

# Sheldon Green

## List of Publications by Year in descending order

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87  
papers

3,644  
citations

109137

35  
h-index

143772

57  
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88  
all docs

88  
docs citations

88  
times ranked

880  
citing authors

#	ARTICLE	IF	CITATIONS
1	Rotational excitation in H <sub>2</sub> –H <sub>2</sub> collisions: Close-coupling calculations. <i>Journal of Chemical Physics</i> , 1975, 62, 2271-2277.	1.2	288
2	On the factorization and fitting of molecular scattering information. <i>Journal of Chemical Physics</i> , 1977, 67, 5661-5675.	1.2	204
3	Rotational excitation of symmetric top molecules by collisions with atoms: Close coupling, coupled states, and effective potential calculations for NH <sub>3</sub> –He. <i>Journal of Chemical Physics</i> , 1976, 64, 3463.	1.2	195
4	Rotational Excitation of HCN by Collisions. <i>Astrophysical Journal</i> , 1974, 191, 653.	1.6	146
5	Calculated Potential-Energy Curves for CH <sup>+</sup> . <i>Physical Review A</i> , 1972, 5, 1614-1618.	1.0	130
6	Improved collisional excitation rates for interstellar water. <i>Astrophysical Journal, Supplement Series</i> , 1993, 85, 181.	3.0	115
7	Rotational excitation of symmetric top molecules by collisions with atoms. II. Infinite order sudden approximation. <i>Journal of Chemical Physics</i> , 1979, 70, 816.	1.2	111
8	Energy transfer in NH <sub>3</sub> –He collisions. <i>Journal of Chemical Physics</i> , 1980, 73, 2740-2750.	1.2	101
9	Electric Dipole Moment of Diatomic Molecules by Configuration Interaction. I. Closed-shell Molecules. <i>Journal of Chemical Physics</i> , 1971, 54, 827-832.	1.2	95
10	Anisotropic rigid rotor potential energy function for H <sub>2</sub> O–H <sub>2</sub> . <i>Journal of Chemical Physics</i> , 1994, 101, 5824-5830.	1.2	78
11	Rotational excitation of linear molecules by collisions with atoms: Comparison of classical and quantum methods. <i>Journal of Chemical Physics</i> , 1977, 67, 2317.	1.2	77
12	The coupled states approximation for scattering of two diatoms. <i>Journal of Chemical Physics</i> , 1978, 68, 2562.	1.2	72
13	Validity of approximate methods in molecular scattering: Thermal HCl–He collisions. <i>Journal of Chemical Physics</i> , 1975, 63, 4198-4205.	1.2	71
14	Pressure broadening and line coupling in bending bands of CO <sub>2</sub> . <i>Journal of Chemical Physics</i> , 1989, 90, 3603-3614.	1.2	65
15	Accurate collision-induced line-coupling parameters for the fundamental band of CO in He: Close coupling and coupled states scattering calculations. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 1988, 39, 33-42.	1.1	59
16	Spectral line shape parameters for HF in a bath of Ar are accurately predicted by a potential inferred from spectra of the van der Waals dimer. <i>Journal of Chemical Physics</i> , 1994, 100, 891-898.	1.2	58
17	Validity of central field approximations in molecular scattering: Low energy CO–He collisions. <i>Journal of Chemical Physics</i> , 1975, 63, 2000-2009.	1.2	53
18	Collision dynamics for an asymmetric top rotor and a linear rotor: Coupled channel formalism and application to H <sub>2</sub> O–H <sub>2</sub> . <i>Journal of Chemical Physics</i> , 1995, 102, 6024-6031.	1.2	53

