Javier Tamayo

List of Publications by Year
in descending order

112 papers	6,292 citations	71102 41 h-index	69250 77 g-index
115 all docs	115 docs citations	115 times ranked	5693 citing authors

#	Article	IF	Citations
1	Hydrodynamic assisted multiparametric particle spectrometry. Scientific Reports, 2021, 11, 3535.	3.3	4
2	Nanomechanical Molecular Mass Sensing Using Suspended Microchannel Resonators. Sensors, 2021, 21, 3337.	3.8	7
3	High Dynamic Range Nanowire Resonators. Nano Letters, 2021, 21, 6617-6624.	9.1	19
4	A Review on Theory and Modelling of Nanomechanical Sensors for Biological Applications. Processes, 2021, 9, 164.	2.8	18
5	Effects of energy metabolism on the mechanical properties of breast cancer cells. Communications Biology, 2020, 3, 590.	4.4	25
6	Effect of particle adsorption on the eigenfrequencies of nano-mechanical resonators. Journal of Applied Physics, 2020, 128, .	2.5	7
7	Optical Transduction for Vertical Nanowire Resonators. Nano Letters, 2020, 20, 2359-2369.	9.1	13
8	Optomechanical detection of vibration modes of a single bacterium. Nature Nanotechnology, 2020, 15, 469-474.	31.5	90
9	Real-Time Particle Spectrometry in Liquid Environment Using Microfluidic-Nanomechanical Resonators. , 2019, , .		2
10	Development of a methodology for reversible chemical modification of silicon surfaces with application in nanomechanical biosensors. Biosensors and Bioelectronics, 2019, 137, 287-293.	10.1	4
11	Coherent Optical Transduction of Suspended Microcapillary Resonators for Multi-Parameter Sensing Applications. Sensors, 2019, 19, 5069.	3.8	9
12	Mechano-Optical Analysis of Single Cells with Transparent Microcapillary Resonators. ACS Sensors, 2019, 4, 3325-3332.	7.8	18
13	Optomechanical devices for deep plasma cancer proteomics. Seminars in Cancer Biology, 2018, 52, 26-38.	9.6	32
14	Direct Detection of OXA-48 Carbapenemase Gene in Lysate Samples through Changes in Mechanical Properties of DNA Monolayers upon Hybridization. Analytical Chemistry, 2018, 90, 968-973.	6.5	3
15	Effect of surface stress induced curvature on the eigenfrequencies of microcantilever plates. AIP Advances, 2018, 8, .	1.3	14
16	Nanomechanical Plasmon Spectroscopy of Single Gold Nanoparticles. Nano Letters, 2018, 18, 7165-7170.	9.1	21
17	Effect of water-DNA interactions on elastic properties of DNA self-assembled monolayers. Scientific Reports, 2017, 7, 536.	3.3	33
18	Optimization of the readout of microdrum optomechanical resonators. Microelectronic Engineering, 2017, 183-184, 37-41.	2.4	5

