James Engstrom

List of Publications by Year
in descending order

99 papers	2,648 citations	147566 31 h-index	214527 47 g-index
100 all docs	100 docs citations	100 times ranked	2336 citing authors

#	Article	IF	Citations
1	Controlling Nanocrystal Superlattice Symmetry and Shape-Anisotropic Interactions through Variable Ligand Surface Coverage. Journal of the American Chemical Society, 2011, 133, 3131-3138.	6.6	198
2	The reaction of atomic oxygen with Si(100) and Si(111). Surface Science, 1991, 256, 317-343.	0.8	117
3	The chemisorption of hydrogen on the (111) and (110)â€(1Ã—2) surfaces of iridium and platinum. Journal of Chemical Physics, 1987, 87, 3104-3119.	1.2	115
4	The reaction of atomic oxygen with Si(100) and Si(111). Surface Science, 1992, 268, 238-264.	0.8	91
5	Hydrogenolysis of ethane, propane, n-butane, and neopentane on the (111) and (110)-(1.times.2) surfaces of iridium. Journal of the American Chemical Society, 1988, 110, 8305-8319.	6.6	83
6	The adsorption and reaction of fluorine on the Si(100) surface. Surface Science, 1989, 215, 437-500.	0.8	82
7	Atomic versus molecular reactivity at the gas-solid interface: The adsorption and reaction of atomic oxygen on the Si(100) surface. Physical Review B, 1990, 41, 1038-1041.	1.1	79
8	A surface modification strategy on silicon nitride for developing biosensors. Analytical Biochemistry, 2005, 343, 322-328.	1.1	79
9	Adsorption and reaction of n-alkanes on the platinum(110)-(1 .times. 2) surface. The Journal of Physical Chemistry, 1985, 89, 2497-2502.	2.9	64
10	The Reaction of Tetrakis(dimethylamido)titanium with Self-Assembled Alkyltrichlorosilane Monolayers Possessing â^'OH, â^'NH2, and â^'CH3Terminal Groups. Journal of the American Chemical Society, 2005, 127, 6300-6310.	6.6	60
11	Post-deposition reorganization of pentacene films deposited on low-energy surfaces. Journal of Materials Chemistry, 2009, 19, 5580.	6.7	60
12	Supersonic molecular beam scattering as a probe of thin film deposition processes. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 2651-2664.	0.9	57
13	The reaction of saturated and unsaturated hydrocarbons with the (110)â€(1Ã—2) and (111) surfaces of iridium. Journal of Chemical Physics, 1984, 80, 508-517.	1.2	56
14	A kinetic Monte Carlo study of the growth of Si on Si(100) at varying angles of incident deposition. Surface Science, 1998, 401, 112-123.	0.8	54
15	Dynamics of the dissociative adsorption of disilane on Si(100): Energy scaling and the effect of corrugation. Journal of Chemical Physics, 1993, 99, 4051-4054.	1.2	45
16	Dissociation and pyrolysis of Si2H6 on Si surfaces: The influence of surface structure and adlayer composition. Journal of Chemical Physics, 1995, 103, 1691-1701.	1.2	45
17	Dissociative adsorption of Si2H6 on silicon at hyperthermal energies: The influence of surface structure. Applied Physics Letters, 1993, 63, 1821-1823.	1.5	42
18	Quantitative modeling ofin situx-ray reflectivity during organic molecule thin film growth. Physical Review B, 2011, 84, .	1.1	42