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19	Theoretical three-dimensional potential-energy surface for the reaction of Be with HF. <i>Chemical Physics</i> , 1983, 78, 93-105.	0.9	51
20	Effects of velocity changing collisions on line shapes of HF in Ar. <i>Journal of Chemical Physics</i> , 1995, 102, 9160-9166.	1.2	49
21	Sources of Error and Expected Accuracy in Ab Initio One-Electron Operator Properties: The Molecular Dipole Moment. <i>Advances in Chemical Physics</i> , 2007, , 179-209.	0.3	49
22	Low-temperature rotational relaxation in gaseous H <sub>2</sub> and D <sub>2</sub> . <i>Journal of Chemical Physics</i> , 1977, 66, 3021-3030.	1.2	48
23	Effect of the potential well on low temperature pressure broadening in CO-He. <i>Journal of Chemical Physics</i> , 1986, 85, 1333-1335.	1.2	48
24	Computational tests of angular momentum decoupling approximations for pressure broadening cross sections. <i>Journal of Chemical Physics</i> , 1977, 66, 1409-1412.	1.2	47
25	Theoretical study of collinear Be+FH(v <sub>1</sub> ) → BeF(v <sub>2</sub> ) +H. <i>Journal of Chemical Physics</i> , 1978, 69, 3790-3806.	1.2	45
26	Calculation of pressure broadening parameters for the CO-He system at low temperatures. <i>Journal of Chemical Physics</i> , 1985, 82, 4548-4550.	1.2	43
27	Dicke narrowing of the polarized Stokes-Raman Q branch of the v=0 → 1 transition of D <sub>2</sub> in He. <i>Journal of Chemical Physics</i> , 1989, 91, 3846-3853.	1.2	43
28	Vibrational dependence of pressure induced spectral linewidths and line shifts: Application of the infinite order sudden scattering approximation. <i>Journal of Chemical Physics</i> , 1979, 70, 4686-4693.	1.2	42
29	Quadrupole Moment of Li. <i>Physical Review A</i> , 1971, 4, 251-253.	1.0	41
30	Quantum calculations for rotational energy transfer in nitrogen molecule collisions. <i>Journal of Chemical Physics</i> , 1996, 104, 7572-7589.	1.2	40
31	Hartree-Fock and Gordon-Kim interaction potentials for scattering of closed-shell molecules by atoms: (H <sub>2</sub> CO,He) and (H <sub>2</sub> ,Li+). <i>Journal of Chemical Physics</i> , 1975, 63, 1154-1161.	1.2	39
32	Theoretical investigation of protonated carbon dioxide. <i>Chemical Physics</i> , 1976, 17, 479-485.	0.9	38
33	Surprisal analysis of rotational-translational energy transfer: Non-linear versus linear rotors. <i>Chemical Physics</i> , 1979, 40, 1-10.	0.9	38
34	On the use of pressure broadening data to assess the accuracy of CO-He interaction potentials. <i>Journal of Chemical Physics</i> , 1980, 73, 5391-5393.	1.2	38
35	Raman Q-branch line shapes as a test of the H <sub>2</sub> -Ar intermolecular potential. <i>Journal of Chemical Physics</i> , 1990, 93, 1496-1501.	1.2	37
36	Intermolecular potential for thermal H <sub>2</sub> O-He collisions. <i>Journal of Chemical Physics</i> , 1988, 89, 1401-1407.	1.2	36

