

Bret Jackson

List of Publications by Year in descending order

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Version: 2024-02-01

70
papers

3,680
citations

109264

35
h-index

128225

60
g-index

71
all docs

71
docs citations

71
times ranked

1419
citing authors

#	ARTICLE	IF	CITATIONS
1	First-principles study of the structural and energetic properties of H atoms on a graphite (0001) surface. <i>Surface Science</i> , 2002, 496, 318-330.	0.8	301
2	Adsorption of hydrogen and deuterium atoms on the (0001) graphite surface. <i>Journal of Chemical Physics</i> , 2002, 117, 8486-8492.	1.2	249
3	Methane dissociation and adsorption on Ni(111), Pt(111), Ni(100), Pt(100), and Pt(110)-(1 \times 1)-2): Energetic study. <i>Journal of Chemical Physics</i> , 2010, 132, 054705.	1.2	156
4	Methane Dissociation on Ni(111): A New Understanding of the Lattice Effect. <i>Physical Review Letters</i> , 2009, 103, 253201.	2.9	136
5	Methane dissociation on Ni(111) and Pt(111): Energetic and dynamical studies. <i>Journal of Chemical Physics</i> , 2009, 130, 054701.	1.2	124
6	Methane Dissociation on Ni(111): The Role of Lattice Reconstruction. <i>Physical Review Letters</i> , 2007, 98, 173003.	2.9	122
7	The temperature dependence of methane dissociation on Ni(111) and Pt(111): Mixed quantum-classical studies of the lattice response. <i>Journal of Chemical Physics</i> , 2010, 132, 134702.	1.2	122
8	Ab Initio Molecular Dynamics Calculations versus Quantum-State-Resolved Experiments on CHD ₃ + Pt(111): New Insights into a Prototypical Gas-Surface Reaction. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 1294-1299.	2.1	120
9	The dissociative chemisorption of methane on Ni(100): Reaction path description of mode-selective chemistry. <i>Journal of Chemical Physics</i> , 2011, 135, 114701.	1.2	113
10	Flat surface study of the Eley-Rideal dynamics of recombinative desorption of hydrogen on a metal surface. <i>Journal of Chemical Physics</i> , 1995, 102, 1078-1093.	1.2	109
11	Dissociative Chemisorption of Methane on Ni and Pt Surfaces: Mode-Specific Chemistry and the Effects of Lattice Motion. <i>Journal of Physical Chemistry A</i> , 2014, 118, 9615-9631.	1.1	106
12	The dissociative chemisorption of methane on Ni(111): The effects of molecular vibration and lattice motion. <i>Journal of Chemical Physics</i> , 2013, 138, 174705.	1.2	95
13	Dissociative chemisorption of CH ₄ on Ni: The role of molecular orientation. <i>Journal of Chemical Physics</i> , 1998, 108, 3722-3730.	1.2	88
14	Dissociative chemisorption of methane on metal surfaces: Tests of dynamical assumptions using quantum models and <i>ab initio</i> molecular dynamics. <i>Journal of Chemical Physics</i> , 2014, 141, 054102.	1.2	80
15	Surface Reaction Barriometry: Methane Dissociation on Flat and Stepped Transition-Metal Surfaces. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 4177-4182.	2.1	75
16	Effects of Lattice Motion on Dissociative Chemisorption: Toward a Rigorous Comparison of Theory with Molecular Beam Experiments. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 4576-4584.	2.1	74
17	Mixed quantum-classical studies of H ₂ dissociation on metals: Dependence upon molecular geometry and dimensionality. <i>Journal of Chemical Physics</i> , 1991, 94, 5715-5722.	1.2	70
18	Formation and dynamics of hot-precursor hydrogen atoms on metal surfaces: Trajectory simulations and stochastic models. <i>Journal of Chemical Physics</i> , 1998, 109, 2856-2864.	1.2	63

