

# Gabriel Gomila

## List of Publications by Year in descending order

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104  
papers

3,274  
citations

172457

29  
h-index

155660

55  
g-index

107  
all docs

107  
docs citations

107  
times ranked

3566  
citing authors

#	ARTICLE	IF	CITATIONS
1	Anomalous low dielectric constant of confined water. <i>Science</i> , 2018, 360, 1339-1342.	12.6	627
2	Direct measurement of the dielectric polarization properties of DNA. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, E3624-30.	7.1	160
3	Nanoscale Measurement of the Dielectric Constant of Supported Lipid Bilayers in Aqueous Solutions with Electrostatic Force Microscopy. <i>Biophysical Journal</i> , 2013, 104, 1257-1262.	0.5	149
4	Dielectric-constant measurement of thin insulating films at low frequency by nanoscale capacitance microscopy. <i>Applied Physics Letters</i> , 2007, 91, .	3.3	127
5	Label-free identification of single dielectric nanoparticles and viruses with ultraweak polarization forces. <i>Nature Materials</i> , 2012, 11, 808-816.	27.5	120
6	Calibrated complex impedance and permittivity measurements with scanning microwave microscopy. <i>Nanotechnology</i> , 2014, 25, 145703.	2.6	117
7	Quantitative Nanoscale Dielectric Microscopy of Single-Layer Supported Biomembranes. <i>Nano Letters</i> , 2009, 9, 1604-1608.	9.1	104
8	A novel detection strategy for odorant molecules based on controlled bioengineering of rat olfactory receptor I7. <i>Biosensors and Bioelectronics</i> , 2007, 22, 1550-1555.	10.1	95
9	Nanoscale capacitance microscopy of thin dielectric films. <i>Journal of Applied Physics</i> , 2008, 104, .	2.5	82
10	Quantifying the dielectric constant of thick insulators using electrostatic force microscopy. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	81
11	Nanoscale capacitance imaging with attofarad resolution using ac current sensing atomic force microscopy. <i>Nanotechnology</i> , 2006, 17, 4581-4587.	2.6	76
12	Low cost micro-Coulter counter with hydrodynamic focusing. <i>Microfluidics and Nanofluidics</i> , 2007, 3, 171-176.	2.2	74
13	High-speed particle detection in a micro-Coulter counter with two-dimensional adjustable aperture. <i>Biosensors and Bioelectronics</i> , 2008, 24, 290-296.	10.1	69
14	Nanoscale Electric Permittivity of Single Bacterial Cells at Gigahertz Frequencies by Scanning Microwave Microscopy. <i>ACS Nano</i> , 2016, 10, 280-288.	14.6	67
15	Quantitative dielectric constant measurement of thin films by DC electrostatic force microscopy. <i>Nanotechnology</i> , 2009, 20, 395702.	2.6	65
16	Quantifying the dielectric constant of thick insulators by electrostatic force microscopy: effects of the microscopic parts of the probe. <i>Nanotechnology</i> , 2012, 23, 205703.	2.6	63
17	Force measurements on natural membrane nanovesicles reveal a composition-independent, high Young's modulus. <i>Nanoscale</i> , 2014, 6, 2275.	5.6	61
18	Study of Langmuir and Langmuir-Blodgett Films of Odorant-Binding Protein/Amphiphile for Odorant Biosensors. <i>Langmuir</i> , 2005, 21, 4058-4065.	3.5	55