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37	Calculations of H <sub>2</sub> O microwave line broadening in collisions with He atoms: Sensitivity to potential energy surfaces. <i>Journal of Chemical Physics</i> , 1991, 94, 1346-1359.	1.2	35
38	Calculated properties for No X <sup>2</sup> $\hat{\Gamma}$ and A 2 $\hat{\Gamma}$ <sup>+</sup> . II. Configuration interaction. <i>Chemical Physics Letters</i> , 1973, 23, 115-119.	1.2	32
39	Comment on the accuracy of Rabitz's effective potential approximation for rotational excitation by collisions. <i>Journal of Chemical Physics</i> , 1975, 62, 3568.	1.2	31
40	Validity of approximate methods in molecular scattering. III. Effective potential and coupled states approximations for differential and gas kinetic cross sections. <i>Journal of Chemical Physics</i> , 1977, 66, 3085-3093.	1.2	31
41	Incorrect Dissociation of CO in the Restricted Hartree-Fock Approximation. <i>Journal of Chemical Physics</i> , 1970, 52, 3100-3104.	1.2	30
42	Electric Dipole Moment of Diatomic Molecules by Configuration Interaction. III. Open-Shell Molecules CO a <sup>3</sup> II and CS A III. <i>Journal of Chemical Physics</i> , 1972, 56, 739-744.	1.2	30
43	Comment of fitting ab initio intermolecular potentials for scattering calculations. <i>Journal of Chemical Physics</i> , 1977, 67, 715-717.	1.2	30
44	Collisional excitation of interstellar water. <i>Astrophysical Journal, Supplement Series</i> , 1988, 68, 287.	3.0	30
45	Polarized D <sub>2</sub> Stokes-Raman Q branch broadened by He: A numerical calculation. <i>Journal of Chemical Physics</i> , 1988, 88, 4113-4119.	1.2	29
46	Theoretical line shapes for rotational spectra of HCl in Ar. <i>Journal of Chemical Physics</i> , 1990, 92, 4679-4685.	1.2	28
47	Rotational excitation in collisions between two rigid rotors: Alternate angular momentum coupling and pressure broadening of HCl BY H <sub>2</sub> . <i>Chemical Physics Letters</i> , 1977, 47, 119-122.	1.2	26
48	Electric Dipole Moment of Diatomic Molecules by Configuration Interaction. V. Two States of 2 $\hat{\Gamma}$ <sup>+</sup> Symmetry in CN. <i>Journal of Chemical Physics</i> , 1972, 57, 4694-4698.	1.2	24
49	Accuracy of decoupling approximations for rotational excitation: low-energy CO-He collisions. <i>Chemical Physics Letters</i> , 1976, 38, 293-296.	1.2	24
50	On the amount of information in rotational relaxation experiments with application to microwave transient T <sub>1</sub> and T <sub>2</sub> rates. <i>Journal of Chemical Physics</i> , 1978, 69, 4076-4082.	1.2	24
51	Comment on linewidths and shifts in the Stokes-Raman Q branch of D <sub>2</sub> in He. <i>Journal of Chemical Physics</i> , 1989, 91, 52-55.	1.2	24
52	Calculated properties for ClF. <i>Journal of Chemical Physics</i> , 1973, 58, 3117.	1.2	23
53	Effect of nuclear hyperfine structure on microwave spectral pressure broadening. <i>Journal of Chemical Physics</i> , 1988, 88, 7331-7336.	1.2	22
54	Accuracy of the IOS approximation for highly inelastic R <sub>i</sub> -T collisional energy transfer. CO-Ar. <i>Chemical Physics Letters</i> , 1984, 112, 436-440.	1.2	21

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55	Comment on broadening of water microwave lines by collisions with helium atoms. Journal of Chemical Physics, 1992, 96, 8150-8156.	1.2	21
56	Effect of molecular anisotropy on beam scattering measurements. Journal of Chemical Physics, 1978, 69, 598-605.	1.2	19
57	Accuracy of the energy-corrected sudden (ECS) scaling procedure for rotational excitation of CO by collisions with Ar. Journal of Chemical Physics, 1986, 84, 3865-3869.	1.2	19
58	Raman linewidths and rotationally inelastic collision rates in nitrogen. Journal of Chemical Physics, 1993, 98, 257-268.	1.2	19
59	Quantum scattering calculations for vibrational and rotational excitation of CO by hot hydrogen atoms. Journal of Chemical Physics, 1995, 102, 8800-8806.	1.2	19
60	Computational test of the infinite order sudden approximation for excitation of linear rigid rotors by collisions with atoms. Chemical Physics, 1978, 31, 425-431.	0.9	18
61	Dynamics of the collinear beryllium + hydrofluoric acid $\rightarrow$ beryllium fluoride + hydrogen reaction. The Journal of Physical Chemistry, 1979, 83, 920-922.	2.9	18
62	Test of a modified sudden approximation for rotational excitation in He + CH <sub>3</sub> CN. Chemical Physics, 1987, 112, 15-22.	0.9	18
63	Electric Dipole Moment of Diatomic Molecules by Configuration Interaction. IV. Basis Set Dependence in CO <sub>2</sub> . Journal of Chemical Physics, 1972, 57, 2830-2835.	1.2	16
64	Accuracy of the IOS approximation for highly inelastic R-T collisional energy transfer. Chemical Physics Letters, 1983, 98, 467-471.	1.2	16
65	Computational tests of the coupled states angular momentum decoupling approximation for NMR spin-lattice relaxation cross sections. Journal of Chemical Physics, 1977, 67, 225-228.	1.2	15
66	Electron-gas He-sio potential hypersurface for vibrational- rotational excitations through collisions. Chemical Physics Letters, 1981, 84, 380-384.	1.2	14
67	Electric Dipole Moment of Diatomic Molecules by Configuration Interaction. II Fixed-Core Approximation. Journal of Chemical Physics, 1971, 54, 3051-3053.	1.2	13
68	M dependence in the analysis of NH <sub>3</sub> -He microwave double resonance experiments. Journal of Chemical Physics, 1983, 78, 2170-2174.	1.2	13
69	Recent advances in pressure broadening: experiment and theory. Journal of Molecular Structure, 1988, 190, 435-446.	1.8	13
70	Pressure broadening data as a test of a recently proposed Ar-H <sub>2</sub> O interaction potential. Journal of Chemical Physics, 1991, 95, 3888-3890.	1.2	13
71	Collisional excitation of interstellar cyclopropenylidene. Astrophysical Journal, Supplement Series, 1987, 65, 175.	3.0	13
72	On the accuracy of the decoupled-dominant approximation for atom-molecule scattering. Journal of Chemical Physics, 1976, 65, 68-70.	1.2	12

