

James Engstrom

List of Publications by Year in descending order

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31
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214527

47
g-index

100
all docs

100
docs citations

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times ranked

2336
citing authors

#	ARTICLE	IF	CITATIONS
1	Nucleation, growth, and stability of WSe ₂ thin films deposited on HOPG examined using in situ, real-time synchrotron x-ray radiation. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2022, 40, 012201.	0.9	1
2	Area-selective atomic layer deposition enabled by competitive adsorption. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2020, 38, 062411.	0.9	8
3	A Vacuum Ultraviolet-Enhanced Oxidation Mechanism for Pd: Near-Surface Oxidation for Atomic Layer Etching. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 50985-50995.	4.0	3
4	Vacuum Ultraviolet-Enhanced Oxidation—A Route to the Atomic Layer Etching of Palladium Metal. <i>Chemistry of Materials</i> , 2020, 32, 6035-6042.	3.2	7
5	Competitive Adsorption as a Route to Area-Selective Deposition. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 9989-9999.	4.0	14
6	Faster Is Smoother and So Is Lower Temperature: The Curious Case of Thin Film Growth of Tetracene on SiO ₂ . <i>Journal of Physical Chemistry C</i> , 2017, 121, 8464-8472.	1.5	5
7	Preface: Special Topic on Atomic and Molecular Layer Processing: Deposition, Patterning, and Etching. <i>Journal of Chemical Physics</i> , 2017, 146, 052501.	1.2	2
8	Who's on first? Tracking in real time the growth of multiple crystalline phases of an organic semiconductor: Tetracene on SiO ₂ . <i>Journal of Chemical Physics</i> , 2017, 146, 052815.	1.2	19
9	Design and characterization of a microreactor for spatially confined atomic layer deposition and <i>in situ</i> UHV surface analysis. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2017, 35, .	0.9	4
10	Effect of substrate composition on atomic layer deposition using self-assembled monolayers as blocking layers. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2016, 34, .	0.9	21
11	Unexpected Effects of the Rate of Deposition on the Mode of Growth and Morphology of Thin Films of Tetracene Grown on SiO ₂ . <i>Journal of Physical Chemistry C</i> , 2016, 120, 7183-7191.	1.5	12
12	When the Sequence of Thin Film Deposition Matters: Examination of Organic-on-Organic Heterostructure Formation Using Molecular Beam Techniques and <i>in Situ</i> Real Time X-ray Synchrotron Radiation. <i>Journal of Physical Chemistry C</i> , 2016, 120, 6165-6179.	1.5	10
13	Tuning of Coupling and Surface Quality of PbS Nanocrystals via a Combined Ammonium Sulfide and Iodine Treatment. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 642-646.	2.1	15
14	Nucleation of diindenoperylene and pentacene at thermal and hyperthermal incident kinetic energies. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2015, 33, .	0.9	3
15	Probing ultrathin film continuity and interface abruptness with x-ray photoelectron spectroscopy and low-energy ion scattering. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2013, 31, .	0.9	4
16	Molecular imaging of chemical species adsorbed on solid surfaces by scanning probe microscopy. , 2012, , .		0
17	Nucleation delay in atomic layer deposition on a thin organic layer and the role of reaction thermochemistry. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2012, 30, .	0.9	31
18	Thin Film Growth of Pentacene on Polymeric Dielectrics: Unexpected Changes in the Evolution of Surface Morphology with Substrate. <i>Journal of Physical Chemistry C</i> , 2012, 116, 12541-12552.	1.5	19

