

Santiago D Solares

List of Publications by Year in descending order

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Version: 2024-02-01

103
papers

3,113
citations

218381

26
h-index

168136

53
g-index

106
all docs

106
docs citations

106
times ranked

3766
citing authors

#	ARTICLE	IF	CITATIONS
1	Viscoelastic parameterization of human skin cells characterize material behavior at multiple timescales. <i>Communications Biology</i> , 2022, 5, 17.	2.0	14
2	Direct measurement of storage and loss behavior in AFM force-distance experiments using the modified Fourier transformation. <i>Journal of Applied Physics</i> , 2022, 131, .	1.1	3
3	GUIDELINES TO SIMULATE LINEAR VISCOELASTIC MATERIALS WITH AN ARBITRARY NUMBER OF CHARACTERISTIC TIMES IN THE CONTEXT OF ATOMIC FORCE MISCROSCOPY. <i>Facta Universitatis, Series: Mechanical Engineering</i> , 2021, 19, 133.	2.3	1
4	Linear Viscoelasticity: Review of Theory and Applications in Atomic Force Microscopy. <i>Reports in Mechanical Engineering</i> , 2021, 2, 156-179.	4.9	7
5	Strain-Induced Spatially Resolved Charge Transport in 2H-MoTe2. <i>ACS Applied Electronic Materials</i> , 2021, 3, 3781-3788.	2.0	11
6	A new method for obtaining model-free viscoelastic material properties from atomic force microscopy experiments using discrete integral transform techniques. <i>Beilstein Journal of Nanotechnology</i> , 2021, 12, 1063-1077.	1.5	5
7	Corrosion Resistance of Sulfur-Selenium Alloy Coatings. <i>Advanced Materials</i> , 2021, 33, e2104467.	11.1	21
8	On the frequency dependence of viscoelastic material characterization with intermittent-contact dynamic atomic force microscopy: avoiding mischaracterization across large frequency ranges. <i>Beilstein Journal of Nanotechnology</i> , 2020, 11, 1409-1418.	1.5	3
9	Extracting viscoelastic material parameters using an atomic force microscope and static force spectroscopy. <i>Beilstein Journal of Nanotechnology</i> , 2020, 11, 922-937.	1.5	13
10	Current measurements in the intermittent-contact mode of atomic force microscopy using the Fourier method: a feasibility analysis. <i>Beilstein Journal of Nanotechnology</i> , 2020, 11, 453-465.	1.5	1
11	Soft sample deformation, damage and induced electromechanical property changes in contact- and tapping-mode atomic force microscopy. <i>Surface Topography: Metrology and Properties</i> , 2020, 8, 045004.	0.9	7
12	Few-cycle Regime Atomic Force Microscopy. <i>Scientific Reports</i> , 2019, 9, 12721.	1.6	7
13	Probe assisted localized doping of aluminum into silicon substrates. <i>Journal of Applied Physics</i> , 2019, 125, 075706.	1.1	1
14	Acquisition of time-frequency localized mechanical properties of biofilms and single cells with high spatial resolution. <i>Nanoscale</i> , 2019, 11, 8918-8929.	2.8	7
15	Visible-Light-Responsive Photocatalyst of Graphitic Carbon Nitride for Pathogenic Biofilm Control. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 373-384.	4.0	25
16	Transparent, Anisotropic Biofilm with Aligned Bacterial Cellulose Nanofibers. <i>Advanced Functional Materials</i> , 2018, 28, 1707491.	7.8	142
17	Artifacts in time-resolved Kelvin probe force microscopy. <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 1272-1281.	1.5	10
18	Imaging of viscoelastic soft matter with small indentation using higher eigenmodes in single-eigenmode amplitude-modulation atomic force microscopy. <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 1116-1122.	1.5	5

