Bret Jackson

List of Publications by Year
in descending order

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70	3,680	109264	128225
papers	citations	35 h-index	60 g-index

71	71	71	1419
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	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
2	The trapping of methane on Ir(111): A first-principles quantum study. Journal of Chemical Physics, 2021, 155, 044705.	1.2	5
3	Direct and trapping-mediated pathways to dissociative chemisorption: CH4 dissociation on Ir(111) with step defects. Journal of Chemical Physics, 2020, 153, 034704.	1.2	23
4	State-to-state methane-surface scattering as a probe of catalytic activity. Physical Review Research, 2020, 2, .	1.3	11
5	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
6	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
7	Quantum dynamics studies of the dissociative chemisorption of CH4 on the steps and terraces of Ni(211). Journal of Chemical Physics, 2018, 149, 244704.	1.2	13
8	Quantum-state-resolved reactivity of overtone excited CH4 on Ni(111): Comparing experiment and theory. Journal of Chemical Physics, 2017, 146, 054701.	1.2	6
9	Water dissociation on Ni(100), Ni(110), and Ni(111) surfaces: Reaction path approach to mode selectivity. Journal of Chemical Physics, 2017, 146, 074705.	1.2	28
10	The dissociative chemisorption of CO2 on Ni(100): A quantum dynamics study. Journal of Chemical Physics, 2017, 146, 074704.	1.2	23
11	Energetics of Adsorbed Methyl and Methyl Iodide on Ni(111) by Calorimetry: Comparison to Pt(111) and Implications for Catalysis. ACS Catalysis, 2017, 7, 1286-1294.	5.5	20
12	Surface Reaction Barriometry: Methane Dissociation on Flat and Stepped Transition-Metal Surfaces. Journal of Physical Chemistry Letters, 2017, 8, 4177-4182.	2.1	75
13	Mode-selective chemistry on metal surfaces: The dissociative chemisorption of CH4 on Pt(111). Journal of Chemical Physics, 2016, 144, 184709.	1.2	33
14	Effects of Lattice Motion on Dissociative Chemisorption: Toward a Rigorous Comparison of Theory with Molecular Beam Experiments. Journal of Physical Chemistry Letters, 2016, 7, 4576-4584.	2.1	74
15	Quantum dynamics of hydrogen atoms on graphene. II. Sticking. Journal of Chemical Physics, 2015, 143, 124704.	1.2	18
16	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
17	Quantum dynamics of hydrogen atoms on graphene. I. System-bath modeling. Journal of Chemical Physics, 2015, 143, 124703.	1.2	18
18	Mode- and Bond-Selective Chemistry on Metal Surfaces: The Dissociative Chemisorption of CHD₃ on Ni(111). Journal of Physical Chemistry C, 2015, 119, 14769-14779.	1.5	32

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19	Substrate Vibrations as Promoters of Chemical Reactivity on Metal Surfaces. Journal of Physical Chemistry A, 2015, 119, 12434-12441.	1.1	25
20	Lepetit and Jackson Reply:. Physical Review Letters, 2014, 113, 069602.	2.9	6
21	Dissociative chemisorption of methane on metal surfaces: Tests of dynamical assumptions using quantum models and ab initio molecular dynamics. Journal of Chemical Physics, 2014, 141, 054102.	1.2	80
22	Dissociative Chemisorption of Methane on Ni and Pt Surfaces: Mode-Specific Chemistry and the Effects of Lattice Motion. Journal of Physical Chemistry A, 2014, 118, 9615-9631.	1.1	106
23	Ab Initio Molecular Dynamics Calculations versus Quantum-State-Resolved Experiments on CHD₃ + Pt(111): New Insights into a Prototypical Gasâ€“Surface Reaction. Journal of Physical Chemistry Letters, 2014, 5, 1294-1299.	2.1	120
24	Quantum state-resolved CH4 dissociation on Pt(111): coverage dependent barrier heights from experiment and density functional theory. Physical Chemistry Chemical Physics, 2013, 15, 20526.	1.3	47
25	The dissociative chemisorption of methane on Ni(111): The effects of molecular vibration and lattice motion. Journal of Chemical Physics, 2013, 138, 174705.	1.2	95
26	Dissociative Chemisorption of Methane on Pt(110)-(1Ã—2): Effects of Lattice Motion on Reactions at Step Edges. Journal of Physical Chemistry A, 2013, 117, 8651-8659.	1.1	36
27	The Effects of Lattice Motion on Gas-Surface Reactions. Springer Series in Surface Sciences, 2013, , 213-237.	0.3	9
28	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
29	Sticking of Hydrogen on Supported and Suspended Graphene at Low Temperature. Physical Review Letters, 2011, 107, 236102.	2.9	22
30	Sticking and desorption of hydrogen on graphite: A comparative study of different models. Journal of Chemical Physics, 2011, 134, 114705.	1.2	30
31	The dissociative chemisorption of methane on Ni(100): Reaction path description of mode-selective chemistry. Journal of Chemical Physics, 2011, 135, 114701.	1.2	113
32	The temperature dependence of methane dissociation on Ni(111) and Pt(111): Mixed quantum-classical studies of the lattice response. Journal of Chemical Physics, 2010, 132, 134702.	1.2	122
33	Methane dissociation and adsorption on Ni(111), Pt(111), Ni(100), Pt(100), and Pt(110)-(1Ã—2): Energetic study. Journal of Chemical Physics, 2010, 132, 054705.	1.2	156
34	Vibrational mode-selective chemistry: Methane dissociation on Ni(100). Physical Review B, 2010, 81, .	1.1	59
35	Methane Dissociation on Ni(111): A New Understanding of the Lattice Effect. Physical Review Letters, 2009, 103, 253201.	2.9	136
36	Methane dissociation on Ni(111) and Pt(111): Energetic and dynamical studies. Journal of Chemical Physics, 2009, 130, 054701.	1.2	124