#	ARTICLE	IF	CITATIONS
19	Methane dissociation on Ni(111): The effects of lattice motion and relaxation on reactivity. Journal of Chemical Physics, 2007, 127, 224702.	1.2	62
20	Vibrational mode-selective chemistry: Methane dissociation on Ni(100). Physical Review B, 2010, 81, .	1.1	59
21	Quantum studies of H atom trapping on a graphite surface. Journal of Chemical Physics, 2005, 122, 014709.	1.2	56
22	The sticking of H and D atoms on a graphite (0001) surface: The effects of coverage and energy dissipation. Journal of Chemical Physics, 2008, 128, 084702.	1.2	56
23	Kinetic model for Eley-Rideal and hot atom reactions between H atoms on metal surfaces. Journal of Chemical Physics, 2002, 116, 2599-2608.	1.2	50
24	The dissociative chemisorption of water on Ni(111): Mode- and bond-selective chemistry on metal surfaces. Journal of Chemical Physics, 2015, 142, 234705.	1.2	50
25	Methane dissociation on the steps and terraces of Pt(211) resolved by quantum state and impact site. Journal of Chemical Physics, 2018, 148, 014701.	1.2	50
26	Quantum and classical studies of the dissociation dynamics of H ₂ and its isotopes on Ni. Journal of Chemical Physics, 1987, 87, 5497-5503.	1.2	49
27	Time dependent quantum mechanical theory of gas-surface energy transfer. Journal of Chemical Physics, 1988, 88, 1383-1393.	1.2	47
28	Quantum state-resolved CH ₄ dissociation on Pt(111): coverage dependent barrier heights from experiment and density functional theory. Physical Chemistry Chemical Physics, 2013, 15, 20526.	1.3	47
29	The Location of Adsorbed Hydrogen in Graphite Nanostructures. Journal of the American Chemical Society, 2004, 126, 13095-13099.	6.6	45
30	The dynamics of H ₂ dissociation on Cu and Ni surfaces. Mixed quantum-classical studies with all degrees of freedom. Journal of Chemical Physics, 1993, 98, 5800-5808.	1.2	44
31	The dissociative chemisorption of methane on Ni(100) and Ni(111): Classical and quantum studies based on the reaction path Hamiltonian. Journal of Chemical Physics, 2013, 139, 194701.	1.2	44
32	Mean field approach to molecule-surface scattering at finite temperature: Multiphonon theory. Journal of Chemical Physics, 1989, 90, 140-150.	1.2	39
33	Eley-Rideal and hot atom reactions between hydrogen atoms on Ni(100): Electronic structure and quasiclassical studies. Journal of Chemical Physics, 2001, 115, 9018-9027.	1.2	39
34	Mean field approach to molecule-surface scattering at finite temperature: One phonon theory. Journal of Chemical Physics, 1988, 89, 2473-2481.	1.2	38
35	Dissociative Chemisorption of Methane on Pt(110)-(1 $\bar{1}$ -2): Effects of Lattice Motion on Reactions at Step Edges. Journal of Physical Chemistry A, 2013, 117, 8651-8659.	1.1	36
36	Dissociative adsorption of H ₂ on Cu(110): A mixed quantum-classical study. Journal of Chemical Physics, 1994, 100, 5956-5964.	1.2	34

