Robert Claude Woods

List of Publications by Year
in descending order

89 papers	2,588 citations	186209 28 h-index	223716 46 g-index
90 all docs	90 docs citations	90 times ranked	1156 citing authors

#	Article	IF	Citations
1	Laboratory Microwave Spectrum of HCO+. Physical Review Letters, 1975, 35, 1269-1272.	2.9	228
2	A study of the accuracy of various Langmuir probe theories. Journal of Applied Physics, 1994, 76, 4488-4498.	1.1	106
3	Microwave Absorption Spectrum of the CO+Ion. Physical Review Letters, 1975, 34, 61-63.	2.9	102
4	Laboratory Microwave Spectrum and Rest Frequencies of the N2H(+) Ion. Astrophysical Journal, 1976, 205, L101.	1.6	91
5	Experimental Detection of HOC+by Microwave Spectroscopy. Physical Review Letters, 1982, 48, 1344-1348.	2.9	89
6	Laserâ€induced fluorescence measurements of transverse ion temperature in an electron cyclotron resonance plasma. Applied Physics Letters, 1990, 57, 661-663.	1.5	79
7	The laboratory microwave spectrum of the cyanide radical in its Xâ€‰2Î£+ ground state. Journal of Chemical Physics, 1999, 67, 3956.	1.2	74
8	An ab initio investigation of the spectroscopic properties of BCl, CS, CCl+, BF, CO, CF+, N2, CNâ^, and NO+. Journal of Chemical Physics, 1987, 87, 4409-4418.	1.2	72
9	Theoretical molecular structures and electric dipole moments of CCCNH, HCCNC, HCCCNH+, NCNC, and NCCNH+. Journal of Chemical Physics, 1980, 73, 4521-4527.	1.2	60
10	The molecular structure of HCO+by the microwave substitution method. Journal of Chemical Physics, 1981, 75, 4256-4260.	1.2	58
11	Complete active space selfâ€consistent field potential energy surfaces, dipole moment functions, and spectroscopic properties of O3, CF2, NOâ^2, and NF+2. Journal of Chemical Physics, 1991, 94, 414-430.	1.2	57
12	Laboratory detection of the 110â†111 submillimeter wave transition of the H2D+ ion. Journal of Chemical Physics, 1984, 81, 2514-2514.	1.2	56
13	Anabinitiostudy of the 24 electron radicals PF, SO, NCl, SF+, ClO+, SiFâ^, POâ^, NSâ^, and CClâ^in theirXâ€‰3â^ˆâ^electronic states. Journal of Chemical Physics, 1990, 93, 1876-1888.	1.2	51
14	Interstellar absorption lines toward NGC 2264 and AFGL 2591 - Abundances of H2, H3(+), and CO. Astrophysical Journal, 1990, 358, 459.	1.6	49
15	Submillimeter wave spectroscopy of XeH+and XeD+. Journal of Chemical Physics, 1991, 95, 2352-2360.	1.2	47
16	Rotational spectroscopy of pyridazine and its isotopologs from 235â€“360â€‰GHz: Equilibrium structure and vibrational satellites. Journal of Chemical Physics, 2013, 139, 224304.	1.2	45
17	A workstation based Langmuir probe system for lowâ€pressure dc plasmas. Review of Scientific Instruments, 1993, 64, 2440-2448.	0.6	44
18	The lowest rotational transition of several isotopic forms of KrD+. Journal of Chemical Physics, 1984, 81, 5413-5416.	1.2	42