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19	Hydrogenolysis of n-butane over the (111) and (110)-(1.times.2) surfaces of iridium: a direct correlation between catalytic selectivity and surface structure. Journal of the American Chemical Society, 1986, 108, 4653-4655.	6.6	41
20	Reactive atomâ€“surface scattering: The adsorption and reaction of atomic oxygen on the Si(100) surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1989, 7, 1837-1840.	0.9	38
21	Nucleation and Growth of Perfluoropentacene on Self-Assembled Monolayers: Significant Changes in Island Density and Shape with Surface Termination. Journal of Physical Chemistry C, 2010, 114, 20120-20129.	1.5	38
22	Effects of Interfacial Organic Layers on Nucleation, Growth, and Morphological Evolution in Atomic Layer Thin Film Deposition. Journal of Physical Chemistry C, 2007, 111, 11045-11058.	1.5	36
23	Translationally activated dissociative chemisorption of SiH4 on the Si(100) and Si(111) surfaces. Chemical Physics Letters, 1994, 229, 401-407.	1.2	35
24	Combinatorial materials science: Paradigm shift in materials discovery and optimization. AICHE Journal, 2000, 46, 2-5.	1.8	35
25	Analysis of a toluene stripping process: a comparison between a microfabricated stripping column and a conventional packed tower. Chemical Engineering Journal, 2004, 101, 49-56.	6.6	35
26	Thermal decomposition of a silicon-fluoride adlayer: Evidence for spatially inhomogeneous removal of a single monolayer of the silicon substrate. Physical Review B, 1988, 37, 6563-6566.	1.1	33
27	The role of surface corrugation in direct translationally activated dissociative adsorption. Journal of Chemical Physics, 1994, 101, 5329-5342.	1.2	33
28	Thermal and plasmaâ€assisted nitridation of GaAs(100) using NH3. Applied Physics Letters, 1995, 67, 542-544.	1.5	33
29	Integration of Self-Assembled Redox Molecules in Flash Memory Devices. IEEE Transactions on Electron Devices, 2011, 58, 826-834.	1.6	33
30	Nucleation of pentacene on silicon dioxide at hyperthermal energies. Applied Physics Letters, 2005, 87, 033110.	1.5	31
31	Real time monitoring of pentacene growth on SiO2 from a supersonic source. Applied Physics Letters, 2008, 92, 253304.	1.5	31
32	Nucleation delay in atomic layer deposition on a thin organic layer and the role of reaction thermochemistry. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2012, 30, .	0.9	31
33	Design and construction of a digital temperature controller for use in surface studies. Review of Scientific Instruments, 1984, 55, 404-409.	0.6	29
34	Coverage dependent adsorption dynamics in hyperthermal organic thin film growth. Journal of Chemical Physics, 2009, 130, 124701.	1.2	29
35	Covalent Attachment of a Transition Metal Coordination Complex to Functionalized Oligo(phenylene-ethynylene) Self-Assembled Monolayers. Journal of the American Chemical Society, 2005, 127, 14299-14309.	6.6	28
36	Ab Initio Calculations of the Reaction Mechanisms for Metalâ^'Nitride Deposition from Organo-Metallic Precursors onto Functionalized Self-Assembled Monolayers. Journal of the American Chemical Society, 2006, 128, 836-847.	6.6	28

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37	Reaction of cyclopropane, methylcyclopropane and propylene with hydrogen on the (111) and (110)-(1) Tj ETQq1 1 0.784314 rgBT /Ov	2.9	27
38	Nucleation of pentacene thin films on silicon dioxide modified with hexamethyldisilazane. Applied Physics Letters, 2006, 88, 143125.	1.5	27
39	Study of thin film deposition processes employing variable kinetic energy, highly collimated neutral molecular beams. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 3423-3433.	0.9	25
40	Observation from Scanning Tunneling Microscopy of a Striped Phase for Octanethiol Adsorbed on Au(111) from Solution. Langmuir, 2008, 24, 9937-9940.	1.6	25
41	Analysis of gas-surface reactions by surface temperature modulation: Experimental applications to the adsorption and oxidation of carbon monoxide on the Pt(110)-(1 Ã— 2) surface. Surface Science, 1988, 201, 145-170.	0.8	24
42	Gasâ€”surface reactivity in mixed-crystal systems: the reaction of GeH4 and Ge2H6 on Si surfaces. Surface Science, 1997, 393, 205-221.	0.8	24
43	Effect of PH3 on the dissociative chemisorption of SiH4 and Si2H6 on Si(100): Implications on the growth of in situ doped Si thin films. Applied Physics Letters, 1995, 66, 1909-1911.	1.5	21
44	Supersonic molecular beam studies of the dissociative chemisorption of GeH4 and Ge2H6 on the Ge(100) and Ge(111) surfaces. Journal of Chemical Physics, 1996, 105, 7140-7151.	1.2	21
45	Effects of interfacial organic layers on thin film nucleation in atomic layer deposition. Applied Physics Letters, 2006, 89, 164108.	1.5	21
46	Effect of substrate composition on atomic layer deposition using self-assembled monolayers as blocking layers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2016, 34, .	0.9	21
47	A growth method for creating arrays of atomically flat mesas on silicon. Applied Physics Letters, 2001, 78, 1349-1351.	1.5	20
48	Three-dimensional imaging of pore structures inside low-Î¤ dielectrics. Applied Physics Letters, 2010, 96, .	1.5	19
49	Thin Film Growth of Pentacene on Polymeric Dielectrics: Unexpected Changes in the Evolution of Surface Morphology with Substrate. Journal of Physical Chemistry C, 2012, 116, 12541-12552.	1.5	19
50	Whoâ€™s on first? Tracking in real time the growth of multiple crystalline phases of an organic semiconductor: Tetracene on SiO2. Journal of Chemical Physics, 2017, 146, 052815.	1.2	19
51	Interfacial organic layers: Tailored surface chemistry for nucleation and growth. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2010, 28, 1033-1059.	0.9	18
52	Direct in situ characterization of Ge surface segregation in strained Si1â^'xGex epitaxial thin films. Applied Physics Letters, 1998, 73, 2027-2029.	1.5	15
53	Modeling of Ge surface segregation in vapor-phase deposited Si1â^'xGex thin films. Applied Physics Letters, 1999, 75, 817-819.	1.5	15
54	Hyperthermal organic thin film growth on surfaces terminated with self-assembled monolayers. I. The dynamics of trapping. Journal of Chemical Physics, 2011, 134, 224702.	1.2	15