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19	Electric Polarization Properties of Single Bacteria Measured with Electrostatic Force Microscopy. ACS Nano, 2014, 8, 9843-9849.	14.6	52
20	Finite-size effects and analytical modeling of electrostatic force microscopy applied to dielectric films. Nanotechnology, 2014, 25, 255702.	2.6	46
21	Stochastic Resonance in Noisy Nondynamical Systems. Physical Review Letters, 1998, 81, 14-17.	7.8	44
22	Advances in the production, immobilization, and electrical characterization of olfactory receptors for olfactory nanobiosensor development. Sensors and Actuators B: Chemical, 2006, 116, 66-71.	7.8	42
23	Relation for the nonequilibrium population of the interface states: Effects on the bias dependence of the ideality factor. Journal of Applied Physics, 1997, 81, 2674-2681.	2.5	40
24	Immobilization of native membrane-bound rhodopsin on biosensor surfaces. Biochimica Et Biophysica Acta - General Subjects, 2005, 1724, 324-332.	2.4	37
25	Bioelectronic Recordings of Cardiomyocytes with Accumulation Mode Electrolyte Gated Organic Field Effect Transistors. Biosensors and Bioelectronics, 2020, 150, 111844.	10.1	36
26	Electron transport through supported biomembranes at the nanoscale by conductive atomic force microscopy. Nanotechnology, 2007, 18, 465503.	2.6	34
27	Nanoscale electrical conductivity of the purple membrane monolayer. Physical Review E, 2007, 76, 041919.	2.1	32
28	Dynamic electrostatic force microscopy in liquid media. Applied Physics Letters, 2012, 101, .	3.3	32
29	Efficient long-range conduction in cable bacteria through nickel protein wires. Nature Communications, 2021, 12, 3996.	12.8	32
30	Nanoscale electric polarizability of ultrathin bilayers on insulating substrates by electrostatic force microscopy. Nanoscale, 2015, 7, 18327-18336.	5.6	30
31	Quantitative electrostatic force microscopy with sharp silicon tips. Nanotechnology, 2014, 25, 495701.	2.6	22
32	Semiclassical theory of shot noise in ballistic $n$ -semiconductor structures: Relevance of Pauli and long-range Coulomb correlations. Physical Review B, 2002, 66, .	3.2	21
33	Nanoscale dielectric microscopy of non-planar samples by lift-mode electrostatic force microscopy. Nanotechnology, 2016, 27, 405706.	2.6	21
34	Theory of amplitude modulated electrostatic force microscopy for dielectric measurements in liquids at MHz frequencies. Nanotechnology, 2013, 24, 415709.	2.6	20
35	Internal Hydration Properties of Single Bacterial Endospores Probed by Electrostatic Force Microscopy. ACS Nano, 2016, 10, 11327-11336.	14.6	20
36	Asymptotic analysis of the Gunn effect with realistic boundary conditions. Physical Review E, 1997, 56, 1500-1510.	2.1	19

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37	Nanoscale Mapping of the Conductivity and Interfacial Capacitance of an Electrolyte-Gated Organic Field-Effect Transistor under Operation. <i>Advanced Functional Materials</i> , 2021, 31, 2008032.	14.9	19
38	Nondestructive thickness measurement of biological layers at the nanoscale by simultaneous topography and capacitance imaging. <i>Applied Physics Letters</i> , 2007, 91, 063111.	3.3	18
39	Nanobiosensors based on individual olfactory receptors. <i>Analog Integrated Circuits and Signal Processing</i> , 2008, 57, 197-203.	1.4	18
40	Ultrathin Spin-Coated Dioleoylphosphatidylcholine Lipid Layers in Dry Conditions: A Combined Atomic Force Microscopy and Nanomechanical Study. <i>Langmuir</i> , 2011, 27, 13165-13172.	3.5	18
41	Nanoscale imaging of the growth and division of bacterial cells on planar substrates with the atomic force microscope. <i>Ultramicroscopy</i> , 2015, 154, 29-36.	1.9	18
42	Shot Noise in Linear Macroscopic Resistors. <i>Physical Review Letters</i> , 2004, 92, 226601.	7.8	17
43	Deflection-voltage curve modelling in atomic force microscopy and its use in DC electrostatic manipulation of gold nanoparticles. <i>Nanotechnology</i> , 2007, 18, 015503.	2.6	17
44	Direct mapping of the electric permittivity of heterogeneous non-planar thin films at gigahertz frequencies by scanning microwave microscopy. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 3884-3893.	2.8	17
45	Dielectric constant of flagellin proteins measured by scanning dielectric microscopy. <i>Nanoscale</i> , 2018, 10, 19188-19194.	5.6	16
46	Extension of the impedance field method to the noise analysis of a semiconductor junction: Analytical approach. <i>Journal of Applied Physics</i> , 1998, 83, 2610-2618.	2.5	15
47	Non-equilibrium thermodynamics of thermionic emission processes in abrupt semiconductor junctions, including the effects of surface states. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1996, 233, 208-220.	2.6	14
48	Effects of interface states on the non-stationary transport properties of Schottky contacts and metal-insulator-semiconductor tunnel diodes. <i>Journal Physics D: Applied Physics</i> , 1999, 32, 64-71.	2.8	13
49	Structural and nanomechanical effects of cholesterol in binary and ternary spin-coated single lipid bilayers in dry conditions. <i>Colloids and Surfaces B: Biointerfaces</i> , 2014, 116, 295-302.	5.0	13
50	Local noise analysis of a Schottky contact: Combined thermionic-emission-diffusion theory. <i>Journal of Applied Physics</i> , 1998, 83, 2619-2630.	2.5	12
51	Size effects on generation-recombination noise. <i>Applied Physics Letters</i> , 2002, 81, 4380-4382.	3.3	12
52	Diffusion-controlled deposition of natural nanovesicles containing G-protein coupled receptors for biosensing platforms. <i>Soft Matter</i> , 2012, 8, 11632.	2.7	12
53	Mapping the dielectric constant of a single bacterial cell at the nanoscale with scanning dielectric force volume microscopy. <i>Nanoscale</i> , 2019, 11, 20809-20819.	5.6	12
54	Anomalous crossover between thermal and shot noise in macroscopic diffusive conductors. <i>Physical Review B</i> , 2000, 62, 8068-8071.	3.2	11

