Toyoko Arai

List of Publications by Year
in descending order

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49	692	566801	580395
papers	citations	15 h-index	25 g-index

49	49	49	546
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Observation of Electronic States on Si(111)-(7Ã—7)through Short-Range Attractive Force with Noncontact Atomic Force Spectroscopy. Physical Review Letters, 2004, 93, 256101.	2.9	86
2	Interplay between Nonlinearity, Scan Speed, Damping, and Electronics in Frequency Modulation Atomic-Force Microscopy. Physical Review Letters, 2002, 89, 146104.	2.9	54
3	Analysis of surface forces on oxides in aqueous solutions using AFM. Thin Solid Films, 1996, 273, 322-326.	0.8	48
4	Bias dependence of Si(111)7Ã—7 images observed by noncontact atomic force microscopy. Applied Surface Science, 2000, 157, 207-211.	3.1	43
5	Tip cleaning and sharpening processes for noncontact atomic force microscope in ultrahigh vacuum. Applied Surface Science, 1999, 140, 432-438.	3.1	34
6	Vibrations of a molecule in an external force field. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4571-4576.	3.3	31
7	Effects of electric potentials on surface forces in electrolyte solutions. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1996, 14, 1378.	1.6	28
8	Quasi-stabilized hydration layers on muscovite mica under a thin water film grown from humid air. Scientific Reports, 2017, 7, 4054.	1.6	27
9	Influence of atomic tip structure on the intensity of inelastic tunneling spectroscopy data analyzed by combined scanning tunneling spectroscopy, force microscopy, and density functional theory. Physical Review B, 2016, 93, .	1.1	22
10	Effect of tip shape on force-distance curves for AFM in aqueous electrolytes. Journal of Electroanalytical Chemistry, 1994, 374, 269-273.	1.9	21
11	Energy spectrum of backscattered electrons excited by a field emission scanning tunneling microscope with a build-up [111]-oriented W tip. Applied Surface Science, 1999, 144-145, 123-127.	3.1	21
12	A Si nanopillar grown on a Si tip by atomic force microscopy in ultrahigh vacuum for a high-quality scanning probe. Applied Physics Letters, 2005, 86, 073110.	1.5	21
13	An applicability of scanning tunneling microscopy for surface electron spectroscopy. Surface Science, 2001, 493, 49-55.	0.8	18
14	Hexagonal arrangement of Ge clusters self-organized on a template of half unit cells of Si(111)-7Ã—7 observed by scanning tunneling microscopy. Surface Science, 2005, 574, L17-L22.	0.8	18
15	Amplitude dependence of image quality in atomically-resolved bimodal atomic force microscopy. Applied Physics Letters, 2016, 109, .	1.5	18
16	Resonance frequency-retuned quartz tuning fork as a force sensor for noncontact atomic force microscopy. Applied Physics Letters, 2014, 105, .	1.5	15
17	Germanium islands grown on a Si(111)7Ã—7 surface observed by noncontact atomic force microscopy with simultaneous imaging on damping. Applied Surface Science, 2002, 188, 292-300.	3.1	14
18	Simultaneous Imaging of Tunneling Current Variation by Noncontact Atomic Force Microscopy in Ultrahigh Vacuum. Japanese Journal of Applied Physics, 2000, 39, 3753-3757.	0.8	13

