

Marvin L Cohen

List of Publications by Year in descending order

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171
papers

23,506
citations

13827

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175
docs citations

175
times ranked

17471
citing authors

#	ARTICLE	IF	CITATIONS
1	Band Structures and Pseudopotential Form Factors for Fourteen Semiconductors of the Diamond and Zinc-blende Structures. <i>Physical Review</i> , 1966, 141, 789-796.	2.7	1,575
2	Theory of graphitic boron nitride nanotubes. <i>Physical Review B</i> , 1994, 49, 5081-5084.	1.1	1,564
3	First-principles study of metal adatom adsorption on graphene. <i>Physical Review B</i> , 2008, 77, .	1.1	1,245
4	Graphene at the Edge: Stability and Dynamics. <i>Science</i> , 2009, 323, 1705-1708.	6.0	1,153
5	Calculation of bulk moduli of diamond and zinc-blende solids. <i>Physical Review B</i> , 1985, 32, 7988-7991.	1.1	1,048
6	The origin of the anomalous superconducting properties of MgB ₂ . <i>Nature</i> , 2002, 418, 758-760.	13.7	867
7	Pure Carbon Nanoscale Devices: Nanotube Heterojunctions. <i>Physical Review Letters</i> , 1996, 76, 971-974.	2.9	860
8	Superconductivity in Semiconducting SrTiO ₃ . <i>Physical Review Letters</i> , 1964, 12, 474-475.	2.9	760
9	BerkeleyGW: A massively parallel computer package for the calculation of the quasiparticle and optical properties of materials and nanostructures. <i>Computer Physics Communications</i> , 2012, 183, 1269-1289.	3.0	706
10	Electronic mechanism of hardness enhancement in transition-metal carbonitrides. <i>Nature</i> , 1999, 399, 132-134.	13.7	662
11	Electron-phonon interaction using Wannier functions. <i>Physical Review B</i> , 2007, 76, .	1.1	625
12	Anisotropic behaviours of massless Dirac fermions in graphene under periodic potentials. <i>Nature Physics</i> , 2008, 4, 213-217.	6.5	609
13	Microscopic Theory of the Phase Transformation and Lattice Dynamics of Si. <i>Physical Review Letters</i> , 1980, 45, 1004-1007.	2.9	496
14	Fully collapsed carbon nanotubes. <i>Nature</i> , 1995, 377, 135-138.	13.7	466
15	Ideal Shear Strengths of fcc Aluminum and Copper. <i>Physical Review Letters</i> , 1999, 82, 2713-2716.	2.9	442
16	The Fitting of Pseudopotentials to Experimental Data and Their Subsequent Application. <i>Solid State Physics</i> , 1970, , 37-248.	1.3	425
17	Electronic Properties of Oxidized Carbon Nanotubes. <i>Physical Review Letters</i> , 2000, 85, 1710-1713.	2.9	385
18	Pseudopotentials and Total Energy Calculations. <i>Physica Scripta</i> , 1982, T1, 5-10.	1.2	349