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73	Calculations of pressure-broadened linewidths for CO in Ar. Journal of Quantitative Spectroscopy and Radiative Transfer, 1985, 33, 299-305.	1.1	12
74	Comment on symmetry of the interaction between an asymmetric rigid rotor and a linear rigid rotor. Journal of Chemical Physics, 1995, 103, 1035-1042.	1.2	12
75	Vibration-rotation excitation of CO by hot hydrogen atoms: Comparison of two potential energy surfaces. Journal of Chemical Physics, 1996, 105, 5416-5422.	1.2	12
76	Quantum calculations for line shapes in Raman spectra of molecular nitrogen. Journal of Chemical Physics, 1996, 104, 7590-7598.	1.2	11
77	Dipole moment and hyperfine constants of ODA <sup>2+</sup> from ab initio calculations. Journal of Chemical Physics, 1973, 58, 4327-4330.	1.2	10
78	Rotational excitation in low-energy methyl cyanide-helium collisions. The Journal of Physical Chemistry, 1985, 89, 5289-5294.	2.9	10
79	Rotational inelasticity in high-energy H <sub>2</sub> <sup>+</sup> -H <sub>2</sub> collisions. Chemical Physics, 1978, 28, 319-329.	0.9	9
80	Raman Q-branch line shapes as a test of a H <sub>2</sub> -Ar intermolecular potential. Journal of Chemical Physics, 1994, 101, 15-19.	1.2	9
81	Experimental and theoretical velocity profiles for pure rotational scattering: CO-hot hydrogen atom collisions. Journal of Chemical Physics, 1994, 101, 9499-9505.	1.2	8
82	Excitation of interstellar water by ortho-and para-hydrogen. Astrophysics and Space Science, 1995, 224, 537-538.	0.5	8
83	Comment on: Heterodyne spectroscopy of carbon monoxide lines perturbed by hydrogen and helium. Journal of Chemical Physics, 1992, 97, 1610-1611.	1.2	7
84	Methyl Cyanide as a Probe of the Temperature and Density in SgrB2; Quasi-Equilibrium in Molecular Rotational Levels. Astrophysics and Space Science Library, 1982, , 391-397.	1.0	4
85	Calculation of Pressure Broadened Spectral Line Shapes Including Collisional Transfer of Intensity. , 1992, , 257-283.		4
86	A simple ab initio calculation for energy transfer in collisions of hot hydrogen atoms with carbon dioxide. Chemical Physics Letters, 1991, 177, 508-516.	1.2	2
87	Excitation of Interstellar Water by Ortho-and Para-Hydrogen. , 1995, , 537-538.		0