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19	Theory of Single-Impact Atomic Force Spectroscopy in liquids with material contrast. Scientific Reports, 2018, 8, 7534.	1.6	11
20	Mechanism of humic acid fouling in a photocatalytic membrane system. Journal of Membrane Science, 2018, 563, 531-540.	4.1	46
21	Calculation of standard viscoelastic responses with multiple retardation times through analysis of static force spectroscopy AFM data. Journal of Polymer Science, Part B: Polymer Physics, 2017, 55, 804-813.	2.4	21
22	Imaging of surface nanobubbles by atomic force microscopy in liquids: Influence of drive frequency on the characterization of ultrasoft matter. Microscopy Research and Technique, 2017, 80, 41-49.	1.2	9
23	High-stress study of bioinspired multifunctional PEDOT:PSS/nanoclay nanocomposites using AFM, SEM and numerical simulation. Beilstein Journal of Nanotechnology, 2017, 8, 2069-2082.	1.5	7
24	Material property analytical relations for the case of an AFM probe tapping a viscoelastic surface containing multiple characteristic times. Beilstein Journal of Nanotechnology, 2017, 8, 2230-2244.	1.5	8
25	Analysis and modification of defective surface aggregates on PCDTBT:PCBM solar cell blends using combined Kelvin probe, conductive and bimodal atomic force microscopy. Beilstein Journal of Nanotechnology, 2017, 8, 579-589.	1.5	7
26	Nanoscale effects in the characterization of viscoelastic materials with atomic force microscopy: coupling of a quasi-three-dimensional standard linear solid model with in-plane surface interactions. Beilstein Journal of Nanotechnology, 2016, 7, 554-571.	1.5	19
27	Rhodamine-doped nanoporous polymer films as high-performance anti-reflection coatings and optical filters. Nanoscale, 2016, 8, 17675-17685.	2.8	9
28	Experimental approach for selecting the excitation frequency for maximum compositional contrast in viscous environments for piezo-driven bimodal atomic force microscopy. Journal of Applied Physics, 2016, 119, .	1.1	7
29	Evolution of nano-rheological properties of Nafion® thin films during pH modification by strong base treatment: A static and dynamic force spectroscopy study. Journal of Applied Physics, 2016, 119, .	1.1	9
30	Multifrequency force microscopy using flexural and torsional modes by photothermal excitation in liquid: atomic resolution imaging of calcite $(10\bar{1}4)$. Nanotechnology, 2016, 27, 085702.	1.3	13
31	A simple and efficient quasi 3-dimensional viscoelastic model and software for simulation of tapping-mode atomic force microscopy. Beilstein Journal of Nanotechnology, 2015, 6, 2233-2241.	1.5	9
32	Optimization of the excitation frequency for high probe sensitivity in single-eigenmode and bimodal tapping-mode AFM. Nanotechnology, 2015, 26, 165703.	1.3	11
33	A Strain-Based Model for Mechanical Hemolysis Based on a Coarse-Grained Red Blood Cell Model. Annals of Biomedical Engineering, 2015, 43, 1398-1409.	1.3	29
34	Modeling viscoelasticity through spring-dashpot models in intermittent-contact atomic force microscopy. Beilstein Journal of Nanotechnology, 2014, 5, 2149-2163.	1.5	39
35	Challenges and complexities of multifrequency atomic force microscopy in liquid environments. Beilstein Journal of Nanotechnology, 2014, 5, 298-307.	1.5	17
36	Trade-offs in sensitivity and sampling depth in bimodal atomic force microscopy and comparison to the trimodal case. Beilstein Journal of Nanotechnology, 2014, 5, 1144-1151.	1.5	14