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19	Broken symmetry and pseudogaps in ropes of carbon nanotubes. <i>Nature</i> , 1998, 391, 466-468.	13.7	348
20	First-principles calculation of the superconducting transition in MgB ₂ within the anisotropic Eliashberg formalism. <i>Physical Review B</i> , 2002, 66, .	1.1	323
21	Experimental and theoretical equation of state of cubic boron nitride. <i>Nature</i> , 1989, 337, 349-352.	13.7	307
22	Electronic Structure and Optical Properties of Semiconductors. Springer Series in Solid-state Sciences, 1989, , .	0.3	305
23	Nanostructured Carbon Allotropes with Weyl-like Loops and Points. <i>Nano Letters</i> , 2015, 15, 6974-6978.	4.5	302
24	Vacancy Hardening and Softening in Transition Metal Carbides and Nitrides. <i>Physical Review Letters</i> , 2001, 86, 3348-3351.	2.9	284
25	In Situ Band Gap Engineering of Carbon Nanotubes. <i>Physical Review Letters</i> , 1997, 79, 2093-2096.	2.9	273
26	Multiply folded graphene. <i>Physical Review B</i> , 2011, 83, .	1.1	269
27	Superconductivity in Many-Valley Semiconductors and in Semimetals. <i>Physical Review</i> , 1964, 134, A511-A521.	2.7	233
28	Wave-Vector-Dependent Dielectric Function for Si, Ge, GaAs, and ZnSe. <i>Physical Review B</i> , 1970, 2, 1821-1826.	1.1	219
29	Superconductivity in High-Pressure Metallic Phases of Si. <i>Physical Review Letters</i> , 1985, 54, 2375-2378.	2.9	205
30	Ideal strength of bcc molybdenum and niobium. <i>Physical Review B</i> , 2002, 66, .	1.1	195
31	Iodine intercalation of a high-temperature superconducting oxide. <i>Nature</i> , 1990, 348, 145-147.	13.7	175
32	High Accuracy Many-Body Computational Approaches for Excitations in Molecules. <i>Physical Review Letters</i> , 2001, 86, 472-475.	2.9	169
33	Observation of the Giant Stark Effect in Boron-Nitride Nanotubes. <i>Physical Review Letters</i> , 2005, 94, 056804.	2.9	163
34	Self-consistent pseudopotential method for localized configurations: Molecules. <i>Physical Review B</i> , 1975, 12, 5575-5579.	1.1	160
35	Structural forms of cubic BC ₂ N. <i>Physical Review B</i> , 2001, 64, .	1.1	159
36	Small phonon contribution to the photoemission kink in the copper oxide superconductors. <i>Nature</i> , 2008, 452, 975-978.	13.7	157

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37	Coulomb-hole summations and energies for G and W calculations with limited number of empty orbitals: A modified static remainder approach. Physical Review B, 2013, 87, .	1.1	149
38	Calcium-decorated carbon nanotubes for high-capacity hydrogen storage: First-principles calculations. Physical Review B, 2009, 80, .	1.1	148
39	Electron-Phonon Interactions in Solid C ₃₆ . Physical Review Letters, 1998, 81, 697-700.	2.9	136
40	Electron-Phonon Interaction via Electronic and Lattice Wannier Functions: Superconductivity in Boron-Doped Diamond Reexamined. Physical Review Letters, 2007, 98, 047005.	2.9	136
41	Connecting atomistic and experimental estimates of ideal strength. Physical Review B, 2002, 65, .	1.1	127
42	Structural and electronic properties of n-doped and p-doped SrTiO ₃ . Physical Review B, 2004, 70, .	1.1	127
43	Dynamic Sliding Friction between Concentric Carbon Nanotubes. Physical Review Letters, 2004, 93, 065503.	2.9	125
44	Mechanical Instability and Ideal Shear Strength of Transition Metal Carbides and Nitrides. Physical Review Letters, 2001, 87, 075503.	2.9	122
45	GW method with the self-consistent Sternheimer equation. Physical Review B, 2010, 81, .	1.1	122
46	Temperature Dependence of the Band Gap of Semiconducting Carbon Nanotubes. Physical Review Letters, 2005, 94, 036801.	2.9	119
47	The physics of boron nitride nanotubes. Physics Today, 2010, 63, 34-38.	0.3	119
48	Self-Consistent Pseudopotential Calculation for a Metal-Semiconductor Interface. Physical Review Letters, 1975, 35, 866-869.	2.9	116
49	Static conductivity and superconductivity of carbon nanotubes: Relations between tubes and sheets. Physical Review B, 1995, 52, 14935-14940.	1.1	116
50	Amplification of fluctuations in a spinor Bose-Einstein condensate. Physical Review A, 2009, 79, .	1.0	113
51	Ab initio survey of the electronic structure of tetrahedrally bonded phases of silicon. Physical Review B, 2008, 78, .	1.1	112
52	Computational design of direct-bandgap semiconductors that lattice-match silicon. Nature, 2001, 409, 69-71.	13.7	110
53	Ab initio study of silicon in the R8 phase. Physical Review B, 1997, 56, 6662-6668.	1.1	103
54	Theory of sodium ordering in Na _x CoO ₂ . Physical Review B, 2005, 71, .	1.1	102