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55	Tuning of Coupling and Surface Quality of PbS Nanocrystals via a Combined Ammonium Sulfide and Iodine Treatment. Journal of Physical Chemistry Letters, 2016, 7, 642-646.	2.1	15
56	Precursor states of atomic hydrogen on the Si(100)-(2Ã—1) surface. Journal of Chemical Physics, 2003, 118, 3294-3299.	1.2	14
57	Molecular-Scale Events in Hyperthermal Deposition of Organic Semiconductors Implicated from Experiment and Molecular Simulation. Journal of Physical Chemistry C, 2009, 113, 6068-6073.	1.5	14
58	Competitive Adsorption as a Route to Area-Selective Deposition. ACS Applied Materials & Interfaces, 2020, 12, 9989-9999.	4.0	14
59	Etching by atomic hydrogen of Ge overlayers on Si(100). Journal of Applied Physics, 2001, 90, 3614-3622.	1.1	13
60	Surface Reaction Dynamics via Temperature Modulation: Applications to the Oxidation of Carbon Monoxide on the Pt(110)-(1Ã—2) Surface. Physical Review Letters, 1985, 55, 2017-2020.	2.9	12
61	Nucleation of copper on TiN and SiO2 from the reaction of hexafluoroacetylacetonate copper(I) trimethylvinylsilane. Applied Physics Letters, 2002, 80, 2604-2606.	1.5	12
62	Hyperthermal Growth ofN,Nâ€²-Ditridecylperylene-3,4,9,10-tetracarboxylic Diimide on Self-Assembled Monolayers: Adsorption Dynamics and Sub- and Multilayer Thin Film Growth. Journal of Physical Chemistry C, 2011, 115, 18221-18234.	1.5	12
63	Unexpected Effects of the Rate of Deposition on the Mode of Growth and Morphology of Thin Films of Tetracene Grown on SiO₂. Journal of Physical Chemistry C, 2016, 120, 7183-7191.	1.5	12
64	Effect of coincident ion bombardment on the oxidation of Siâ€‰(100) by atomic oxygen. Applied Physics Letters, 1989, 55, 2202-2204.	1.5	11
65	The effect of coincident atomic hydrogen on the gas-source molecular beam epitaxial growth of silicon from disilane. Surface Science, 2000, 470, 131-140.	0.8	11
66	Effects of atomic hydrogen on the selective area growth of Si and Si[sub 1âˆ’x]Ge[sub x] thin films on Si and SiO[sub 2] surfaces: Inhibition, nucleation, and growth. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2004, 22, 578.	0.9	11
67	A supersonic molecular beam study of the reaction of tetrakis(dimethylamido)titanium with self-assembled alkyltrichlorosilane monolayers. Journal of Chemical Physics, 2006, 125, 034706.	1.2	11
68	When the Sequence of Thin Film Deposition Matters: Examination of Organic-on-Organic Heterostructure Formation Using Molecular Beam Techniques and in Situ Real Time X-ray Synchrotron Radiation. Journal of Physical Chemistry C, 2016, 120, 6165-6179.	1.5	10
69	A supersonic molecular beam study of the chemisorption of PH3 on the Si(100) surface. Surface Science, 1995, 344, 203-220.	0.8	9
70	Monte Carlo analysis of a hyperthermal silicon deposition process. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 689-699.	0.9	9
71	Organic thin-film transistors of pentacene films fabricated fromÂaÂsupersonic molecular beam source. Applied Physics A: Materials Science and Processing, 2009, 95, 29-35.	1.1	9
72	The effect of strain on gasâ€“surface reactivity in group-IV heteroepitaxial systems. Chemical Physics Letters, 1998, 292, 229-234.	1.2	8