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19	Ground state spectroscopic and thermodynamic properties of AlOâ^', SiNâ^', CPâ^', BSâ^', BOâ^', and CNâ^' from Mo/llerâ€"Plesset perturbation theory. Journal of Chemical Physics, 1989, 90, 7239-7250.	1.2	42
20	Molecular structure determination: Equilibrium structure of pyrimidine (m-C4H4N2) from rotational spectroscopy (r eSE) and high-level ab initio calculation (r) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 7 2020, 152, 104303.	1.2	41
21	Configuration interaction potential energy and dipole moment functions for thirteen 22 electron diatomics. Journal of Chemical Physics, 1990, 92, 6061-6068.	1.2	40
22	The microwave spectrum of SiF+. Journal of Chemical Physics, 1988, 89, 5454-5459.	1.2	37
23	Predictions of the rotational and vibrational spectra of SiF+, PO+, and NS+ by Mo/llerâ€"Plesset perturbation theory. Journal of Chemical Physics, 1988, 89, 4929-4944.	1.2	37
24	Coupled cluster calculations of the potential energy surfaces and spectroscopic constants of SiF2, PF+2, SO2, POâ^'2, and ClO+2. Journal of Chemical Physics, 1996, 104, 5547-5554.	1.2	36
25	The microwave spectrum of isotopically substituted CO+ ion. Journal of Chemical Physics, 1982, 76, 3385-3388.	1.2	31
26	Spectroscopic properties of theXâ€‰1Î£+andaâ€‰3Î electronic states of CF+, SiF+, and CCl+by multireference configuration interaction. Journal of Chemical Physics, 1990, 93, 1889-1894.	1.2	31
27	Precise equilibrium structure determination of hydrazoic acid (HN3) by millimeter-wave spectroscopy. Journal of Chemical Physics, 2015, 143, 104310.	1.2	31
28	SiO2 to Si selectivity mechanisms in high density fluorocarbon plasma etching. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1996, 14, 710.	1.6	29
29	Anharmonic force fields and spectroscopic properties of BF3 and CF3+ using the coupled cluster method. Journal of Chemical Physics, 1997, 106, 6424-6429.	1.2	29
30	An ab initio investigation of the spectroscopic properties of ClF, ArF+, SFâ^', and ClOâ^' in their ground electronic states. Journal of Chemical Physics, 1990, 92, 7412-7417.	1.2	28
31	Coupled cluster anharmonic force fields, spectroscopic constants, and vibrational energies of AlF3 and SiF3+. Journal of Chemical Physics, 1997, 107, 1717-1724.	1.2	28
32	A Microwave Spectrometer with an Internal Glow Discharge. Review of Scientific Instruments, 1973, 44, 282-288.	0.6	27
33	A microwave substitution structure for protonated nitrogen N2H+. Journal of Chemical Physics, 1981, 75, 4261-4263.	1.2	27
34	Pressure broadening of the HCO+ J=0â€"1 transition by hydrogen. Journal of Chemical Physics, 1980, 72, 1332-1336.	1.2	26
35	Coupled cluster spectroscopic properties and isomerization pathway for the cyanate/fulminate isomer pair, NCOâ^'/CNOâ^'. Journal of Chemical Physics, 1997, 106, 5123-5132.	1.2	26
36	The 130â€"370 GHz rotational spectrum of phenyl isocyanide (C6H5NC). Journal of Chemical Physics, 2019, 151, 024301.	1.2	26

