

# Magnus Gustafsson

## List of Publications by Year in descending order

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Version: 2024-02-01

63  
papers

1,512  
citations

394421

19  
h-index

315739

38  
g-index

65  
all docs

65  
docs citations

65  
times ranked

1386  
citing authors

#	ARTICLE	IF	CITATIONS
1	Observation of Feshbach Resonances in the $F + H_2 \rightarrow HF + H$ Reaction. <i>Science</i> , 2006, 311, 1440-1443.	12.6	278
2	New section of the HITRAN database: Collision-induced absorption (CIA). <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2012, 113, 1276-1285.	2.3	268
3	Update of the HITRAN collision-induced absorption section. <i>Icarus</i> , 2019, 328, 160-175.	2.5	105
4	Recent advances in collisional effects on spectra of molecular gases and their practical consequences. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 213, 178-227.	2.3	85
5	Hydrogen Dimers in Giant-planet Infrared Spectra. <i>Astrophysical Journal, Supplement Series</i> , 2018, 235, 24.	7.7	77
6	Infrared absorption spectra by $H_2\text{-}^4\text{He}$ collisional complexes: The effect of the anisotropy of the interaction potential. <i>Journal of Chemical Physics</i> , 2000, 113, 3641-3650.	3.0	45
7	Revised ab initio models for $H_2\text{-}^4\text{H}_2$ collision-induced absorption at low temperatures. <i>Icarus</i> , 2007, 189, 544-549.	2.5	41
8	An improved potential energy surface for the $F+H_2$ reaction. <i>Chemical Physics</i> , 2005, 308, 259-266.	1.9	40
9	State to State to State Dynamics of the $D+H_2\text{-}^4\text{HD}+H$ Reaction: Control of Transition-State Pathways via Reagent Orientation. <i>Physical Review Letters</i> , 2006, 96, 093201.	7.8	35
10	Rate coefficient of CN formation through radiative association: A theoretical study of quantum effects. <i>Journal of Chemical Physics</i> , 2009, 131, 074302.	3.0	32
11	Refined theoretical study of radiative association: Cross sections and rate constants for the formation of SiN. <i>Journal of Chemical Physics</i> , 2012, 137, 104301.	3.0	29
12	Computational methods to study the formation of small molecules by radiative association. <i>International Reviews in Physical Chemistry</i> , 2015, 34, 385-428.	2.3	29
13	The state-to-state-to-state model for direct chemical reactions: Application to $D+H_2\text{-}^4\text{HD}+H$ . <i>Journal of Chemical Physics</i> , 2006, 124, 144311.	3.0	28
14	Infrared Absorption Spectra of Collisionally Interacting He and H Atoms. <i>Astrophysical Journal</i> , 2001, 546, 1168-1170.	4.5	26
15	Collision-induced absorption in the rototranslational band of dense hydrogen gas. <i>Journal of Chemical Physics</i> , 2003, 119, 12264-12270.	3.0	25
16	Roto-translational Raman spectra of pairs of hydrogen molecules from first principles. <i>Journal of Chemical Physics</i> , 2009, 130, 164314.	3.0	23
17	Formation of carbon monoxide by radiative association: a quantum dynamical study. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 414, 3547-3550.	4.4	23
18	Classical calculations of radiative association in absence of electronic transitions. <i>Journal of Chemical Physics</i> , 2013, 138, 074308.	3.0	22

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19	Infrared atmospheric emission and absorption by simple molecular complexes, from first principles. <i>Molecular Physics</i> , 2010, 108, 2265-2272.	1.7	21
20	Spin-orbit and rotational couplings in radiative association of C(3 <i>P</i> ) and N(4 <i>S</i> ) atoms. <i>Journal of Chemical Physics</i> , 2011, 135, 184302.	3.0	19
21	The rate constant for radiative association of HF: Comparing quantum and classical dynamics. <i>Journal of Chemical Physics</i> , 2014, 140, 184301.	3.0	16
22	Intracollisional interference of R-lines of HD in mixtures of deuterium hydride and helium gas. <i>Physical Review A</i> , 2001, 63, .	2.5	14
23	Radiative association rate constant for the formation of CO: the importance of the first excited $1^1\Sigma^+$ state. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 448, 2562-2565.	4.4	14
24	The HD-He complex: Interaction-induced dipole surface and infrared absorption spectra. <i>Journal of Chemical Physics</i> , 2001, 115, 5427-5432.	3.0	13
25	Far-infrared absorption by collisionally interacting nitrogen and methane molecules. <i>Journal of Chemical Physics</i> , 2004, 121, 2617.	3.0	13
26	The H <sub>2</sub> -H complex: Interaction-induced dipole surface and infrared absorption spectra. <i>Journal of Chemical Physics</i> , 2003, 118, 1667-1672.	3.0	11
27	Observing the stereodynamics of chemical reactions using randomly oriented molecular beams. <i>Journal of Chemical Physics</i> , 2006, 124, 241105.	3.0	11
28	Isotope effect in the formation of carbon monoxide by radiative association. <i>Monthly Notices of the Royal Astronomical Society</i> , 2013, 430, 946-950.	4.4	11
29	Effects of anisotropic interaction-induced properties of hydrogen-rare gas compounds on roto-translational Raman scattering spectra: Comprehensive theoretical and numerical analysis. <i>Journal of Chemical Physics</i> , 2016, 145, 034303.	3.0	11
30	Semiclassical methods for calculating radiative association rate constants for different thermodynamic conditions: Application to formation of CO, CN, and SiN. <i>Journal of Chemical Physics</i> , 2019, 150, 224301.	3.0	11
31	Intermolecular polarizabilities in H <sub>2</sub> -rare-gas mixtures (H <sub>2</sub> -He, Ne, Ar, Kr, Xe): Insight from collisional isotropic spectral properties. <i>Journal of Chemical Physics</i> , 2014, 141, 074315.	3.0	10
32	Formation of the SiP Radical through Radiative Association. <i>Journal of Physical Chemistry A</i> , 2013, 117, 8184-8188.	2.5	9
33	A surface-hopping method for semiclassical calculations of cross sections for radiative association with electronic transitions. <i>Journal of Chemical Physics</i> , 2017, 147, 094308.	3.0	9
34	Formation of CO <sup>+</sup> by radiative association II. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 492, 3794-3802.	4.4	9
35	Probing stereodynamics in reactive collisions using helicity filtering. <i>Chemical Physics Letters</i> , 2007, 434, 20-24.	2.6	8
36	Formation of CO <sup>+</sup> by radiative association. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 489, 2954-2960.	4.4	8

