Melissa A Hines

List of Publications by Year
in descending order

68	2,198	201575 27	233338 45
papers	citations	h-index	g-index

69	69	69	1934
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Photochemical Fluorination of TiO₂(110) Produces an Atomically Thin Passivating Layer. Journal of Physical Chemistry C, 2022, 126, 4899-4906.	1.5	1
2	Single-Crystal Alkali Antimonide Photocathodes: High Efficiency in the Ultrathin Limit. Physical Review Letters, 2022, 128, 114801.	2.9	20
3	Reduction of surface roughness emittance of Cs3Sb photocathodes grown via codeposition on single crystal substrates. Applied Physics Letters, 2021, 118, .	1.5	11
4	The Intricate Love Affairs between MoS₂ and Metallic Substrates. Advanced Materials Interfaces, 2020, 7, 2001324.	1.9	15
5	The effects of oxygen-induced phase segregation on the interfacial electronic structure and quantum efficiency of Cs3Sb photocathodes. Journal of Chemical Physics, 2020, 153, 144705.	1.2	11
6	Breaking Ï€â€“Ï€ Interactions in Carboxylic Acid Monolayers on Rutile TiO₂(110) Leads to Unexpected Long-Range Ordering. Journal of Physical Chemistry C, 2019, 123, 8836-8842.	1.5	5
7	Atomic-Scale Understanding of Catalyst Activation: Carboxylic Acid Solutions, but Not the Acid Itself, Increase the Reactivity of Anatase (001) Faceted Nanocatalysts. Journal of Physical Chemistry C, 2018, 122, 4307-4314.	1.5	14
8	Mechanism of Gold-Assisted Exfoliation of Centimeter-Sized Transition-Metal Dichalcogenide Monolayers. ACS Nano, 2018, 12, 10463-10472.	7.3	203
9	High-affinity adsorption leads to molecularly ordered interfaces on TiO ₂ in air and solution. Science, 2018, 361, 786-789.	6.0	190
10	Half-flat vs. atomically flat: Alkyl monolayers on morphologically controlled Si(100) and Si(111) have very similar structure, density, and chemical stability. Journal of Chemical Physics, 2017, 146, 052804.	1.2	5
11	Solution Deposition of Phenylphosphinic Acid Leads to Highly Ordered, Covalently Bound Monolayers on TiO₂ (110) Without Annealing. Journal of Physical Chemistry C, 2017, 121, 14213-14221.	1.5	14
12	Cartesian Decomposition of Infrared Spectra Reveals the Structure of Solution-Deposited, Self-Assembled Benzoate and Alkanoate Monolayers on Rutile (110). Journal of Physical Chemistry C, 2016, 120, 24866-24876.	1.5	4
13	Nanoscale Solvation Leads to Spontaneous Formation of a Bicarbonate Monolayer on Rutile (110) under Ambient Conditions: Implications for CO₂ Photoreduction. Journal of Physical Chemistry C, 2016, 120, 9326-9333.	1.5	36
14	Solution Deposition of Self-Assembled Benzoate Monolayers on Rutile (110): Effect of Ï€â€“Ï€ Interactions on Monolayer Structure. Journal of Physical Chemistry C, 2016, 120, 11581-11589.	1.5	12
15	Frustrated Etching during H/Si(111) Methoxylation Produces Fissured Fluorinated Surfaces, Whereas Direct Fluorination Preserves the Atomically Flat Morphology. Journal of Physical Chemistry C, 2015, 119, 26029-26037.	1.5	6
16	Finding Needles in Haystacks: Scanning Tunneling Microscopy Reveals the Complex Reactivity of Si(100) Surfaces. Accounts of Chemical Research, 2015, 48, 2159-2166.	7.6	8
17	A Blackboard for the 21st Century: An Inexpensive Light Board Projection System for Classroom Use. Journal of Chemical Education, 2015, 92, 1754-1756.	1.1	17
18	Molecular Mechanism of Etching-Induced Faceting on Si(100): Micromasking Is Not a Prerequisite for Pyramidal Texturing. Journal of Physical Chemistry C, 2015, 119, 14490-14498.	1.5	8