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19	Initial Stages of Atomic Layer Deposition of Tantalum Nitride on SiO ₂ and Porous Low- κ Substrates Modified by a Branched Interfacial Organic Layer: Chemisorption and the Transition to Steady-State Growth. <i>Journal of Physical Chemistry C</i> , 2012, 116, 21948-21960.	1.5	4
20	Hyperthermal Growth of N,N'-Ditridecylperylene-3,4,9,10-tetracarboxylic Diimide on Self-Assembled Monolayers: Adsorption Dynamics and Sub- and Multilayer Thin Film Growth. <i>Journal of Physical Chemistry C</i> , 2011, 115, 18221-18234.	1.5	12
21	Controlling Nanocrystal Superlattice Symmetry and Shape-Anisotropic Interactions through Variable Ligand Surface Coverage. <i>Journal of the American Chemical Society</i> , 2011, 133, 3131-3138.	6.6	198
22	Hyperthermal organic thin film growth on surfaces terminated with self-assembled monolayers. I. The dynamics of trapping. <i>Journal of Chemical Physics</i> , 2011, 134, 224702.	1.2	15
23	Integration of Self-Assembled Redox Molecules in Flash Memory Devices. <i>IEEE Transactions on Electron Devices</i> , 2011, 58, 826-834.	1.6	33
24	Quantitative modeling of <i>in situ</i> x-ray reflectivity during organic molecule thin film growth. <i>Physical Review B</i> , 2011, 84, .	1.1	42
25	Three-dimensional imaging of pore structures inside low- κ dielectrics. <i>Applied Physics Letters</i> , 2010, 96, .	1.5	19
26	Interfacial organic layers: Tailored surface chemistry for nucleation and growth. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2010, 28, 1033-1059.	0.9	18
27	Nucleation and Growth of Perfluoropentacene on Self-Assembled Monolayers: Significant Changes in Island Density and Shape with Surface Termination. <i>Journal of Physical Chemistry C</i> , 2010, 114, 20120-20129.	1.5	38
28	Coverage dependent adsorption dynamics in hyperthermal organic thin film growth. <i>Journal of Chemical Physics</i> , 2009, 130, 124701.	1.2	29
29	Organic thin-film transistors of pentacene films fabricated from a supersonic molecular beam source. <i>Applied Physics A: Materials Science and Processing</i> , 2009, 95, 29-35.	1.1	9
30	Post-deposition reorganization of pentacene films deposited on low-energy surfaces. <i>Journal of Materials Chemistry</i> , 2009, 19, 5580.	6.7	60
31	Molecular-Scale Events in Hyperthermal Deposition of Organic Semiconductors Implicated from Experiment and Molecular Simulation. <i>Journal of Physical Chemistry C</i> , 2009, 113, 6068-6073.	1.5	14
32	Observation from Scanning Tunneling Microscopy of a Striped Phase for Octanethiol Adsorbed on Au(111) from Solution. <i>Langmuir</i> , 2008, 24, 9937-9940.	1.6	25
33	Gas-Surface Reactions between Pentakis(dimethylamido)tantalum and Surface Grown Hyperbranched Polyglycidol Films. <i>Langmuir</i> , 2008, 24, 8610-8619.	1.6	7
34	Real time monitoring of pentacene growth on SiO ₂ from a supersonic source. <i>Applied Physics Letters</i> , 2008, 92, 253304.	1.5	31
35	Effects of Interfacial Organic Layers on Nucleation, Growth, and Morphological Evolution in Atomic Layer Thin Film Deposition. <i>Journal of Physical Chemistry C</i> , 2007, 111, 11045-11058.	1.5	36
36	Growth of First Generation Dendrons on SiO ₂ : Controlling Chemisorption of Transition Metal Coordination Complexes. <i>Journal of the American Chemical Society</i> , 2007, 129, 15022-15033.	6.6	8

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37	A supersonic molecular beam study of the reaction of tetrakis(dimethylamido)titanium with self-assembled alkyltrichlorosilane monolayers. <i>Journal of Chemical Physics</i> , 2006, 125, 034706.	1.2	11
38	Ab Initio Calculations of the Reaction Mechanisms for Metal Nitride Deposition from Organo-Metallic Precursors onto Functionalized Self-Assembled Monolayers. <i>Journal of the American Chemical Society</i> , 2006, 128, 836-847.	6.6	28
39	Nucleation of pentacene thin films on silicon dioxide modified with hexamethyldisilazane. <i>Applied Physics Letters</i> , 2006, 88, 143125.	1.5	27
40	Effects of interfacial organic layers on thin film nucleation in atomic layer deposition. <i>Applied Physics Letters</i> , 2006, 89, 164108.	1.5	21
41	A surface modification strategy on silicon nitride for developing biosensors. <i>Analytical Biochemistry</i> , 2005, 343, 322-328.	1.1	79
42	Nucleation of pentacene on silicon dioxide at hyperthermal energies. <i>Applied Physics Letters</i> , 2005, 87, 033110.	1.5	31
43	The Reaction of Tetrakis(dimethylamido)titanium with Self-Assembled Alkyltrichlorosilane Monolayers Possessing -OH , -NH_2 , and -CH_3 Terminal Groups. <i>Journal of the American Chemical Society</i> , 2005, 127, 6300-6310.	6.6	60
44	Covalent Attachment of a Transition Metal Coordination Complex to Functionalized Oligo(phenylene-ethynylene) Self-Assembled Monolayers. <i>Journal of the American Chemical Society</i> , 2005, 127, 14299-14309.	6.6	28
45	The nucleation and growth of silicon thin films on silicate glasses of variable composition using supersonic gas source molecular beam deposition. <i>Journal of Applied Physics</i> , 2004, 95, 6470-6479.	1.1	3
46	Effects of atomic hydrogen on the selective area growth of Si and $\text{Si}_{1-x}\text{Ge}_x$ thin films on Si and SiO_2 surfaces: Inhibition, nucleation, and growth. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2004, 22, 578.	0.9	11
47	Analysis of a toluene stripping process: a comparison between a microfabricated stripping column and a conventional packed tower. <i>Chemical Engineering Journal</i> , 2004, 101, 49-56.	6.6	35
48	Precursor states of atomic hydrogen on the $\text{Si}(100)-(2\times 1)$ surface. <i>Journal of Chemical Physics</i> , 2003, 118, 3294-3299.	1.2	14
49	Nucleation of copper on TiN and SiO_2 from the reaction of hexafluoroacetylacetonate copper(I) trimethylvinylsilane. <i>Applied Physics Letters</i> , 2002, 80, 2604-2606.	1.5	12
50	Selective Si epitaxial growth technique employing atomic hydrogen and substrate temperature modulation. <i>Applied Physics Letters</i> , 2001, 79, 2181-2183.	1.5	4
51	Etching by atomic hydrogen of Ge overlayers on $\text{Si}(100)$. <i>Journal of Applied Physics</i> , 2001, 90, 3614-3622.	1.1	13
52	A growth method for creating arrays of atomically flat mesas on silicon. <i>Applied Physics Letters</i> , 2001, 78, 1349-1351.	1.5	20
53	A Growth Technique to Make Extensive Atomically Flat Silicon Surfaces. <i>Materials Research Society Symposia Proceedings</i> , 2000, 648, 1.	0.1	2
54	Combinatorial materials science: Paradigm shift in materials discovery and optimization. <i>AIChE Journal</i> , 2000, 46, 2-5.	1.8	35

