999**, 114, 445-454	1.3	16
66	Wave function engineering: Other phases of Si for photovoltaic applications. *Journal of Applied Physics*, **2011**, 109, 102402	2.5	15
65	Enhanced electron-phonon coupling near the lattice instability of superconducting NbC1 Nx from density-functional calculations. *Physical Review B*, **2011**, 84,	3.3	15
64	Prediction of superconducting properties of CaB2 using anisotropic Eliashberg theory. *Physical Review B*, **2009**, 80,	3.3	15
63	Role of fluorine in the iron pnictides: phonon softening and effective hole doping. *Physical Review Letters*, **2009**, 102, 147003	7.4	15
62	Electron-phonon coupling and superconductivity in Li-intercalated layered borocarbide compounds. *Physical Review B*, **2014**, 89,	3.3	14
61	Hexagonal germanium formed via a pressure-induced phase transformation of amorphous germanium under controlled nanoindentation. *Physica Status Solidi - Rapid Research Letters*, **2013**, 7, 355-359	2.5	14
60	Improved quasiparticle wave functions and mean field for G0W0 calculations: Initialization with the COHSEX operator. *Physical Review B*, **2014**, 90,	3.3	14
59	Ab Initio calculations of phonon splitting in antiferromagnetic ZnCr2O4. *Physical Review B*, **2007**, 75,	3.3	14
58	Simulating the effect of boron doping in superconducting carbon. *Physical Review B*, **2018**, 97,	3.3	13
57	Metal-insulator transition in quasi-one-dimensional HfTe3 in the few-chain limit. *Physical Review B*, **2019**, 100,	3.3	13
56	Anisotropic Eliashberg theory for superconductivity in compressed and doped MgB2. *Physical Review B*, **2009**, 79,	3.3	13
55	Electrostatically Driven Nanoballoon Actuator. *Nano Letters*, **2016**, 16, 6787-6791	11.5	13
54	Inhibiting Klein Tunneling in a Graphene p-n Junction without an External Magnetic Field. *Physical Review Letters*, **2016**, 117, 016804	7.4	12

53	First-principles theory of electron-spin fluctuation coupling and superconducting instabilities in iron selenide. *Physical Review B*, **2015**, 91,	3.3	12
52	Energetics and structural stability of Cs3C60. *Solid State Communications*, **2004**, 130, 335-339	1.6	12
51	High-Performance Atomically-Thin Room-Temperature NO Sensor. *Nano Letters*, **2020**, 20, 6120-6127	11.5	12
50	Using molecular fragments to estimate electron-phonon coupling and possible superconductivity in covalent materials. *Physical Review B*, **2008**, 78,	3.3	11
49	Theory of metastable group-IV alloys formed from CVD precursors. *Physical Review B*, **2001**, 64,	3.3	11
48	Spontaneous twisting of a collapsed carbon nanotube. *Nano Research*, **2017**, 10, 1942-1949	10	10
47	Frustration and Atomic Ordering in a Monolayer Semiconductor Alloy. *Physical Review Letters*, **2020** , 124, 096101	7.4	10
46	Emergence of Topologically Nontrivial Spin-Polarized States in a Segmented Linear Chain. *Physical Review Letters*, **2020**, 124, 206403	7.4	9
45	The Fermi atomic pseudopotential. *American Journal of Physics*, **1984**, 52, 695-703	0.7	9
44	Insulating titanium oxynitride for visible light photocatalysis. *Physical Review B*, **2019**, 99,	3.3	8
43	Geometry and electronic structure of iridium adsorbed on graphene. *Physical Review B*, **2019**, 99,	3.3	8
42	Electron-Phonon-Induced Superconductivity. *Journal of Superconductivity and Novel Magnetism*, **2007**, 19, 283-290	1.5	8
41	Prediction of new materials and properties of solids. *International Journal of Quantum Chemistry*, **1986**, 29, 843-854	2.1	8
40	Alternative structure of TiO2 with higher energy valence band edge. *Physical Review B*, **2017**, 95,	3.3	7
39	Electronic Structure and Energetics of MgB2 Nanotube. *Journal of the Physical Society of Japan*, **2007**, 76, 043707	1.5	7
38	Magnetism in amorphous carbon. *Physical Review Materials*, **2018**, 2,	3.2	7
37	Stabilization of NbTe, VTe, and TiTe via Nanotube Encapsulation. *Journal of the American Chemical Society*, **2021**, 143, 4563-4568	16.4	7
36	Electronic properties of B-C-N ternary kagome lattices. *Physical Review B*, **2015**, 91,	3.3	6