#	Article	IF	Citations
19	Lowering the density of electronic defects on organic-functionalized Si(100) surfaces. Applied Physics Letters, 2014, 104, .	1.5	16
20	Rutile Surface Reactivity Provides Insight into the Structure-Directing Role of Peroxide in TiO₂ Polymorph Control. Journal of Physical Chemistry C, 2014, 118, 27343-27352.	1.5	15
21	Effect of Organic SAMs on the Evolution of Strength of Silicon Nanostructures. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 59-64.	0.3	0
22	Chemical Control of Surfaces: From Fundamental Understanding to Practical Application. Solid State Phenomena, 2012, 195, 65-70.	0.3	0
23	Si(100) Etching in Aqueous Fluoride Solutions: Parallel Etching Reactions Lead to pH-Dependent Nanohillock Formation or Atomically Flat Surfaces. Journal of Physical Chemistry C, 2012, 116, 21499-21507.	1.5	12
24	Self-Propagating Reaction Produces Near-Ideal Functionalization of Si(100) and Flat Surfaces. Journal of Physical Chemistry C, 2012, 116, 18920-18929.	1.5	26
25	Following Chemical Charge Trapping in Pentacene Thin Films by Selective Impurity Doping and Wavelengthâ€Resolved Electric Force Microscopy. Advanced Functional Materials, 2012, 22, 5096-5106.	7.8	10
26	Effect of surface chemistry on the quality factors of micromechanical resonators. , 2011, , .		1
27	The same etchant produces both near-atomically flat and microfaceted Si(100) surfaces: The effects of gas evolution on etch morphology. Journal of Applied Physics, 2010, 107, .	1.1	17
28	Study of the resonant frequencies of silicon microcantilevers coated with vanadium dioxide films during the insulator-to-metal transition. Journal of Applied Physics, 2010, 107, 053528.	1.1	18
29	Aqueous Etching Produces Si(100) Surfaces of Near-Atomic Flatness: Strain Minimization Does Not Predict Surface Morphology. Journal of Physical Chemistry C, 2010, 114, 423-428.	1.5	48
30	Kinetic Monte Carlo simulations of anisotropic Si(100) etching: Modeling the chemical origins of characteristic etch morphologies. Journal of Chemical Physics, 2010, 133, 044710.	1.2	17
31	Effect of Surface Chemistry on Mechanical Energy Dissipation:â€‰ Silicon Oxidation Does Not Inherently Decrease the Quality Factor. Journal of Physical Chemistry C, 2008, 112, 1473-1478.	1.5	6
32	Extracting maximum information from polarized surface vibrational spectra: Application to etched, H-terminated Si(110) surfaces. Journal of Chemical Physics, 2008, 128, 144711.	1.2	20
33	Understanding the Effects of Surface Chemistry onQ:Â Mechanical Energy Dissipation in Alkyl-Terminated (C1âˆ'C18) Micromechanical Silicon Resonators. Journal of Physical Chemistry B, 2007, 111, 88-94.	1.2	22
34	Effect of surface morphology on the fracture strength of silicon nanobeams. Applied Physics Letters, 2006, 89, 091901.	1.5	32
35	Production of Highly Homogeneous Si(100) Surfaces by H2O Etching:Â Surface Morphology and the Role of Strain. Journal of the American Chemical Society, 2006, 128, 11455-11462.	6.6	30
36	Methyl monolayers improve the fracture strength and durability of silicon nanobeams. Applied Physics Letters, 2006, 89, 231905.	1.5	28