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37	Mode-selective chemistry on metal surfaces: The dissociative chemisorption of CH ₄ on Pt(111). <i>Journal of Chemical Physics</i> , 2016, 144, 184709.	1.2	33
38	Mode- and Bond-Selective Chemistry on Metal Surfaces: The Dissociative Chemisorption of CHD ₃ on Ni(111). <i>Journal of Physical Chemistry C</i> , 2015, 119, 14769-14779.	1.5	32
39	Close-coupling wavepacket study of He and Ne sticking on metal surfaces. <i>Journal of Chemical Physics</i> , 1992, 97, 6792-6801.	1.2	31
40	A finite temperature theory of rotationally inelastic diffraction: H ₂ , HD, and D ₂ on Cu(100). <i>Journal of Chemical Physics</i> , 1989, 91, 4985-4993.	1.2	30
41	The Effects of Lattice Motion on Eley-Rideal and Hot Atom Reactions: A Quasiclassical Studies of Hydrogen Recombination on Ni(100). <i>Journal of Physical Chemistry B</i> , 2002, 106, 8342-8348.	1.2	30
42	Sticking and desorption of hydrogen on graphite: A comparative study of different models. <i>Journal of Chemical Physics</i> , 2011, 134, 114705.	1.2	30
43	Reduced density matrix description of gas-solids interactions: Scattering, trapping, and desorption. <i>Journal of Chemical Physics</i> , 1998, 108, 1131-1139.	1.2	28
44	Classical Studies of H Atom Trapping on a Graphite Surface. <i>Journal of Physical Chemistry B</i> , 2006, 110, 18811-18817.	1.2	28
45	Water dissociation on Ni(100), Ni(110), and Ni(111) surfaces: Reaction path approach to mode selectivity. <i>Journal of Chemical Physics</i> , 2017, 146, 074705.	1.2	28
46	A semiclassical study of gas-solids energy transfer: He, Ne, and Ar on metal surfaces. <i>Journal of Chemical Physics</i> , 1990, 92, 1458-1467.	1.2	25
47	Substrate Vibrations as Promoters of Chemical Reactivity on Metal Surfaces. <i>Journal of Physical Chemistry A</i> , 2015, 119, 12434-12441.	1.1	25
48	Quantum studies of light particle trapping, sticking, and desorption on metal and graphite surfaces. <i>Journal of Chemical Physics</i> , 2008, 128, 114704.	1.2	24
49	A semiclassical study of He, Ne, and Ar sticking on metal surfaces. <i>Journal of Chemical Physics</i> , 1991, 94, 5126-5134.	1.2	23
50	The dissociative chemisorption of CO ₂ on Ni(100): A quantum dynamics study. <i>Journal of Chemical Physics</i> , 2017, 146, 074704.	1.2	23
51	Direct and trapping-mediated pathways to dissociative chemisorption: CH ₄ dissociation on Ir(111) with step defects. <i>Journal of Chemical Physics</i> , 2020, 153, 034704.	1.2	23
52	Sticking of Hydrogen on Supported and Suspended Graphene at Low Temperature. <i>Physical Review Letters</i> , 2011, 107, 236102.	2.9	22
53	Energetics of Adsorbed Methyl and Methyl Iodide on Ni(111) by Calorimetry: Comparison to Pt(111) and Implications for Catalysis. <i>ACS Catalysis</i> , 2017, 7, 1286-1294.	5.5	20
54	The effect of impact angle and corrugation on gas-solids surface energy transfer and sticking: A semiclassical study. <i>Journal of Chemical Physics</i> , 1991, 94, 787-800.	1.2	19

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55	Quantum dynamics of hydrogen atoms on graphene. II. Sticking. Journal of Chemical Physics, 2015, 143, 124704.	1.2	18
56	Quantum dynamics of hydrogen atoms on graphene. I. System-bath modeling. Journal of Chemical Physics, 2015, 143, 124703.	1.2	18
57	Methane dissociation on stepped Ni surfaces resolved by impact site, collision energy, vibrational state, and lattice distortion. Journal of Chemical Physics, 2019, 150, 204703.	1.2	14
58	A critical comparison of time dependent models for gas-surface sticking. Journal of Chemical Physics, 1993, 98, 9905-9915.	1.2	13
59	Quantum dynamics studies of the dissociative chemisorption of CH ₄ on the steps and terraces of Ni(211). Journal of Chemical Physics, 2018, 149, 244704.	1.2	13
60	Spectral grid study of ro-vibrational coupling in hydrogen-metal scattering. The Journal of Physical Chemistry, 1989, 93, 7699-7702.	2.9	12
61	Multiconfiguration self-consistent field models for gas-surface scattering. Journal of Chemical Physics, 1993, 99, 8299-8307.	1.2	12
62	State-to-state methane-surface scattering as a probe of catalytic activity. Physical Review Research, 2020, 2, .	1.3	11
63	Reduced density matrix quantum approach for particle trapping and sticking on corrugated moving surfaces. Journal of Chemical Physics, 2006, 125, 224703.	1.2	10
64	The Effects of Lattice Motion on Gas-Surface Reactions. Springer Series in Surface Sciences, 2013, , 213-237.	0.3	9
65	Lepetit and Jackson Reply:. Physical Review Letters, 2014, 113, 069602.	2.9	6
66	Quantum-state-resolved reactivity of overtone excited CH ₄ on Ni(111): Comparing experiment and theory. Journal of Chemical Physics, 2017, 146, 054701.	1.2	6
67	Quantum studies of methane-metal inelastic diffraction and trapping: The variation with molecular orientation and phonon coupling. Chemical Physics, 2022, 559, 111516.	0.9	6
68	The trapping of methane on Ir(111): A first-principles quantum study. Journal of Chemical Physics, 2021, 155, 044705.	1.2	5
69	Diabatic approach to the close-coupling wave packet method in reactive scattering. Journal of Chemical Physics, 1996, 105, 8639-8652.	1.2	2
70	METHODS FOR GAS-SURFACE SCATTERING. , 1998, , 73-100.		0