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55	Complete absence of isotope effect in YBa ₂ Cu ₃ O ₇ : Consequences for phonon-mediated superconductivity. <i>Physical Review B</i> , 1987, 36, 3990-3993.	1.1	89
56	Hydrostatic pressure effects on the structural and electronic properties of carbon nanotubes. <i>Physica Status Solidi (B): Basic Research</i> , 2004, 241, 3352-3359.	0.7	88
57	Constraints on $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \langle \text{mml:msub} \langle \text{mml:mi} \rangle T \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle c \langle \text{mml:mi} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$ for superconductivity in heavily boron-doped diamond. <i>Physical Review B</i> , 2008, 77, .	1.1	87
58	Electronic structure of the $\text{Si}(111)$ surface. <i>Journal of Vacuum Science and Technology</i> , 1982, 21, 333-336.	1.9	84
59	First-principles prediction of high-temperature superconductivity in metallic hydrogen. <i>Nature</i> , 1989, 340, 369-371.	13.7	80
60	Nanotubes, Nanoscience, and Nanotechnology. <i>Materials Science and Engineering C</i> , 2001, 15, 1-11.	3.8	78
61	Identifying Defects in Nanoscale Materials. <i>Physical Review Letters</i> , 2004, 93, 196803.	2.9	78
62	Alternative stacking sequences in hexagonal boron nitride. <i>2D Materials</i> , 2019, 6, 021006.	2.0	78
63	Doping effects on the electronic and structural properties of CoO ₂ : An LSDA+U study. <i>Physical Review B</i> , 2004, 70, .	1.1	77
64	Structural and electronic properties of carbon in hybrid diamond-graphite structures. <i>Physical Review B</i> , 2005, 72, .	1.1	77
65	Theory of semiconductor surface states and metal-semiconductor interfaces. <i>Journal of Vacuum Science and Technology</i> , 1976, 13, 790-797.	1.9	74
66	Three-dimensional fluctuation conductivity in superconducting single crystal K ₃ C ₆₀ and Rb ₃ C ₆₀ . <i>Nature</i> , 1993, 361, 54-56.	13.7	73
67	Novel materials from theory. <i>Nature</i> , 1989, 338, 291-292.	13.7	72
68	Phonon Softening and Superconductivity in Tellurium under Pressure. <i>Physical Review Letters</i> , 1996, 77, 1151-1154.	2.9	67
69	Hypothetical hard structures of carbon with cubic symmetry. <i>Physical Review B</i> , 2006, 74, .	1.1	66
70	Torsional instability in the single-chain limit of a transition metal trichalcogenide. <i>Science</i> , 2018, 361, 263-266.	6.0	60
71	<i>Ab initio</i> study of the optical properties of Si-XII. <i>Physical Review B</i> , 2008, 78, .	1.1	58
72	First-principles scattering-state approach for nonlinear electrical transport in nanostructures. <i>Physical Review B</i> , 2007, 76, .	1.1	53