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19	Ultrasensitive detection of HIV-1 p24 antigen by a hybrid nanomechanical-optoplasmonic platform with potential for detecting HIV-1 at first week after infection. PLoS ONE, 2017, 12, e0171899.	2.5	50
20	Spatially Multiplexed Micro-Spectrophotometry in Bright Field Mode for Thin Film Characterization. Sensors, 2016, 16, 926.	3.8	1
21	Mass and stiffness spectrometry of nanoparticles and whole intact bacteria by multimode nanomechanical resonators. Nature Communications, 2016, 7, 13452.	12.8	91
22	How two-dimensional bending can extraordinarily stiffen thin sheets. Scientific Reports, 2016, 6, 29627.	3.3	50
23	Spatially multiplexed dark-field microspectrophotometry for nanoplasmonics. Scientific Reports, 2016, 6, 22836.	3.3	22
24	Effect of Actin Organization on the Stiffness of Living Breast Cancer Cells Revealed by Peak-Force Modulation Atomic Force Microscopy. ACS Nano, 2016, 10, 3365-3374.	14.6	197
25	Label-Free DNA-Based Detection of Mycobacterium tuberculosis and Rifampicin Resistance through Hydration Induced Stress in Microcantilevers. Analytical Chemistry, 2015, 87, 1494-1498.	6.5	22
26	Highly Sensitive Measurement of Liquid Density in Air Using Suspended Microcapillary Resonators. Sensors, 2015, 15, 7650-7657.	3.8	23
27	Detection of cancer biomarkers in serum by merging nanomechanics and optoplasmonics. , 2015, , .		0
28	Optomechanics to the rescue. Nature Nanotechnology, 2015, 10, 738-739.	31.5	7
29	Detection of cancer biomarkers in serum using a hybrid mechanical and optoplasmonic nanosensor. Nature Nanotechnology, 2014, 9, 1047-1053.	31.5	221
30	Hydration Induced Stress on DNA Monolayers Grafted on Microcantilevers. Langmuir, 2014, 30, 10962-10969.	3.5	18
31	Monitoring swelling and deswelling of thin polymer films by microcantilever sensors. Sensors and Actuators B: Chemical, 2014, 204, 602-610.	7.8	12
32	Ultrasensitive thermometer for atmospheric pressure operation based on a micromechanical resonator. Sensors and Actuators B: Chemical, 2014, 202, 339-345.	7.8	6
33	Physics of Nanomechanical Spectrometry of Viruses. Scientific Reports, 2014, 4, 6051.	3.3	36
34	Atomic force microscopy reveals two phases in single stranded DNA self-assembled monolayers. Nanoscale, 2013, 5, 7425.	5.6	21
35	Biosensors based on nanomechanical systems. Chemical Society Reviews, 2013, 42, 1287-1311.	38.1	334
36	Tackling reproducibility in microcantilever biosensors: a statistical approach for sensitive and specific end-point detection of immunoreactions. Analyst, The, 2013, 138, 863-872.	3.5	25

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37	Silicon nanowires: where mechanics and optics meet at the nanoscale. Scientific Reports, 2013, 3, 3445.	3.3	36
38	Tapered silicon nanowires for enhanced nanomechanical sensing. Applied Physics Letters, 2013, 103, .	3.3	19
39	Optical back-action in silicon nanowire resonators: bolometric versus radiation pressure effects. New Journal of Physics, 2013, 15, 035001.	2.9	20
40	Horizontally patterned Si nanowire growth for nanomechanical devices. Nanotechnology, 2013, 24, 095303.	2.6	16
41	Imaging the surface stress and vibration modes of a microcantilever by laser beam deflection microscopy. Nanotechnology, 2012, 23, 315501.	2.6	36
42	Stepwise motion of a microcantilever driven by the hydrolysis of viral ATPases. Nanotechnology, 2012, 23, 015501.	2.6	5
43	Challenges for nanomechanical sensors in biological detection. Nanoscale, 2012, 4, 4925.	5.6	92
44	Interaction of viral ATPases with nucleotides measured with a microcantilever. Sensors and Actuators B: Chemical, 2012, 171-172, 263-270.	7.8	1
45	Optomechanics with Silicon Nanowires by Harnessing Confined Electromagnetic Modes. Nano Letters, 2012, 12, 932-937.	9.1	40
46	Quantification of the surface stress in microcantilever biosensors: revisiting Stoneyâ€™s equation. Nanotechnology, 2012, 23, 475702.	2.6	40
47	Monitoring the hydration of DNA self-assembled monolayers using an extensional nanomechanical resonator. Lab on A Chip, 2012, 12, 2069.	6.0	10
48	Shedding Light on Axial Stress Effect on Resonance Frequencies of Nanocantilevers. ACS Nano, 2011, 5, 4269-4275.	14.6	34
49	Exponential tuning of the coupling constant of coupled microcantilevers by modifying their separation. Applied Physics Letters, 2011, 98, .	3.3	37
50	Simultaneous imaging of the topography and dynamic properties of nanomechanical systems by optical beam deflection microscopy. Journal of Applied Physics, 2011, 109, 064315.	2.5	7
51	Observation of spermidine-induced attractive forces in self-assembled monolayers of single stranded DNA using a microcantilever sensor. Applied Physics Letters, 2011, 98, .	3.3	12
52	Nanomechanical mass sensing and stiffness spectrometry based on two-dimensional vibrations of resonant nanowires. Nature Nanotechnology, 2010, 5, 641-645.	31.5	235
53	High throughput optical readout of dense arrays of nanomechanical systems for sensing applications. Review of Scientific Instruments, 2010, 81, 125109.	1.3	42
54	Stress and DNA Assembly Differences on Cantilevers Gold Coated by Resistive and E-Beam Evaporation Techniques. Langmuir, 2009, 25, 10633-10638.	3.5	16