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55	Quantification of the dielectric constant of single non-spherical nanoparticles from polarization forces: eccentricity effects. <i>Nanotechnology</i> , 2013, 24, 505713.	2.6	11
56	Three-dimensional manipulation of gold nanoparticles with electro-enhanced capillary forces. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	10
57	Regulation of ribonucleotide synthesis by the <i>Pseudomonas aeruginosa</i> two-component system AlgR in response to oxidative stress. <i>Scientific Reports</i> , 2017, 7, 17892.	3.3	10
58	Frequency-dependent force between ac-voltage-biased plates in electrolyte solutions. <i>Physical Review E</i> , 2019, 100, 022604.	2.1	10
59	Mapping the capacitance of self-assembled monolayers at metal/electrolyte interfaces at the nanoscale by in-liquid scanning dielectric microscopy. <i>Nanoscale</i> , 2020, 12, 20658-20668.	5.6	10
60	Dielectric nanotomography based on electrostatic force microscopy: A numerical analysis. <i>Journal of Applied Physics</i> , 2020, 127, .	2.5	10
61	Fast Label-Free Nanoscale Composition Mapping of Eukaryotic Cells Via Scanning Dielectric Force Volume Microscopy and Machine Learning. <i>Small Methods</i> , 2021, 5, e2100279.	8.6	10
62	Immobilization of olfactory receptors onto gold electrodes for electrical biosensor. <i>Materials Science and Engineering C</i> , 2008, 28, 686-691.	7.3	8
63	Depth mapping of metallic nanowire polymer nanocomposites by scanning dielectric microscopy. <i>Nanoscale</i> , 2021, 13, 10116-10126.	5.6	8
64	Spatial correlations across n+n semiconductor junctions. <i>Applied Physics Letters</i> , 1997, 70, 3248-3250.	3.3	7
65	Effects of the epitaxial layer thickness on the noise properties of Schottky barrier diodes. <i>Journal of Applied Physics</i> , 1999, 86, 1004-1012.	2.5	7
66	Cholesterol Effect on the Specific Capacitance of Submicrometric DOPC Bilayer Patches Measured by in-Liquid Scanning Dielectric Microscopy. <i>Langmuir</i> , 2020, 36, 12963-12972.	3.5	7
67	Dielectric Imaging of Fixed HeLa Cells by In-Liquid Scanning Dielectric Force Volume Microscopy. <i>Nanomaterials</i> , 2021, 11, 1402.	4.1	7
68	The role of boundary conditions in shot noise in elastic diffusive conductors. <i>Semiconductor Science and Technology</i> , 2000, 15, 829-835.	2.0	6
69	On the origin of shot noise in CdTe detectors. <i>Applied Physics Letters</i> , 2003, 83, 2450-2452.	3.3	6
70	Fluctuations of complex networks: electrical properties of single-protein nanodevices. , 2004, 5472, 172.		6
71	Thermal Fluctuations Of A GPCR: A Two Force Constant Model. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	6
72	Optical visualization of ultrathin mica flakes on semitransparent gold substrates. <i>Nanoscale Research Letters</i> , 2013, 8, 305.	5.7	6