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73	The Theory of Real Materials. Annual Review of Materials Research, 2000, 30, 1-26.	5.5	51
74	Two bounds on the maximum phonon-mediated superconducting transition temperature. Physical Review B, 2006, 74, .	1.1	51
75	Van Hove singularity and apparent anisotropy in the electron-phonon interaction in graphene. Physical Review B, 2008, 77, .	1.1	50
76	Carbon Kagome Lattice and Orbital-Frustration-Induced Metal-Insulator Transition for Optoelectronics. Physical Review Letters, 2014, 113, 085501.	2.9	49
77	A class of topological nodal rings and its realization in carbon networks. Physical Review B, 2018, 97, .	1.1	49
78	Rubidium isotope effect in superconducting Rb ₃ C ₆₀ . Physical Review Letters, 1994, 72, 3706-3709.	2.9	46
79	Molecular Self-Assembly in a Poorly Screened Environment: F ₄ TCNQ on Graphene/BN. ACS Nano, 2015, 9, 12168-12173.	7.3	45
80	Electron-phonon coupling in C ₆₀ hybrid functionals. Physical Review B, 2010, 81, .	1.1	44
81	Controlled formation of metastable germanium polymorphs. Physical Review B, 2014, 89, .	1.1	43
82	Anomalous behavior in high-pressure carbonaceous sulfur hydride. Physica C: Superconductivity and Its Applications, 2021, 583, 1353851.	0.6	42
83	Prediction of superconducting properties of CaB ₂ anisotropic Eliashberg theory. Physical Review B, 2009, 80, .	1.1	35
84	quasiparticle corrections to the GW structure of bcc hydrogen. Physical Review B, 2008, 77, .	1.1	34
85	High-Performance Atomically-Thin Room-Temperature NO ₂ Sensor. Nano Letters, 2020, 20, 6120-6127.	4.5	34
86	Theory of bulk moduli of hard solids. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1988, 105-106, 11-18.	2.6	32
87	First-principles study of superconductivity and Fermi-surface nesting in ultrahard transition metal carbides. Physical Review B, 2008, 77, .	1.1	32
88	Theory of domain formation in inhomogeneous ferromagnetic dipolar condensates within the truncated Wigner approximation. Physical Review A, 2009, 80, .	1.0	30
89	Anisotropic Eliashberg theory and the two-band model for the superconducting properties of MgB ₂ . Physical Review B, 2006, 73, .	1.1	27
90	Origin of superconductivity in boron-doped silicon carbide from first principles. Physical Review B, 2009, 79, .	1.1	27

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91	<i>Ab initio</i> calculations of pressure-induced structural phase transitions of GeTe. Physical Review B, 2010, 82, .	1.1	27
92	Stabilization of NbTe ₃ , VTe ₃ , and TiTe ₃ via Nanotube Encapsulation. Journal of the American Chemical Society, 2021, 143, 4563-4568.	6.6	27
93	Observation of pressure-induced direct-to-indirect band gap transition in InP nanocrystals. Journal of Chemical Physics, 2000, 113, 2016-2020.	1.2	26
94	Metal-insulator transition in quasi-one-dimensional HfTe_3 in the few-chain limit. Physical Review B, 2019, 100, .	1.1	25
95	Selective functionalization of halogens on zigzag graphene nanoribbons: A route to the separation of zigzag graphene nanoribbons. Applied Physics Letters, 2010, 97, 233101.	1.5	23
96	Enhanced electron-phonon coupling near the lattice instability of superconducting NbC from density-functional calculations. Physical Review B, 2011, 84, .	1.1	23
97	Mechanism for bias-assisted indium mass transport on carbon nanotube surfaces. Physical Review B, 2005, 72, .	1.1	22
98	Lattice matching and electronic structure of finite-layer graphene/h-BN thin films. Physical Review B, 2014, 89, .	1.1	21
99	Search for Superconductivity in Lithium. Journal of Low Temperature Physics, 1999, 114, 445-454.	0.6	19
100	Reply to "Comment on 'First-principles calculation of the superconducting transition in MgB ₂ within the anisotropic Eliashberg formalism'" Physical Review B, 2004, 69, .	1.1	19
101	Electron-phonon coupling and superconductivity in Li-intercalated layered borocarbide compounds. Physical Review B, 2014, 89, .	1.1	19
102	Frustration and Atomic Ordering in a Monolayer Semiconductor Alloy. Physical Review Letters, 2020, 124, 096101.	2.9	19
103	Emergence of Topologically Nontrivial Spin-Polarized States in a Segmented Linear Chain. Physical Review Letters, 2020, 124, 206403.	2.9	18
104	Anisotropic Eliashberg theory for superconductivity in compressed and doped MgB ₂ . Physical Review B, 2009, 79, .	1.1	17
105	Wave function engineering: Other phases of Si for photovoltaic applications. Journal of Applied Physics, 2011, 109, 102402.	1.1	17
106	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.	1.2	17
107	Simulating the effect of boron doping in superconducting carbon. Physical Review B, 2018, 97, .	1.1	17
108	Electrostatically Driven Nanoballoon Actuator. Nano Letters, 2016, 16, 6787-6791.	4.5	16