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37	Multi-frequency tapping-mode atomic force microscopy beyond three eigenmodes in ambient air. Beilstein Journal of Nanotechnology, 2014, 5, 1637-1648.	1.5	19
38	Probing viscoelastic surfaces with bimodal tapping-mode atomic force microscopy: Underlying physics and observables for a standard linear solid model. Beilstein Journal of Nanotechnology, 2014, 5, 1649-1663.	1.5	13
39	Frequency, amplitude, and phase measurements in contact resonance atomic force microscopies. Beilstein Journal of Nanotechnology, 2014, 5, 278-288.	1.5	25
40	Energy transfer between eigenmodes in multimodal atomic force microscopy. Nanotechnology, 2014, 25, 475701.	1.3	25
41	Friction imprint effect in mechanically cleaved BaTiO ₃ (001). Journal of Applied Physics, 2014, 116, .	1.1	6
42	Pseudomagnetic fields in a locally strained graphene drumhead. Physical Review B, 2014, 90, .	1.1	40
43	Influence of fabrication parameters on bond strength of adhesively bonded flip-chip interconnects. Journal of Adhesion Science and Technology, 2014, 28, 1167-1191.	1.4	2
44	Nanoscale mechanics by tomographic contact resonance atomic force microscopy. Nanoscale, 2014, 6, 962-969.	2.8	32
45	Selection of higher eigenmode amplitude based on dissipated power and virial contrast in bimodal atomic force microscopy. Journal of Applied Physics, 2014, 116, .	1.1	18
46	Direct Observation of Amyloid Nucleation under Nanomechanical Stretching. ACS Nano, 2013, 7, 7734-7743.	7.3	19
47	Nanoscale Interfacial Friction and Adhesion on Supported versus Suspended Monolayer and Multilayer Graphene. Langmuir, 2013, 29, 235-243.	1.6	112
48	Visualizing the Subsurface of Soft Matter: Simultaneous Topographical Imaging, Depth Modulation, and Compositional Mapping with Triple Frequency Atomic Force Microscopy. ACS Nano, 2013, 7, 10387-10396.	7.3	102
49	Amplitude modulation dynamic force microscopy imaging in liquids with atomic resolution: comparison of phase contrasts in single and dual mode operation. Nanotechnology, 2013, 24, 135702.	1.3	40
50	Computational study of tip apex symmetry characterization in high-resolution atomic force microscopy. Journal Physics D: Applied Physics, 2013, 46, 155307.	1.3	6
51	Towards 4-dimensional atomic force spectroscopy using the spectral inversion method. Beilstein Journal of Nanotechnology, 2013, 4, 87-93.	1.5	8
52	Bimodal atomic force microscopy driving the higher eigenmode in frequency-modulation mode: Implementation, advantages, disadvantages and comparison to the open-loop case. Beilstein Journal of Nanotechnology, 2013, 4, 198-207.	1.5	34
53	Multi-Frequency Atomic Force Microscopy Combining Amplitude- and Frequency-Modulation Techniques. Materials Research Society Symposia Proceedings, 2012, 1422, 19.	0.1	2
54	Imaging of subatomic electron cloud interactions: Effect of higher harmonics processing in noncontact atomic force microscopy. Applied Physics Letters, 2012, 100, 163104.	1.5	5