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37	Effect of collisions on ion dynamics in electronâ€cyclotronâ€resonance plasmas. Journal of Applied Physics, 1992, 72, 1720-1728.	1.1	25
38	Spectroscopic constants and potential energy functions of OCCl+, ONP, ONS+, ArCN+, OCS, and NCCl using the coupled cluster method. Journal of Chemical Physics, 1997, 107, 5094-5102.	1.2	25
39	Theory of electron retardation by Langmuir probes in anisotropic plasmas. Physical Review E, 1994, 50, 2222-2238.	0.8	24
40	Attempted Isolation and Characterization of Diazirinone (N2CO). Journal of Organic Chemistry, 2010, 75, 1815-1821.	1.7	24
41	An investigation of the HBCl+â€“BClH+ system by Mo/llerâ€“Plesset perturbation theory. Journal of Chemical Physics, 1988, 88, 1074-1079.	1.2	23
42	The 103â€“360â€¯GHz rotational spectrum of benzonitrile, the first interstellar benzene derivative detected by radioastronomy. Journal of Molecular Spectroscopy, 2018, 351, 39-48.	0.4	22
43	Laboratory Rest Frequencies for N2D(+). Astrophysical Journal, 1977, 216, L85.	1.6	22
44	The microwave spectrum of CO in the aâ€‰3Î state. I. The J=0â€“1 transitions in CO, 13CO, and C18O. Journal of Chemical Physics, 1987, 87, 6423-6433.	1.2	20
45	The potential energy and dipole moment surfaces of NF2 and Oâ¯3 by complete active space selfâ€consistent field. Journal of Chemical Physics, 1990, 93, 5020-5028.	1.2	20
46	Langmuir probe measurements of electron temperature and density scaling in multidipole radio frequency plasmas. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1993, 11, 1199-1205.	0.9	20
47	Precise equilibrium structure determination of thiophene (c-C4H4S) by rotational spectroscopyâ€”Structure of a five-membered heterocycle containing a third-row atom. Journal of Chemical Physics, 2021, 154, 244310.	1.2	20
48	Microwave spectrum of tertâ€butyl mercaptan. Journal of Chemical Physics, 1974, 61, 4119-4128.	1.2	19
49	Configuration interaction spectroscopic properties of Xâ€‰2Î£+ HNC+ and Xâ€‰2Î HCN+. Journal of Chemical Physics, 1990, 93, 4946-4953.	1.2	19
50	Spectroscopic constants and dipole moment functions of the 22 electron dications SiNe++, PF++, SO++, NCl++, and CAr++. Journal of Chemical Physics, 1991, 95, 3528-3535.	1.2	18
51	Spectroscopic properties of OCS and OCCl+ by Mo/llerâ€“Plesset perturbation theory and configuration interaction. Journal of Chemical Physics, 1991, 94, 431-441.	1.2	18
52	Experimental Detection of HOC+by Microwave Spectroscopy.. Physical Review Letters, 1982, 48, 1768-1768.	2.9	17
53	The microwave spectrum of PO+: Comparison to SiF+. Journal of Chemical Physics, 1991, 94, 3504-3510.	1.2	17
54	Carbonyl Diazide, OC(N3)2: Synthesis, Purification, and IR Spectrum. Inorganic Chemistry, 2012, 51, 9846-9851.	1.9	17

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55	A coupled cluster study of the structures, spectroscopic properties, and isomerization path of NCSâ˜ and CNSâ˜. Journal of Chemical Physics, 1995, 103, 9304-9311.	1.2	15
56	Millimeter-wave spectrum of 4-cyanopyridine in its ground state and lowest-energy vibrationally excited states, Î½20 and Î½30. Journal of Molecular Spectroscopy, 2020, 369, 111274.	0.4	15
57	On the dipole moment of CO+. Journal of Chemical Physics, 1973, 58, 5837-5838.	1.2	14
58	Comment on the quadrupole coupling constants in the Aâ€‰2Î£+ states of OD and NO. Journal of Chemical Physics, 1976, 64, 5319-5320.	1.2	14
59	An analysis of the rotational ground state and lowest-energy vibrationally excited dyad of 3-cyanopyridine: Low symmetry reveals rich complexity of perturbations, couplings, and interstate transitions. Journal of Molecular Spectroscopy, 2020, 373, 111373.	0.4	14
60	Precise equilibrium structure of thiazole (c-C3H3NS) from twenty-four isotopologues. Journal of Chemical Physics, 2021, 155, 054302.	1.2	14
61	A computer controlled microwave spectrometer system. Review of Scientific Instruments, 1974, 45, 1122-1126.	0.6	13
62	Silicon oxide deposition in an electron cyclotron resonance plasma with microwave spectroscopic monitoring of SiO. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 2483-2489.	0.9	13
63	The microwave spectrum of CO in theaâ€‰3Î state. II. The submillimeter wave transitions in the normal isotope. Journal of Chemical Physics, 1988, 88, 7273-7286.	1.2	12
64	Magnetically confined inductively coupled plasma etching reactor. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 2086-2092.	0.9	12
65	A reanalysis of the molecular beam electric resonance Stark effect data for the aâ€‰3Î state of carbon monoxide. Journal of Chemical Physics, 1988, 89, 2781-2788.	1.2	11
66	The eight lowest-energy vibrational states of benzonitrile: analysis of Coriolis and Darling-Dennison couplings by millimeter-wave and far-infrared spectroscopy. Journal of Molecular Spectroscopy, 2022, 383, 111568.	0.4	11
67	Synthesis and Characterization of Cyanobutadiene Isomersâ€”Molecules of Astrochemical Significance. Journal of Organic Chemistry, 2020, 85, 5787-5798.	1.7	10
68	Rotational Spectra of Three Cyanobutadiene Isomers (C₅H₅N) of Relevance to Astrochemistry and Other Harsh Reaction Environments. Journal of the American Chemical Society, 2021, 143, 9551-9564.	6.6	10
69	Semi-Experimental Equilibrium (r_e^{SE}) and Theoretical Structures of Pyridazine (o-C₄H₄N₂). Journal of Physical Chemistry A, 2021, 125, 7976-7987.	1.1	10
70	Theoretical dipole moment functions involving the aâ€‰3Î and aâ€™â€‰3Î£+ states of carbon monoxide. Journal of Chemical Physics, 1990, 93, 5029-5036.	1.2	9
71	Synthesis, Purification, and Rotational Spectroscopy of (Cyanomethylene)Cyclopropaneâ€”An Isomer of Pyridine. Journal of Physical Chemistry A, 2021, 125, 5601-5614.	1.1	9
72	Atomic absorption spectroscopic measurements of silicon atom concentrations in electron cyclotron resonance silicon oxide deposition plasmas. Journal of Applied Physics, 1999, 85, 87-93.	1.1	8