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37	Quantum studies of light particle trapping, sticking, and desorption on metal and graphite surfaces. Journal of Chemical Physics, 2008, 128, 114704.	1.2	24
38	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
39	Methane dissociation on Ni(111): The effects of lattice motion and relaxation on reactivity. Journal of Chemical Physics, 2007, 127, 224702.	1.2	62
40	Methane Dissociation on Ni(111): The Role of Lattice Reconstruction. Physical Review Letters, 2007, 98, 173003.	2.9	122
41	Classical Studies of H Atom Trapping on a Graphite Surfaceâ€. Journal of Physical Chemistry B, 2006, 110, 18811-18817.	1.2	28
42	Reduced density matrix quantum approach for particle trapping and sticking on corrugated moving surfaces. Journal of Chemical Physics, 2006, 125, 224703.	1.2	10
43	Quantum studies of H atom trapping on a graphite surface. Journal of Chemical Physics, 2005, 122, 014709.	1.2	56
44	The Location of Adsorbed Hydrogen in Graphite Nanostructures. Journal of the American Chemical Society, 2004, 126, 13095-13099.	6.6	45
45	Adsorption of hydrogen and deuterium atoms on the (0001) graphite surface. Journal of Chemical Physics, 2002, 117, 8486-8492.	1.2	249
46	The Effects of Lattice Motion on Eley-Rideal and Hot Atom Reactions:Â Quasiclassical Studies of Hydrogen Recombination on Ni(100)â€. Journal of Physical Chemistry B, 2002, 106, 8342-8348.	1.2	30
47	Kinetic model for Eleyâ€“Rideal and hot atom reactions between H atoms on metal surfaces. Journal of Chemical Physics, 2002, 116, 2599-2608.	1.2	50
48	First-principles study of the structural and energetic properties of H atoms on a graphite () surface. Surface Science, 2002, 496, 318-330.	0.8	301
49	Eleyâ€“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
50	Dissociative chemisorption of CH4 on Ni: The role of molecular orientation. Journal of Chemical Physics, 1998, 108, 3722-3730.	1.2	88
51	Formation and dynamics of hot-precursor hydrogen atoms on metal surfaces: Trajectory simulations and stochastic models. Journal of Chemical Physics, 1998, 109, 2856-2864.	1.2	63
52	Reduced density matrix description of gasâ€“solid interactions: Scattering, trapping, and desorption. Journal of Chemical Physics, 1998, 108, 1131-1139.	1.2	28
53	METHODS FOR GAS-SURFACE SCATTERING. , 1998, , 73-100.		0
54	Diabatic approach to the closeâ€coupling wave packet method in reactive scattering. Journal of Chemical Physics, 1996, 105, 8639-8652.	1.2	2

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55	Flat surface study of the Eleyâ€“Rideal dynamics of recombinative desorption of hydrogen on a metal surface. Journal of Chemical Physics, 1995, 102, 1078-1093.	1.2	109
56	Dissociative adsorption of H2 on Cu(110): A mixed quantumâ€classical study. Journal of Chemical Physics, 1994, 100, 5956-5964.	1.2	34
57	The dynamics of H2 dissociation on Cu and Ni surfaces. Mixed quantumâ€classical studies with all degrees of freedom. Journal of Chemical Physics, 1993, 98, 5800-5808.	1.2	44
58	Multiconfiguration selfâ€consistent field models for gasâ€“surface scattering. Journal of Chemical Physics, 1993, 99, 8299-8307.	1.2	12
59	A critical comparison of time dependent models for gasâ€“surface sticking. Journal of Chemical Physics, 1993, 98, 9905-9915.	1.2	13
60	Closeâ€coupling waveâ€packet study of He and Ne sticking on metal surfaces. Journal of Chemical Physics, 1992, 97, 6792-6801.	1.2	31
61	The effect of impact angle and corrugation on gasâ€“surface energy transfer and sticking: A semiclassical study. Journal of Chemical Physics, 1991, 94, 787-800.	1.2	19
62	Mixed quantumâ€classical studies of H2 dissociation on metals: Dependence upon molecular geometry and dimensionality. Journal of Chemical Physics, 1991, 94, 5715-5722.	1.2	70
63	A semiclassical study of He, Ne, and Ar sticking on metal surfaces. Journal of Chemical Physics, 1991, 94, 5126-5134.	1.2	23
64	A semiclassical study of gasâ€“solid energy transfer: He, Ne, and Ar on metal surfaces. Journal of Chemical Physics, 1990, 92, 1458-1467.	1.2	25
65	Mean field approach to moleculeâ€“surface scattering at finite temperature: Multiphonon theory. Journal of Chemical Physics, 1989, 90, 140-150.	1.2	39
66	A finite temperature theory of rotationally inelastic diffraction: H2, HD, and D2 on Cu(100). Journal of Chemical Physics, 1989, 91, 4985-4993.	1.2	30
67	Spectral grid study of ro-vibrational coupling in hydrogen-metal scattering. The Journal of Physical Chemistry, 1989, 93, 7699-7702.	2.9	12
68	Time dependent quantum mechanical theory of gasâ€“surface energy transfer. Journal of Chemical Physics, 1988, 88, 1383-1393.	1.2	47
69	Mean field approach to moleculeâ€“surface scattering at finite temperature: One phonon theory. Journal of Chemical Physics, 1988, 89, 2473-2481.	1.2	38
70	Quantum and classical studies of the dissociation dynamics of H2 and its isotopes on Ni. Journal of Chemical Physics, 1987, 87, 5497-5503.	1.2	49