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127	Alternative structure of TiO_2 with higher energy valence band edge. Physical Review B, 2017, 95, .		
128	Prediction of new materials and properties of solids. International Journal of Quantum Chemistry, 1986, 29, 843-854.	1.0	8
129	PREDICTING AND EXPLAINING T_c AND OTHER PROPERTIES OF BCS SUPERCONDUCTORS. Modern Physics Letters B, 2010, 24, 2755-2768.	1.0	8
130	Electronic Structure and Energetics of MgB ₂ Nanotube. Journal of the Physical Society of Japan, 2007, 76, 043707.	0.7	7
131	Fermi surfaces and quantum oscillations in the underdoped high-T _c superconductors YBa ₂ Cu ₃ O _{6.5} and YBa ₂ Cu ₄ O ₈ . Physical Review B, 2011, 84, .	1.1	7
132	Inelastic carrier lifetime in bilayer graphene. Applied Physics Letters, 2012, 100, .	1.5	7
133	Electron beam-induced nanopores in Bernal-stacked hexagonal boron nitride. Applied Physics Letters, 2020, 117, .	1.5	7
134	Observed metallization of hydrogen interpreted as a band structure effect. Journal of Physics Condensed Matter, 2021, 33, 03LT01.	0.7	7
135	Experimental and Theoretical Study of Possible Collective Electronic States in Exfoliable Re-Doped NbS ₂ . ACS Nano, 2021, 15, 18297-18304.	7.3	7
136	Intermolecular interactions and substrate effects for an adamantane monolayer on a Au(111) surface. Physical Review B, 2013, 88, .	1.1	6
137	Electronic properties of B-C-N ternary kagome lattices. Physical Review B, 2015, 91, .	1.1	6
138	Simulating the Nanomechanical Response of Cyclooctatetraene Molecules on a Graphene Device. ACS Nano, 2019, 13, 1713-1718.	7.3	6
139	Comparison of GW band structure to semiempirical approach for an FeSe monolayer. Physical Review B, 2020, 101, .		
140	Theory of Structural and Electronic Properties of Silicon Nitride and Carbon Nitride. Materials Research Society Symposia Proceedings, 1990, 193, 95.	0.1	5
141	Electron-phonon induced pairing and its limits for superconducting systems. Physica E: Low-Dimensional Systems and Nanostructures, 2011, 43, 657-660.	1.3	5
142	Conceptual progress for explaining and predicting semiconductor properties. Journal of Materials Research, 2011, 26, 2815-2825.	1.2	5
143	Explaining and predicting the properties of materials using quantum theory. MRS Bulletin, 2015, 40, 516-525.	1.7	5
144	EXPERIMENTAL CONSTRAINTS ON BOSON-EXCHANGE MECHANISMS FOR HIGH T _c SUPERCONDUCTORS. International Journal of Modern Physics B, 1991, 05, 1495-1505.	1.0	4