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73	Millimeter-wave spectroscopy of carbonyl diazide, OC(N3)2. Journal of Molecular Spectroscopy, 2014, 295, 15-20.	0.4	8
74	Synthesis, Purification, and Rotational Spectroscopy of 1-Cyanocyclobutene (C₅H₅N). Journal of Physical Chemistry A, 2022, 126, 1980-1993.	1.1	8
75	Millimeter-wave spectroscopy of the chlorine isotopologues of chloropyrazine and twenty-two of their vibrationally excited states. Journal of Molecular Spectroscopy, 2019, 364, 111179.	0.4	7
76	Field Spinning Zeeman Modulation in Microwave Spectroscopy with Cosine Distribution Magnets. Review of Scientific Instruments, 1973, 44, 274-281.	0.6	6
77	A coupled cluster study of the spectroscopic properties and electric dipole moment functions of nitrous sulfide. Journal of Chemical Physics, 1996, 104, 7073-7080.	1.2	6
78	Millimeter-Wave Spectroscopy, X-ray Crystal Structure, and Quantum Chemical Studies of Diketene: Resolving Ambiguities Concerning the Structure of the Ketene Dimer. Journal of Physical Chemistry A, 2016, 120, 7753-7763.	1.1	6
79	Microwave spectroscopy of molecular ions and other transient species in electric discharges. Faraday Discussions of the Chemical Society, 1981, 71, 57.	2.2	5
80	Millimeter-wave spectroscopy of the chlorine isotopologues of 2-chloropyridine and twenty-three of their vibrationally excited states. Journal of Molecular Spectroscopy, 2019, 365, 111206.	0.4	5
81	The 130â€“360â€‰GHz rotational spectrum of syn -2-cyano-1,3-butadiene (C ₅ H) Tj ETQq1 1 0.784314 rgBT /Ov	0.8	5
82	Millimeter-wave spectroscopy of syn formyl azide (HC(O)N3) in seven vibrational states. Journal of Molecular Spectroscopy, 2017, 331, 71-81.	0.4	4
83	Microwave Studies of Molecular Ions. , 1983, , 11-16.		3
84	Rotational spectrum of anti- and gauche-4-cyano-1-butyne (C5H5N) â€“ An open-chain isomer of pyridine. Journal of Molecular Spectroscopy, 2022, 385, 111604.	0.4	3
85	Semi-experimental equilibrium (r eSE) and theoretical structures of hydrazoic acid (HN3). Journal of Chemical Physics, 2022, 157, .	1.2	3
86	Coupled cluster prediction of vibrational band intensities for SiF2 and PF2+. Journal of Chemical Physics, 1997, 106, 8283-8284.	1.2	2
87	Millimeter-wave and infrared spectroscopy of thiazole (c-C3H3NS) in its ground state and lowest-energy vibrationally excited states (Î½18, Î½17, and Î½13). Journal of Molecular Spectroscopy, 2021, 379, 111493.	0.4	2
88	A Proposed Mechanism for Forming Some Larger Molecules in Dense Interstellar Clouds. , 1983, , 511-515.		1
89	Microwave Spectroscopy of Molecular Ions in the Laboratory and in Interstellar Space. Symposium - International Astronomical Union, 1987, 120, 77-85.	0.1	0