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55	The effect of coincident atomic hydrogen on the gas-source molecular beam epitaxial growth of silicon from disilane. <i>Surface Science</i> , 2000, 470, 131-140.	0.8	11
56	Three dimensional modeling of silicon deposition process scale-up employing supersonic jets. II. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1999, 17, 978-985.	0.9	2
57	Pattern formation and shadow instability in collimated energetic molecular beam growth of silicon. <i>Applied Physics Letters</i> , 1999, 74, 25-27.	1.5	7
58	Modeling of Ge surface segregation in vapor-phase deposited Si _{1-x} Ge _x thin films. <i>Applied Physics Letters</i> , 1999, 75, 817-819.	1.5	15
59	The effect of strain on gas surface reactivity in group-IV heteroepitaxial systems. <i>Chemical Physics Letters</i> , 1998, 292, 229-234.	1.2	8
60	A kinetic Monte Carlo study of the growth of Si on Si(100) at varying angles of incident deposition. <i>Surface Science</i> , 1998, 401, 112-123.	0.8	54
61	Study of thin film deposition processes employing variable kinetic energy, highly collimated neutral molecular beams. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1998, 16, 3423-3433.	0.9	25
62	Direct in situ characterization of Ge surface segregation in strained Si _{1-x} Ge _x epitaxial thin films. <i>Applied Physics Letters</i> , 1998, 73, 2027-2029.	1.5	15
63	Monte Carlo analysis of a hyperthermal silicon deposition process. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1998, 16, 689-699.	0.9	9
64	Gas surface reactivity in mixed-crystal systems: the reaction of GeH ₄ and Ge ₂ H ₆ on Si surfaces. <i>Surface Science</i> , 1997, 393, 205-221.	0.8	24
65	A 3-D Kinetic Monte Carlo Study of the Growth of Si Thin Films Using Beams With Varying Angle of Incidence. <i>Materials Research Society Symposia Proceedings</i> , 1996, 440, 413.	0.1	0
66	Supersonic molecular beam studies of the dissociative chemisorption of GeH ₄ and Ge ₂ H ₆ on the Ge(100) and Ge(111) surfaces. <i>Journal of Chemical Physics</i> , 1996, 105, 7140-7151.	1.2	21
67	Dissociative Chemisorption at Hyperthermal Energies: Benchmark Studies in Group IV Systems. <i>Materials Research Society Symposia Proceedings</i> , 1995, 388, 221.	0.1	0
68	Dissociation and pyrolysis of Si ₂ H ₆ on Si surfaces: The influence of surface structure and adlayer composition. <i>Journal of Chemical Physics</i> , 1995, 103, 1691-1701.	1.2	45
69	Thermal and plasma-assisted nitridation of GaAs(100) using NH ₃ . <i>Applied Physics Letters</i> , 1995, 67, 542-544.	1.5	33
70	Supersonic molecular beam scattering as a probe of thin film deposition processes. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1995, 13, 2651-2664.	0.9	57
71	Effect of PH ₃ on the dissociative chemisorption of SiH ₄ and Si ₂ H ₆ on Si(100): Implications on the growth of in situ doped Si thin films. <i>Applied Physics Letters</i> , 1995, 66, 1909-1911.	1.5	21
72	A supersonic molecular beam study of the chemisorption of PH ₃ on the Si(100) surface. <i>Surface Science</i> , 1995, 344, 203-220.	0.8	9