#	Article	IF	Citations
37	Methyl monolayers suppress mechanical energy dissipation in micromechanical silicon resonators. Applied Physics Letters, 2004, 85, 5736-5738.	1.5	19
38	Controlling energy dissipation and stability of micromechanical silicon resonators with self-assembled monolayers. Applied Physics Letters, 2004, 84, 1765-1767.	1.5	23
39	Improved algorithm for the suppression of interference fringe in absorption spectroscopy. Review of Scientific Instruments, 2004, 75, 4547-4553.	0.6	27
40	Effects of Diffusional Processes on Crystal Etching:â€‰ Kinematic Theory Extended to Two Dimensions. Journal of Physical Chemistry B, 2004, 108, 6062-6071.	1.2	14
41	Etchant Anisotropy Controls the Step Bunching Instability in KOH Etching of Silicon. Physical Review Letters, 2004, 93, 166102.	2.9	57
42	Machining with chemistry: Controlling nanoscale surface structure with anisotropic etching. Nanostructure Science and Technology, 2004, , 249-280.	0.1	0
43	Understanding the pH dependence of silicon etching: the importance of dissolved oxygen in buffered HF etchants. Surface Science, 2003, 541, 252-261.	0.8	42
44	Surface Chemical Control of Mechanical Energy Losses in Micromachined Silicon Structures. Journal of Physical Chemistry B, 2003, 107, 14270-14277.	1.2	47
45	INSEARCH OFPERFECTION: Understanding the Highly Defect-Selective Chemistry of Anisotropic Etching. Annual Review of Physical Chemistry, 2003, 54, 29-56.	4.8	105
46	Measuring the Site-Specific Reactivity of Impurities:Â The Pronounced Effect of Dissolved Oxygen on Silicon Etchingâ€. Journal of Physical Chemistry B, 2002, 106, 8258-8264.	1.2	34
47	Orientation-Resolved Chemical Kinetics:â€‰ Using Microfabrication to Unravel the Complicated Chemistry of KOH/Si Etching. Journal of Physical Chemistry B, 2002, 106, 1557-1569.	1.2	60
48	Nanofabrication at Biologically Important Length Scale: Etching of Dislocation Array in Twist-bonded Bicrystals. Materials Research Society Symposia Proceedings, 2001, 705, 981.	0.1	0
49	Fabrication of nanoperiodic surface structures by controlled etching of dislocations in bicrystals. Applied Physics Letters, 2001, 78, 2205-2207.	1.5	41
50	The picture tells the story: Using surface morphology to probe chemical etching reactions. International Reviews in Physical Chemistry, 2001, 20, 645-672.	0.9	40
51	Morphological Aspects of Silicon Oxidation in Aqueous Solutions. Springer Series in Materials Science, 2001, , 13-34.	0.4	1
52	Macroscopic etch anisotropies and microscopic reaction mechanisms: a micromachined structure for the rapid assay of etchant anisotropy. Surface Science, 2000, 460, 21-38.	0.8	106
53	The formation of etch hillocks during step-flow etching of Si(111). Chemical Physics Letters, 1999, 302, 85-90.	1.2	24
54	The correlation between surface morphology and spectral lineshape: a re-examination of the Hâ€"Si(111) stretch vibration. Surface Science, 1999, 430, 67-79.	0.8	19

#	Article	IF	Citations
55	An atomistic mechanism for the production of two- and three-dimensional etch hillocks on Si(111) surfaces. Journal of Chemical Physics, 1999, 111, 6970-6981.	1.2	53
56	The site-specific reactivity of isopropanol in aqueous silicon etching: Controlling morphology with surface chemistry. Journal of Chemical Physics, 1999, 111, 9125-9128.	1.2	35
57	Extracting site-specific reaction rates from steady state surface morphologies: Kinetic Monte Carlo simulations of aqueous Si(111) etching. Journal of Chemical Physics, 1998, 108, 5542-5553.	1.2	81
58	Effects of Dynamic Step-Step Repulsion and Autocatalysis on the Morphology of Etched Si(111) Surfaces. Physical Review Letters, 1998, 80, 4462-4465.	2.9	31
59	Dynamic repulsion of surface steps during step flow etching: Controlling surface roughness with chemistry. Journal of Chemical Physics, 1998, 109, 5025-5035.	1.2	23
60	Characterization of silicon surfaces and interfaces by optical vibrational spectroscopy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 1719-1727.	0.9	48
61	Measuring the structure of etched silicon surfaces with Raman spectroscopy. Journal of Chemical Physics, 1994, 101, 8055-8072.	1.2	77
62	Looking up the down staircase: Surface Raman spectroscopy as a probe of adsorbate orientation. Journal of Electron Spectroscopy and Related Phenomena, 1993, 64-65, 183-191.	0.8	23
63	The interaction of CO with Ni(111): Rainbows and rotational trapping. Journal of Chemical Physics, 1993, 98, 9134-9147.	1.2	42
64	Raman studies of steric hindrance and surface relaxation of stepped H-terminated silicon surfaces. Physical Review Letters, 1993, 71, 2280-2283.	2.9	44
65	2+1 resonantly enhanced multiphoton ionization of CO via the Eâ€‰1Î â€“Xâ€‰1Î£+ transition: From measured ion signals to quantitative population distributions. Journal of Chemical Physics, 1990, 93, 8557-8564.	1.2	57
66	Effect of translational and vibrational energy on adsorption: The dynamics of molecular and dissociative chemisorption. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 501-507.	0.9	90
67	Effect of translational energy on chemisorption: Evidence for a precursor to molecular chemisorption. Journal of Chemical Physics, 1985, 82, 2826-2827.	1.2	36
68	Summary Abstract: Effect of translational energy on molecular chemisorption: Possible selective population of the precursor and molecular chemisorption states. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1985, 3, 1665-1665.	0.9	1