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55	Arrays of Dual Nanomechanical Resonators for Selective Biological Detection. Analytical Chemistry, 2009, 81, 2274-2279.	6.5	58
56	Mass Sensing Based on Deterministic and Stochastic Responses of Elastically Coupled Nanocantilevers. Nano Letters, 2009, 9, 4122-4127.	9.1	104
57	Label-free detection of DNA hybridization based on hydration-induced tension in nucleic acid films. Nature Nanotechnology, 2008, 3, 301-307.	31.5	194
58	Detection of bacteria based on the thermomechanical noise of a nanomechanical resonator: origin of the response and detection limits. Nanotechnology, 2008, 19, 035503.	2.6	63
59	Phototermal self-excitation of nanomechanical resonators in liquids. Applied Physics Letters, 2008, 92, 173108.	3.3	62
60	Underlying mechanisms of the self-sustained oscillation of a nanomechanical stochastic resonator in a liquid. Physical Review B, 2007, 76, .	3.2	23
61	Role of the gold film nanostructure on the nanomechanical response of microcantilever sensors. Journal of Applied Physics, 2007, 101, 034904.	2.5	45
62	Study of the origin of bending induced by bimetallic effect on microcantilever. Sensors, 2007, 7, 1757-1765.	3.8	52
63	Measurement of the Mass and Rigidity of Adsorbates on a Microcantilever Sensor. Sensors, 2007, 7, 1834-1845.	3.8	27
64	Inside track weighs in with solution. Nature Nanotechnology, 2007, 2, 342-343.	31.5	1
65	Photothermal excitation of microcantilevers in liquids. Journal of Applied Physics, 2006, 99, 124904.	2.5	105
66	Effect of the adsorbate stiffness on the resonance response of microcantilever sensors. Applied Physics Letters, 2006, 89, 224104.	3.3	151
67	A highly sensitive microsystem based on nanomechanical biosensors for genomics applications. Sensors and Actuators B: Chemical, 2006, 118, 2-10.	7.8	68
68	Origin of the response of nanomechanical resonators to bacteria adsorption. Journal of Applied Physics, 2006, 100, 106105.	2.5	106
69	Low-noise polymeric nanomechanical biosensors. Applied Physics Letters, 2006, 88, 113901.	3.3	66
70	T-shaped microcantilever sensor with reduced deflection offset. Applied Physics Letters, 2006, 89, 094109.	3.3	16
71	Dimension dependence of the thermomechanical noise of microcantilevers. Journal of Applied Physics, 2006, 99, 024910.	2.5	24
72	Study of the Adsorption of Sulfur-Derivatized Single Stranded DNA on Gold by Atomic Force Microscopy and the Cantilever Bending Technique. Sensor Letters, 2006, 4, 275-280.	0.4	2

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73	Optical sequential readout of microcantilever arrays for biological detection. Sensors and Actuators B: Chemical, 2005, 106, 687-690.	7.8	54
74	Highly sensitive polymer-based cantilever-sensors for DNA detection. Ultramicroscopy, 2005, 105, 215-222.	1.9	153
75	Real-time profile of microcantilevers for sensing applications. Applied Physics Letters, 2005, 87, 234102.	3.3	45
76	Study of the noise of micromechanical oscillators under quality factor enhancement via driving force control. Journal of Applied Physics, 2005, 97, 044903.	2.5	71
77	Technological Platforms Based on Micro/Nanobiosensors as Early Warning Systems for Biological Warfare. , 2005, , 175-197.		1
78	Nanomechanics of the Formation of DNA Self-Assembled Monolayers and Hybridization on Microcantilevers. Langmuir, 2004, 20, 9663-9668.	3.5	97
79	Development of nanomechanical biosensors for detection of the pesticide DDT. Biosensors and Bioelectronics, 2003, 18, 649-653.	10.1	155
80	Digital tuning of the quality factor of micromechanical resonant biological detectors. Sensors and Actuators B: Chemical, 2003, 89, 33-39.	7.8	23
81	Structure of human chromosomes studied by atomic force microscopy. Journal of Structural Biology, 2003, 141, 198-207.	2.8	21
82	Structure of human chromosomes studied by atomic force microscopy. Journal of Structural Biology, 2003, 141, 189-197.	2.8	18
83	Decrease of the resonance bandwidth of micromechanical oscillators by phase control of the driving force. Applied Physics Letters, 2003, 82, 2919-2921.	3.3	12
84	Nanomechanics for specific biological detection. , 2003, 5118, 197.		3
85	Polymeric Cantilever Arrays for Biosensing Applications. Sensor Letters, 2003, 1, 20-24.	0.4	68
86	Scanning Probe Microscopy for Chromosomal Research.. Archives of Histology and Cytology, 2002, 65, 369-376.	0.2	8
87	High-Q Dynamic Force Microscopy in Liquid and Its Application to Living Cells. Biophysical Journal, 2001, 81, 526-537.	0.5	140
88	Interpretation of Contrast in Tapping Mode AFM and Shear Force Microscopy. A Study of Nafion. Langmuir, 2001, 17, 349-360.	3.5	195
89	Chemical sensors and biosensors in liquid environment based on microcantilevers with amplified quality factor. Ultramicroscopy, 2001, 86, 167-173.	1.9	175
90	Human chromosome structure studied by scanning force microscopy after an enzymatic digestion of the covering cell material. Ultramicroscopy, 2000, 82, 245-251.	1.9	36