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19	Scanning Auger Electron Microscopy Evaluation and Composition Control of Cantilevers for Ultrahigh Vacuum Atomic Force Microscopy. Japanese Journal of Applied Physics, 1997, 36, 3855-3859.	0.8	12
20	Simultaneous imaging of tunneling current and damping energy by noncontact-AFM in ultra-high vacuum. Applied Physics A: Materials Science and Processing, 2001, 72, S51-S54.	1.1	12
21	Detection Improvement for Electron Energy Spectra for Surface Analysis Using a Field Emission Scanning Tunneling Microscope. Japanese Journal of Applied Physics, 2003, 42, 4837-4840.	0.8	12
22	Atom-Resolved Analysis of an Ionic KBr(001) Crystal Surface Covered with a Thin Water Layer by Frequency Modulation Atomic Force Microscopy. Langmuir, 2015, 31, 3876-3883.	1.6	12
23	Carbon tips as sensitive detectors for nanoscale surface and sub-surface charge. Nanotechnology, 2004, 15, 1302-1306.	1.3	10
24	Energy Spectra of Electrons Backscattered from Sample Surfaces with Heterostructures using Field-Emission Scanning Tunneling Microscopy. Japanese Journal of Applied Physics, 2006, 45, 2278-2282.	0.8	10
25	DNA molecules sticking on a vicinal Si(111) surface observed by noncontact atomic force microscopy. Applied Surface Science, 2002, 188, 474-480.	3.1	9
26	Evidence of temperature dependence of initial adsorption sites of Ge atoms on Si(111)-7Ã—7. Applied Physics Letters, 2006, 88, 171902.	1.5	9
27	Energy dissipation unveils atomic displacement in the noncontact atomic force microscopy imaging of Si(111)â^'(7Ã—7). Physical Review B, 2018, 97, .	1.1	9
28	Peculiar Atomic Bond Nature in Platinum Monatomic Chains. Nano Letters, 2021, 21, 3922-3928.	4.5	9
29	Atomic resolution force microscopy imaging on a strongly ionic surface with differently functionalized tips. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2010, 28, 1279-1283.	0.6	7
30	Atomic scale mechanics explored by in situ transmission electron microscopy with a quartz length-extension resonator as a force sensor. Nanotechnology, 2020, 31, 205706.	1.3	6
31	Germanium Nanostructures on Silicon Observed by Scanning Probe Microscopy. MRS Bulletin, 2004, 29, 484-487.	1.7	5
32	Adsorption State of 4,4â€²â€²-Diamino-p-terphenyl through an Amino Group Bound to Si(111)-7 Ã— 7 Surface Examined by X-ray Photoelectron Spectroscopy and Scanning Tunneling Microscopy. Journal of Physical Chemistry C, 2010, 114, 11109-11114.	1.5	5
33	Layer-by-layer dissolution and recovery of KBr(001) surfaces covered with a nanometer-thick water film caused by a pressing tip controlled by frequency modulation atomic force microscopy. Applied Physics Express, 2019, 12, 115002.	1.1	5
34	Mechanical analysis of gold nanocontacts during stretching using an in-situ transmission electron microscope equipped with a force sensor. Applied Physics Express, 2020, 13, 025001.	1.1	5
35	Interaction measurements between a tip and a sample in proximity regions controlled by tunneling current in a UHV STMâ€“AFM. Applied Surface Science, 1999, 144-145, 501-504.	3.1	3
36	Atomic force microscope tip sharpening and evaluation by electric field confinement using a metal grid close to the tip. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2000, 18, 648.	1.6	3

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37	Evaluation and optimization of quartz resonant-frequency retuned fork force sensors with high Q factors, and the associated electric circuits, for non-contact atomic force microscopy. Review of Scientific Instruments, 2016, 87, 023702.	0.6	3
38	Atomic force microscope Si tip with Ge clusters with the capability of remoulding by heating. Nanotechnology, 2007, 18, 084020.	1.3	2
39	Thermal Transformation of 4,4â€³-Diamino-p-terphenyl on a Si(111)-7 Ã— 7 Surface Analyzed by X-ray Photoemission Spectroscopy and Scanning Tunneling Microscopy. Journal of Physical Chemistry C, 2014, 118, 25104-25109.	1.5	2
40	Resistivity change in Joule heat energy dissipation detected by noncontact atomic force microscopy using a silicon tip terminated with/without atomic hydrogen. Japanese Journal of Applied Physics, 2018, 57, 08NB04.	0.8	2
41	Critical shear stress of gold nanocontacts estimated by in situ transmission electron microscopy equipped with a quartz length-extension resonator. Applied Physics Express, 2021, 14, 075006.	1.1	2
42	Bias Dependence of NC-AFM Images and Tunneling Current Variations on Semiconductor Surfaces. Nanoscience and Technology, 2002, , 79-92.	1.5	2
43	Surface Effect on Youngâ€™s Modulus of Sub-Two-Nanometer Gold [111] Nanocontacts. Physical Review Letters, 2022, 128, 146101.	2.9	2
44	Atomic-scale electric capacitive change detected with a charge amplifier installed in a non-contact atomic force microscope. Applied Physics Express, 2016, 9, 046601.	1.1	1
45	Mechanical energy dissipation of an oscillating cantilever close to a conductive substrate partly covered with thin mica films evaluated by frequency modulation atomic force microscopy. Japanese Journal of Applied Physics, 2022, 61, 065006.	0.8	1
46	Local interaction imaging by SiGe quantum dot probe. Current Applied Physics, 2012, 12, 581-584.	1.1	0
47	Energy Dissipation Detected by Frequency Modulation Atomic Force Microscopy. Vacuum and Surface Science, 2018, 61, 632-638.	0.0	0
48	Nanomechanical Interaction between a Tip and a Sample with Changing Bias Voltage Observed by Using Scanning Probe Microscopy. Hyomen Kagaku, 2008, 29, 239-245.	0.0	0
49	Relationship between the Geometrical Structure of a Tip Apex of a Scanning Probe Microscope and the Intensity of the Signal in Inelastic Electron Tunneling Spectroscopy. Vacuum and Surface Science, 2018, 61, 651-656.	0.0	0