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145	Nanoscience: The quantum frontier. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2005, 29, 447-453.	1.3	4
146	Magnetic multilayer edges in Bernal-stacked hexagonal boron nitride. <i>Physical Review B</i> , 2020, 102, .	1.1	4
147	Prediction of high-temperature superconductivity in C_2 solid hydrogen. <i>Physical Review B</i> , 2022, 105, .		
148	Superconductivity in C ₆₀ based solids. <i>The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties</i> , 1994, 70, 627-636.	0.6	3
149	A personal view of the physics of high pressure studies of solids. <i>Physica Status Solidi (B): Basic Research</i> , 2003, 235, 221-224.	0.7	3
150	Low-energy structures of K atoms in expanded K ₃ C ₆₀ monolayers: Ab initio pseudopotential density-functional calculations. <i>Physical Review B</i> , 2008, 77, .	1.1	3
151	Role of atomic coordination on superconducting properties of boron-doped amorphous carbon. <i>Physical Review Materials</i> , 2019, 3, .	0.9	3
152	Heavy boron doping in superconducting carbon materials. <i>Physical Review Materials</i> , 2020, 4, .	0.9	3
153	Magnon-Exchange Pairing and Superconductivity. <i>Science</i> , 1989, 243, 547-547.	6.0	3
154	High temperature superconductivity in the candidate phases of solid hydrogen. <i>Journal of Physics Condensed Matter</i> , 2022, 34, 15LT01.	0.7	3
155	Superconducting Properties of K ₃ C ₆₀ and Rb ₃ C ₆₀ Single Crystals in High Fields. <i>Molecular Crystals and Liquid Crystals</i> , 1994, 245, 333-337.	0.3	2
156	Multiparticle Exciton Ionization in Shallow Doped Carbon Nanotubes. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 982-986.	2.1	2
157	Real-space study of the optical absorption in alternative phases of silicon. <i>Physical Review Materials</i> , 2017, 1, .	0.9	2
158	Disorder and the Electronic Density of States of Amorphous Binary Compounds. , 1974, , .		1
159	Some Theories of High Temperature Superconductivity. <i>Materials Research Society Symposia Proceedings</i> , 1989, 169, 13.	0.1	1
160	Possibility of high temperature superconductivity in C ₃₆ and C ₂₄ N ₁₂ solids. , 1999, , .		1
161	Characterization of Amorphous Systems Using Local Configurations. , 1974, , .		0
162	Pseudopotential Calculations of Structural Properties of Solids. <i>Materials Research Society Symposia Proceedings</i> , 1985, 63, 107.	0.1	0

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163	Theoretical Study of a new Transition Sequence in III-V Compounds: High-Pressure Phases of InSb. Materials Research Society Symposia Proceedings, 1990, 193, 89.	0.1	0
164	Theoretical Study of High Pressure Metallic Hydrogen. Materials Research Society Symposia Proceedings, 1990, 193, 15.	0.1	0
165	Tight-Binding Formalism for Ionic Fullerides and its Application to Alkali-C60 Polymers. Materials Research Society Symposia Proceedings, 1997, 491, 395.	0.1	0
166	Temperature and Hydrostatic Pressure Effects on the Band Gap of Semiconducting Carbon Nanotubes. AIP Conference Proceedings, 2005, , .	0.3	0
167	Family Behavior of the Pressure and Temperature Dependences of the Band Gap of Semiconducting Carbon Nanotubes. AIP Conference Proceedings, 2005, , .	0.3	0
168	Fifty years of pseudopotentials. International Journal of Quantum Chemistry, 2009, 24, 583-595.	1.0	0
169	PREDICTING AND EXPLAINING T_c AND OTHER PROPERTIES OF BCS SUPERCONDUCTORS. , 2010, , 375-389.		0
170	Band offsets in c-Si/Si-XII heterojunctions. Solid State Communications, 2014, 191, 6-9.	0.9	0
171	Role of carbon in modifying the properties of superconducting hydrogen sulfide. Physical Review Materials, 2022, 6, .	0.9	0