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91	Piconewton regime dynamic force microscopy in liquid. Applied Physics Letters, 2000, 77, 582-584.	3.3	137
92	Active Quality Factor Control in Liquids for Force Spectroscopy. Langmuir, 2000, 16, 7891-7894.	3.5	121
93	Phase contrast and surface energy hysteresis in tapping mode scanning force microsopy. Surface and Interface Analysis, 1999, 27, 312-316.	1.8	132
94	Energy dissipation in tapping-mode scanning force microscopy with low quality factors. Applied Physics Letters, 1999, 75, 3569-3571.	3.3	62
95	Selective Cleaning of the Cell Debris in Human Chromosome Preparations Studied by Scanning Force Microscopy. Journal of Structural Biology, 1999, 128, 200-210.	2.8	28
96	Phase contrast in tapping-mode scanning force microscopy. Applied Physics A: Materials Science and Processing, 1998, 66, S309-S312.	2.3	56
97	Buffer layer morphology effects on the ordering of epitaxial FePd(001) thin films. Acta Materialia, 1998, 46, 2299-2303.	7.9	4
98	Characterization of semiconductor heterostructures and quantum dots by friction force microscopy. Applied Surface Science, 1998, 123-124, 339-342.	6.1	1
99	Relationship between phase shift and energy dissipation in tapping-mode scanning force microscopy. Applied Physics Letters, 1998, 73, 2926-2928.	3.3	277
100	Submonolayer sensitivity of InSb on InP determined by friction-force microscopy. Physical Review B, 1997, 55, R13436-R13439.	3.2	13
101	Effects of elastic and inelastic interactions on phase contrast images in tapping-mode scanning force microscopy. Applied Physics Letters, 1997, 71, 2394-2396.	3.3	267
102	Scanning tunneling microscopy imaging and selective modification of purple membranes. International Journal of Imaging Systems and Technology, 1997, 8, 168-174.	4.1	6
103	Growth and characterization of self-organized InSb quantum dots and quantum dashes. Journal of Crystal Growth, 1997, 175-176, 725-729.	1.5	6
104	Compositional Characterization of III-V Semiconductor Heterostructures by Friction Force Microscopy. , 1997, , 275-282.		1
105	The Interaction of DNA with Bacteriophage Ï†29 Connector: A Study by AFM and TEM. Journal of Structural Biology, 1996, 116, 390-398.	2.8	25
106	Deformation, Contact Time, and Phase Contrast in Tapping Mode Scanning Force Microscopy. Langmuir, 1996, 12, 4430-4435.	3.5	451
107	Friction force microscopy characterization of semiconductor heterostructures. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1996, 42, 122-126.	3.5	3
108	Transition from selfâ€organized InSb quantumâ€dots to quantum dashes. Applied Physics Letters, 1996, 69, 2674-2676.	3.3	53

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109	Compositional mapping of semiconductor structures by friction force microscopy. Applied Physics Letters, 1996, 68, 2297-2299.	3.3	16
110	Scanning tunneling microscopy modification of purple membranes. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1995, 13, 1737-1741.	2.1	0
111	Physical Parameters That Control the Imaging of Purple Membranes with the Scanning Tunneling Microscope. Langmuir, 1995, 11, 2109-2114.	3.5	17
112	A very low current scanning tunneling microscope. Review of Scientific Instruments, 1995, 66, 4876-4879.	1.3	13