35	Effect of spin fluctuations on quasiparticle excitations: First-principles theory and application to sodium and lithium. *Physical Review B*, **2014**, 89,	3.3	6
34	PREDICTING AND EXPLAINING Tc AND OTHER PROPERTIES OF BCS SUPERCONDUCTORS. *Modern Physics Letters B*, **2010**, 24, 2755-2768	1.6	6
33	Fermi surfaces and quantum oscillations in the underdoped high-Tc superconductors YBa2Cu3O6.5 and YBa2Cu4O8. *Physical Review B*, **2011**, 84,	3.3	6
32	Superconductivity in modified semiconductors and the path to higher transition temperatures. *Superconductor Science and Technology*, **2015**, 28, 043001	3.1	5
31	Conceptual progress for explaining and predicting semiconductor properties. *Journal of Materials Research*, **2011**, 26, 2815-2825	2.5	5
30	Simulating the Nanomechanical Response of Cyclooctatetraene Molecules on a Graphene Device. *ACS Nano*, **2019**, 13, 1713-1718	16.7	4
29	Explaining and predicting the properties of materials using quantum theory. *MRS Bulletin*, **2015**, 40, 516-525	3	4
28	Inelastic carrier lifetime in bilayer graphene. *Applied Physics Letters*, **2012**, 100, 032106	3.4	4
27	Intermolecular interactions and substrate effects for an adamantane monolayer on a Au(111) surface. *Physical Review B*, **2013**, 88,	3.3	4
26	Electron–phonon induced pairing and its limits for superconducting systems. *Physica E: Low-Dimensional Systems and Nanostructures*, **2011**, 43, 657-660	3	4
25	Nanoscience: The quantum frontier. *Physica E: Low-Dimensional Systems and Nanostructures*, **2005**, 29, 447-453	3	4
24	Theory of Structural and Electronic Properties of Silicon Nitride and Carbon Nitride. *Materials Research Society Symposia Proceedings*, **1990**, 193, 95		4
23	EXPERIMENTAL CONSTRAINTS ON BOSON-EXCHANGE MECHANISMS FOR HIGH Tc SUPERCONDUCTORS. *International Journal of Modern Physics B*, **1991**, 05, 1495-1505	1.1	4
22	Low-energy structures of K atoms in expanded K3C60 monolayers: Ab initio pseudopotential density-functional calculations. *Physical Review B*, **2008**, 77,	3.3	3
21	A personal view of the physics of high pressure studies of solids. *Physica Status Solidi (B): Basic Research*, **2003**, 235, 221-224	1.3	3
20	Magnon-Exchange Pairing and Superconductivity. *Science*, **1989**, 243, 547-547	33.3	3
19	Comparison of GW band structure to semiempirical approach for an FeSe monolayer. *Physical Review B*, **2020**, 101,	3.3	2
18	Superconductivity in C60 based solids. *The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties*, **1994**, 70, 627-636		2

17	Real-space study of the optical absorption in alternative phases of silicon. *Physical Review Materials* , **2017**, 1,	3.2	2
16	Role of atomic coordination on superconducting properties of boron-doped amorphous carbon. *Physical Review Materials*, **2019**, 3,	3.2	2
15	Heavy boron doping in superconducting carbon materials. *Physical Review Materials*, **2020**, 4,	3.2	2
14	Magnetic multilayer edges in Bernal-stacked hexagonal boron nitride. *Physical Review B*, **2020**, 102,	3.3	2
13	Electron beam-induced nanopores in Bernal-stacked hexagonal boron nitride. *Applied Physics Letters*, **2020**, 117, 023102	3.4	2
12	Ultranarrow TaS Nanoribbons. *Nano Letters*, **2021**, 21, 3211-3217	11.5	2
11	Multiparticle Exciton Ionization in Shallow Doped Carbon Nanotubes. *Journal of Physical Chemistry Letters*, **2013**, 4, 982-6	6.4	1
10	Superconducting Properties of K3C60 and Rb3C60 Single Crystals in High Fields. *Molecular Crystals and Liquid Crystals*, **1994**, 245, 333-337		1
9	Some Theories of High Temperature Superconductivity. *Materials Research Society Symposia Proceedings*, **1989**, 169, 13		1
8	Observed metallization of hydrogen interpreted as a band structure effect. *Journal of Physics Condensed Matter*, **2020**, 33, 03LT01	1.8	1
7	Band offsets in c-Si/Si-XII heterojunctions. *Solid State Communications*, **2014**, 191, 6-9	1.6	
6	Fifty years of pseudopotentials. *International Journal of Quantum Chemistry*, **2009**, 24, 583-595	2.1	
5	PREDICTING AND EXPLAINING Tc AND OTHER PROPERTIES OF BCS SUPERCONDUCTORS **2010**, 375-389		
4	Tight-Binding Formalism for Ionic Fullerides and its Application to Alkali-C60 Polymers. *Materials Research Society Symposia Proceedings*, **1997**, 491, 395		
3	Theoretical Study of a New Transition Sequence in III-V Compounds: High-Pressure Phases of InSb. *Materials Research Society Symposia Proceedings*, **1990**, 193, 89		
2	Theoretical Study of High Pressure Metallic Hydrogen. *Materials Research Society Symposia Proceedings*, **1990**, 193, 15		
1	Pseudopotential Calculations of Structural Properties of Solids. *Materials Research Society Symposia Proceedings*, **1985**, 63, 107		