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55	Generalized stacking fault energy surfaces in the molecular crystal $\hat{\Gamma}$ RDX. Philosophical Magazine, 2012, 92, 3036-3050.	0.7	29
56	Directed patterning of the self-assembled silk-elastin-like nanofibers using a nanomechanical stimulus. Chemical Communications, 2012, 48, 10654.	2.2	17
57	Exploring Dynamic Non-Idealities in Multi-Frequency Atomic Force Microscopy. , 2012, , .		0
58	Analysis of the contrast mechanism in bimodal atomic force microscopy combining amplitude modulation and band excitation. Journal of Applied Physics, 2012, 111, 054909.	1.1	4
59	Modeling of the major gas vesicle protein, GvpA: From protein sequence to vesicle wall structure. Journal of Structural Biology, 2012, 179, 18-28.	1.3	25
60	Characterization of surface stiffness and probe-sample dissipation using the band excitation method of atomic force microscopy: a numerical analysis. Nanotechnology, 2012, 23, 015706.	1.3	23
61	Subatomic Resolution in Noncontact Atomic Force Microscopy: Electron Cloud Interactions or Harmonics Processing Artifacts?. , 2012, , .		1
62	Multifrequency Imaging in the Intermittent Contact Mode of Atomic Force Microscopy: Beyond Phase Imaging. Small, 2012, 8, 1264-1269.	5.2	26
63	Electromechanical Properties of Graphene Drumheads. Science, 2012, 336, 1557-1561.	6.0	264
64	Simulations of High-Pressure Phases in RDX. Journal of Physical Chemistry B, 2011, 115, 4378-4386.	1.2	108
65	On Mapping Subangstrom Electron Clouds with Force Microscopy. Nano Letters, 2011, 11, 5026-5033.	4.5	22
66	Mapping of conservative and dissipative interactions in bimodal atomic force microscopy using open-loop and phase-locked-loop control of the higher eigenmode. Applied Physics Letters, 2011, 99, .	1.5	61
67	Trimodal Tapping-Mode Atomic Force Microscopy: A Possible Method for Simultaneous Measurement of Conservative and Dissipative Interactions. , 2011, , .		0
68	Numerical Analysis of the Band Excitation AFM Method: Examining the Characteristics of the Excitation Signals and the Corresponding Response Behavior at the Cantilever Tip. , 2011, , .		0
69	Utilizing Off-Resonance and Dual-Frequency Excitation to Distinguish Attractive and Repulsive Surface Forces in Atomic Force Microscopy. Journal of Computational and Nonlinear Dynamics, 2011, 6, .	0.7	9
70	Nanomechanical Stimulus Accelerates and Directs the Self-Assembly of Silk-Elastin-like Nanofibers. Journal of the American Chemical Society, 2011, 133, 1745-1747.	6.6	35
71	Utilization of Simple Scaling Laws for Modulating Tip-Sample Interaction Forces in Aqueous Environment AFM Characterization: Application to the Self-Assembly of Protein Polymers. , 2011, , .		0
72	Utilization of simple scaling laws for modulating tip-sample peak forces in atomic force microscopy characterization in liquid environments. Journal of Applied Physics, 2011, 110, 094904.	1.1	16

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73	Numerical Analysis of Sub-Atomic AFM Imaging in Ultra-High Vacuum: Coupling Quantum Mechanics With Continuum Dynamics. , 2011, , .		0
74	3-Dimensional Force Curve and Dissipation Model Acquisition Using the Spectral Inversion Method in Tapping Mode AFM. , 2011, , .		0
75	Corrigendum on 'Numerical analysis of dynamic force spectroscopy using the torsional harmonic cantilever'. Nanotechnology, 2010, 21, 339804-339804.	1.3	0
76	Numerical analysis of dynamic force spectroscopy using the torsional harmonic cantilever. Nanotechnology, 2010, 21, 075702.	1.3	29
77	Single-cantilever dual-frequency-modulation atomic force microscopy. Measurement Science and Technology, 2010, 21, 089804.	1.4	0
78	Triple-frequency intermittent contact atomic force microscopy characterization: Simultaneous topographical, phase, and frequency shift contrast in ambient air. Journal of Applied Physics, 2010, 108, .	1.1	61
79	Numerical analysis of dynamic force spectroscopy using a dual-oscillator sensor. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2010, 28, C4E1-C4E11.	0.6	9
80	Exploration of AFM Imaging Artifacts Occurring at Sharp Surface Features When Using Short Carbon Nanotube Probes and Possible Mitigation With Real-Time Force Spectroscopy. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2010, 132, 030904.	1.3	3
81	Frequency response of higher cantilever eigenmodes in bimodal and trimodal tapping mode atomic force microscopy. Measurement Science and Technology, 2010, 21, 125502.	1.4	69
82	Development of a ReaxFF Reactive Force Field for Aqueous Chloride and Copper Chloride. Journal of Physical Chemistry A, 2010, 114, 3556-3568.	1.1	55
83	Enhanced Topographical Characterization of Sharp Step Edges With Simultaneous AFM Imaging and Force Spectroscopy. , 2010, , .		0
84	Calculation of Isothermal Intrinsic Compressibility and Compression of GvpA Protein in Halobacterium sp. NRC-1 Using Molecular Modeling and Dynamics. , 2009, , .		0
85	Single-cantilever dual-frequency-modulation atomic force microscopy. Measurement Science and Technology, 2009, 20, 015501.	1.4	23
86	Computational Development of Single- and Dual-Frequency Modulation Atomic Force Spectroscopy for Ambient Air Applications. , 2009, , .		0
87	Dual frequency modulation with two cantilevers in series: a possible means to rapidly acquire tip-sample interaction force curves with dynamic AFM. Measurement Science and Technology, 2008, 19, 055502.	1.4	15
88	Characterization of deep nanoscale surface trenches with AFM using thin carbon nanotube probes in amplitude-modulation and frequency-force-modulation modes. Measurement Science and Technology, 2008, 19, 015503.	1.4	30
89	Eliminating bistability and reducing sample damage through frequency and amplitude modulation in tapping-mode atomic force microscopy. Measurement Science and Technology, 2007, 18, 592-600.	1.4	23
90	Frequency and force modulation atomic force microscopy: low-impact tapping-mode imaging without bistability. Measurement Science and Technology, 2007, 18, L9-L14.	1.4	12