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37	Formation of NaCl through radiative association: Computations accounting for non-adiabatic dynamics. <i>Journal of Chemical Physics</i> , 2020, 153, 114305.	3.0	8
38	Infrared absorption by H <sub>2</sub> ~Ar collisional complexes and the anisotropy of the intermolecular interaction potential. <i>Physical Review A</i> , 2006, 74, .	2.5	7
39	Reaction rate constant for radiative association of CF <sup>+</sup> . <i>Journal of Chemical Physics</i> , 2016, 144, 044302.	3.0	7
40	Formation of the NH molecule and its isotopologues through radiative association. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, , .	4.4	7
41	Collision-induced absorption at wavelengths near 5~µm by dense hydrogen gas. <i>Journal of Chemical Physics</i> , 2009, 131, 181102.	3.0	6
42	The rate constant for formation of HCl through radiative association. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 470, 3068-3070.	4.4	6
43	Formation of the Hydroxyl Radical by Radiative Association. <i>Journal of Physical Chemistry A</i> , 2015, 119, 12263-12269.	2.5	5
44	Multi-property isotropic intermolecular potentials and predicted spectral lineshapes of collision-induced absorption (CIA), collision-induced light scattering (CILS) and collision-induced hyper-Rayleigh scattering (CIHR) for H <sub>2</sub> Ne, ~Kr and ~Xe. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 209, 232-242.	2.3	5
45	Molecular dynamics calculations of collision-induced absorption in a gas mixture of neon and krypton. <i>Journal of Chemical Physics</i> , 2020, 152, 234302.	3.0	5
46	The anisotropic polarizability of pairs of hydrogen molecules and the depolarized collision-induced roto-translational Raman light scattering spectra. <i>Journal of Computational Methods in Sciences and Engineering</i> , 2010, 10, 367-399.	0.2	4
47	Molecular dynamics simulations of collision-induced absorption: Implementation in LAMMPS. <i>Journal of Physics: Conference Series</i> , 2017, 810, 012031.	0.4	4
48	Collision-induced absorption in Ar~Kr gas mixtures: A molecular dynamics study with new potential and dipole data. <i>Journal of Chemical Physics</i> , 2019, 151, 144303.	3.0	4
49	Formation of the BeH <sup>+</sup> and BeD <sup>+</sup> Molecules in Be <sup>+</sup> + H/D Collisions Through Radiative Association. <i>Frontiers in Astronomy and Space Sciences</i> , 2021, 8, .	2.8	4
50	Collision-induced dipoles and polarizabilities of pairs of hydrogen molecules: Ab initio calculations and results from spherical tensor analysis. , 2012, , .		2
51	Calculated isotropic Raman spectra from interacting H <sub>2</sub> -rare-gas pairs. <i>Journal of Physics: Conference Series</i> , 2014, 548, 012027.	0.4	2
52	Direct method for MD simulations of collision-induced absorption: Application to an Ar~Xe gas mixture. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2021, 276, 107926.	2.3	2
53	Far Wing Asymmetry of Rotational Raman Lines in Hydrogen. <i>International Journal of Spectroscopy</i> , 2010, 2010, 1-5.	1.6	1
54	The emission spectrum due to molecule formation through radiative association. <i>Journal of Physics: Conference Series</i> , 2014, 548, 012003.	0.4	1

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55	Hydrogen dimer features in low temperature collision-induced spectra. Journal of Physics: Conference Series, 2017, 810, 012017.	0.4	1
56	Contribution from dimers to the collision-induced absorption spectra in an Ar-Kr gas mixture. Journal of Physics: Conference Series, 2019, 1289, 012021.	0.4	1
57	Infrared absorption spectra of H <sub>2</sub> -He collisional complexes: The effect of the anisotropy of the interaction potential. AIP Conference Proceedings, 2001, , .	0.4	0
58	Effects of the Anisotropy of the Intermolecular Potential on the Collision-induced Spectra of H <sub>2</sub> -H, H <sub>2</sub> -He, H <sub>2</sub> -H <sub>2</sub> , and HD-He. AIP Conference Proceedings, 2002, , .	0.4	0
59	Diatom-diatom interactions with light: Applications and line shape theoretical aspects. , 2008, , .		0
60	Collision-Induced Absorption by Supermolecular Complexes from a New Potential Energy and Induced Dipole Surface, Suited for Calculations up to Thousands of Kelvin. , 2010, , .		0
61	Calculation of interaction-induced spectra using complex absorbing potentials. , 2010, , .		0
62	Career Achievements of Professor Lothar Frommhold. , 2010, , .		0
63	A computational study of hydrogen dimers in giant-planet infrared spectra. Journal of Physics: Conference Series, 2019, 1289, 012010.	0.4	0