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73	Growth of First Generation Dendrons on SiO₂:â€‰ Controlling Chemisorption of Transition Metal Coordination Complexes. Journal of the American Chemical Society, 2007, 129, 15022-15033.	6.6	8
74	Area-selective atomic layer deposition enabled by competitive adsorption. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 062411.	0.9	8
75	Pattern formation and shadow instability in collimated energetic molecular beam growth of silicon. Applied Physics Letters, 1999, 74, 25-27.	1.5	7
76	Gasâ^'Surface Reactions between Pentakis(dimethylamido)tantalum and Surface Grown Hyperbranched Polyglycidol Films. Langmuir, 2008, 24, 8610-8619.	1.6	7
77	Vacuum Ultraviolet-Enhanced Oxidationâ€"A Route to the Atomic Layer Etching of Palladium Metal. Chemistry of Materials, 2020, 32, 6035-6042.	3.2	7
78	Reactive Scattering of Si₂ H₆ from the Si(100) Surface. Materials Research Society Symposia Proceedings, 1992, 282, 549.	0.1	6
79	The adsorption of PH3 on the Si(111)-(7 Ã— 7) surface: an example of autocatalytic dissociative chemisorption. Surface Science, 1995, 344, L1201-L1206.	0.8	6
80	Analysis of gasâ€"surface reactions by surface temperature modulation: Theoretical formulation. Journal of Chemical Physics, 1987, 87, 4211-4222.	1.2	5
81	Summary Abstract: The hydrogenolysis of alkanes over singleâ€crystalline surfaces of iridium: The influence of surface structure on the catalytic selectivity. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 825-827.	0.9	5
82	Faster Is Smoother and So Is Lower Temperature: The Curious Case of Thin Film Growth of Tetracene on SiO₂. Journal of Physical Chemistry C, 2017, 121, 8464-8472.	1.5	5
83	Selective Si epitaxial growth technique employing atomic hydrogen and substrate temperature modulation. Applied Physics Letters, 2001, 79, 2181-2183.	1.5	4
84	Initial Stages of Atomic Layer Deposition of Tantalum Nitride on SiO₂ and Porous Low-Î¤ Substrates Modified by a Branched Interfacial Organic Layer: Chemisorption and the Transition to Steady-State Growth. Journal of Physical Chemistry C, 2012, 116, 21948-21960.	1.5	4
85	Probing ultrathin film continuity and interface abruptness with x-ray photoelectron spectroscopy and low-energy ion scattering. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	0.9	4
86	Design and characterization of a microreactor for spatially confined atomic layer deposition and in situ UHV surface analysis. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, .	0.9	4
87	Summary Abstract: The oxidation of carbon monoxide on the Pt(110)â€(1Ã—2) surface: The influence of the adlayer composition on the reaction dynamics. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 640-642.	0.9	3
88	The nucleation and growth of silicon thin films on silicate glasses of variable composition using supersonic gas source molecular beam deposition. Journal of Applied Physics, 2004, 95, 6470-6479.	1.1	3
89	Nucleation of diindenoperylene and pentacene at thermal and hyperthermal incident kinetic energies. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2015, 33, .	0.9	3
90	A Vacuum Ultraviolet-Enhanced Oxidation Mechanism for Pd: Near-Surface Oxidation for Atomic Layer Etching. ACS Applied Materials & Interfaces, 2020, 12, 50985-50995.	4.0	3

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91	Three dimensional modeling of silicon deposition process scale-up employing supersonic jets. II. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1999, 17, 978-985.	0.9	2
92	A Growth Technique to Make Extensive Atomically Flat Silicon Surfaces. Materials Research Society Symposia Proceedings, 2000, 648, 1.	0.1	2
93	Preface: Special Topic on Atomic and Molecular Layer Processing: Deposition, Patterning, and Etching. Journal of Chemical Physics, 2017, 146, 052501.	1.2	2
94	Nucleation, growth, and stability of WSe2 thin films deposited on HOPG examined using in situ, real-time synchrotron x-ray radiation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 012201.	0.9	1
95	Summary Abstract: Comparative studies of alkane activation by lowâ€index surfaces of iridium and platinum. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1985, 3, 1560-1561.	0.9	0
96	Reactive Atom-Surface Scattering the Adsorption and Reaction of Atomic Oxygen on the Si(100) Surface. Materials Research Society Symposia Proceedings, 1988, 131, 245.	0.1	0
97	Dissociative Chemisorption at Hyperthermal Energies: Benchmark Studies in Group IV Systems. Materials Research Society Symposia Proceedings, 1995, 388, 221.	0.1	0
98	A 3-D Kinetic Monte Carlo Study of the Growth of Si Thin Films Using Beams With Varying Angle of Incidence. Materials Research Society Symposia Proceedings, 1996, 440, 413.	0.1	0
99	Molecular imaging of chemical species adsorbed on solid surfaces by scanning probe microscopy. , 2012, , .		0