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91	Real-Time Simulation of Isolated Biomolecule Characterization with Frequency and Force Modulation Atomic Force Microscopy. <i>Journal of Physical Chemistry C</i> , 2007, 111, 10029-10034.	1.5	16
92	Single Biomolecule Imaging with Frequency and Force Modulation in Tapping-Mode Atomic Force Microscopy. <i>Journal of Physical Chemistry B</i> , 2007, 111, 2125-2129.	1.2	16
93	Quantum Mechanics Calculations of the Thermodynamically Controlled Coverage and Structure of Alkyl Monolayers on Si(111) Surfaces. <i>Journal of Physical Chemistry B</i> , 2006, 110, 14842-14848.	1.2	32
94	Theoretical Investigation of the Structure and Coverage of the Si(111)-OCH ₃ Surface. <i>Journal of Physical Chemistry B</i> , 2006, 110, 8171-8175.	1.2	23
95	Scanning Tunneling Microscopy of Ethylated Si(111) Surfaces Prepared by a Chlorination/Alkylation Process. <i>Journal of Physical Chemistry B</i> , 2006, 110, 23898-23903.	1.2	32
96	Chlorination-Methylation of the Hydrogen-Terminated Silicon(111) Surface Can Induce a Stacking Fault in the Presence of Etch Pits. <i>Journal of the American Chemical Society</i> , 2006, 128, 3850-3851.	6.6	29
97	Linear Artificial Molecular Muscles. <i>Journal of the American Chemical Society</i> , 2005, 127, 9745-9759.	6.6	660
98	Mechanisms of Single-Walled Carbon Nanotube Probe-Sample Multistability in Tapping Mode AFM Imaging. <i>Journal of Physical Chemistry B</i> , 2005, 109, 11493-11500.	1.2	25
99	Density Functional Theory Study of the Geometry, Energetics, and Reconstruction Process of Si(111) Surfaces. <i>Langmuir</i> , 2005, 21, 12404-12414.	1.6	21
100	Influence of the Carbon Nanotube Probe Tilt Angle on the Effective Probe Stiffness and Image Quality in Tapping-Mode Atomic Force Microscopy. <i>Journal of Physical Chemistry B</i> , 2005, 109, 16658-16664.	1.2	24
101	Low-Temperature STM Images of Methyl-Terminated Si(111) Surfaces. <i>Journal of Physical Chemistry B</i> , 2005, 109, 671-674.	1.2	124
102	Design of a nanomechanical fluid control valve based on functionalized silicon cantilevers: coupling molecular mechanics with classical engineering design. <i>Nanotechnology</i> , 2004, 15, 1405-1415.	1.3	28
103	Influence of Elastic Deformation on Single-Wall Carbon Nanotube Atomic Force Microscopy Probe Resolution. <i>Journal of Physical Chemistry B</i> , 2004, 108, 13613-13618.	1.2	37