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73	The adsorption of PH ₃ on the Si(111)-(7 Å ⁻¹ × 7) surface: an example of autocatalytic dissociative chemisorption. <i>Surface Science</i> , 1995, 344, L1201-L1206.	0.8	6
74	The role of surface corrugation in direct translationally activated dissociative adsorption. <i>Journal of Chemical Physics</i> , 1994, 101, 5329-5342.	1.2	33
75	Translationally activated dissociative chemisorption of SiH ₄ on the Si(100) and Si(111) surfaces. <i>Chemical Physics Letters</i> , 1994, 229, 401-407.	1.2	35
76	Dissociative adsorption of Si ₂ H ₆ on silicon at hyperthermal energies: The influence of surface structure. <i>Applied Physics Letters</i> , 1993, 63, 1821-1823.	1.5	42
77	Dynamics of the dissociative adsorption of disilane on Si(100): Energy scaling and the effect of corrugation. <i>Journal of Chemical Physics</i> , 1993, 99, 4051-4054.	1.2	45
78	Reactive Scattering of Si ₂ H ₆ from the Si(100) Surface. <i>Materials Research Society Symposia Proceedings</i> , 1992, 282, 549.	0.1	6
79	The reaction of atomic oxygen with Si(100) and Si(111). <i>Surface Science</i> , 1992, 268, 238-264.	0.8	91
80	The reaction of atomic oxygen with Si(100) and Si(111). <i>Surface Science</i> , 1991, 256, 317-343.	0.8	117
81	Reaction of cyclopropane, methylcyclopropane and propylene with hydrogen on the (111) and (110)-(1) Tj ETQq1 1,0.784314 rgBT /C 2.9 27	1.0	78
82	Atomic versus molecular reactivity at the gas-solid interface: The adsorption and reaction of atomic oxygen on the Si(100) surface. <i>Physical Review B</i> , 1990, 41, 1038-1041.	1.1	79
83	Effect of coincident ion bombardment on the oxidation of Si(100) by atomic oxygen. <i>Applied Physics Letters</i> , 1989, 55, 2202-2204.	1.5	11
84	Reactive atom surface scattering: The adsorption and reaction of atomic oxygen on the Si(100) surface. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1989, 7, 1837-1840.	0.9	38
85	The adsorption and reaction of fluorine on the Si(100) surface. <i>Surface Science</i> , 1989, 215, 437-500.	0.8	82
86	Hydrogenolysis of ethane, propane, n-butane, and neopentane on the (111) and (110)-(1 × 2) surfaces of iridium. <i>Journal of the American Chemical Society</i> , 1988, 110, 8305-8319.	6.6	83
87	Analysis of gas-surface reactions by surface temperature modulation: Experimental applications to the adsorption and oxidation of carbon monoxide on the Pt(110)-(1 Å ⁻¹ × 2) surface. <i>Surface Science</i> , 1988, 201, 145-170.	0.8	24
88	Thermal decomposition of a silicon-fluoride adlayer: Evidence for spatially inhomogeneous removal of a single monolayer of the silicon substrate. <i>Physical Review B</i> , 1988, 37, 6563-6566.	1.1	33
89	Reactive Atom-Surface Scattering the Adsorption and Reaction of Atomic Oxygen on the Si(100) Surface. <i>Materials Research Society Symposia Proceedings</i> , 1988, 131, 245.	0.1	0
90	Analysis of gas surface reactions by surface temperature modulation: Theoretical formulation. <i>Journal of Chemical Physics</i> , 1987, 87, 4211-4222.	1.2	5

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91	The chemisorption of hydrogen on the (111) and (110) surfaces of iridium and platinum. Journal of Chemical Physics, 1987, 87, 3104-3119.	1.2	115
92	Summary Abstract: The oxidation of carbon monoxide on the Pt(110) 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
93	Summary Abstract: The hydrogenolysis of alkanes over single-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
94	Hydrogenolysis of n-butane over the (111) and (110) 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
95	Adsorption and reaction of n-alkanes on the platinum(110)-(111) surface. The Journal of Physical Chemistry, 1985, 89, 2497-2502.	2.9	64
96	Surface Reaction Dynamics via Temperature Modulation: Applications to the Oxidation of Carbon Monoxide on the Pt(110) Surface. Physical Review Letters, 1985, 55, 2017-2020.	2.9	12
97	Summary Abstract: Comparative studies of alkane activation by low-index surfaces of iridium and platinum. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1985, 3, 1560-1561.	0.9	0
98	The reaction of saturated and unsaturated hydrocarbons with the (110) and (111) surfaces of iridium. Journal of Chemical Physics, 1984, 80, 508-517.	1.2	56
99	Design and construction of a digital temperature controller for use in surface studies. Review of Scientific Instruments, 1984, 55, 404-409.	0.6	29