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73	High-speed counting and sizing of cells in an impedance flow microcytometer with compact electronic instrumentation. <i>Microfluidics and Nanofluidics</i> , 2014, 16, 91-99.	2.2	6
74	Dielectric properties and lamellarity of single liposomes measured by in-liquid scanning dielectric microscopy. <i>Journal of Nanobiotechnology</i> , 2021, 19, 167.	9.1	6
75	Stationary states and phase diagram for a model of the Gunn effect under realistic boundary conditions. <i>Physical Review E</i> , 1997, 56, 1490-1499.	2.1	5
76	Fractional exclusion statistics and shot noise in ballistic conductors. <i>Physical Review B</i> , 2001, 63, .	3.2	5
77	Sizing single nanoscale objects from polarization forces. <i>Scientific Reports</i> , 2019, 9, 14142.	3.3	5
78	Non-equilibrium thermodynamic description of junctions in semiconductor devices. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1997, 234, 851-871.	2.6	4
79	Shot-noise suppression in Schottky barrier diodes. <i>Journal of Applied Physics</i> , 2000, 88, 3079-3081.	2.5	4
80	Unipolar transport and shot noise in metal-semiconductor-metal structures. <i>Journal of Applied Physics</i> , 2003, 93, 375-383.	2.5	4
81	All-polymer microfluidic particle size sorter for biomedical applications. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2006, 203, 1476-1480.	1.8	4
82	Quartz tuning fork-based conductive atomic force microscope with glue-free solid metallic tips. <i>Sensors and Actuators A: Physical</i> , 2015, 232, 259-266.	4.1	4
83	Shot-noise anomalies in nondegenerate elastic diffusive conductors. <i>Physical Review B</i> , 2002, 66, .	3.2	3
84	Modelization of Thermal Fluctuations in G Protein-Coupled Receptors. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	3
85	Fluctuations generated at semiconductor interfaces. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 258, 17-31.	2.6	2
86	Nanoscale electronic noise measurements. <i>AIP Conference Proceedings</i> , 2005, , .	0.4	2
87	Development of an artificial nose integrating NEMS and biological olfactory receptors. , 0, , .		2
88	Human olfactory receptors immobilization on a mixed self assembled monolayer for the development of a bioelectronic nose. <i>Procedia Engineering</i> , 2010, 5, 786-789.	1.2	2
89	Interdigitation in spin-coated lipid layers in air. <i>Colloids and Surfaces B: Biointerfaces</i> , 2018, 172, 400-406.	5.0	2
90	Noise properties of ballistic excludons: dimensionality effects. <i>Physica B: Condensed Matter</i> , 2002, 314, 141-144.	2.7	1

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91	Role of energy correlations on Coulomb suppression of shot noise in ballistic conductors contacted to degenerate reservoirs. <i>Physical Review B</i> , 2003, 68, .	3.2	1
92	Electronic transport and noise in ballistic n <sup>+</sup> -semiconductor nanodiodes. <i>Nanotechnology</i> , 2003, 14, 172-176.	2.6	1
93	Impedance field and transition from thermal to shot noise in Cd <sub>1-x</sub> Zn <sub>x</sub> Te semi-insulating Ohmic detectors. <i>Physical Review B</i> , 2007, 75, .	3.2	1
94	Batch fabrication of insulated conductive scanning probe microscopy probes with reduced capacitive coupling. <i>Microelectronic Engineering</i> , 2014, 119, 44-47.	2.4	1
95	Quantitative Dielectric Measurements of Biomembranes and Oxides in Electrolyte Solutions at High Frequencies. <i>Biophysical Journal</i> , 2014, 106, 512a.	0.5	1
96	Spatial Resolution and Capacitive Coupling in the Characterization of Nanowire Nanocomposites by Scanning Dielectric Microscopy. <i>Microscopy and Microanalysis</i> , 2021, 27, 1026-1034.	0.4	1
97	Electrical properties of outer membrane extensions from <i>Shewanella oneidensis</i> MR-1. <i>Nanoscale</i> , 2021, 13, 18754-18762.	5.6	1
98	Probing Electrical Transport Properties at the Nanoscale by Current-Sensing Atomic Force Microscopy. , 2008, , 421-450.		1
99	Nanoembossed polymer substrates for biomedical surface interaction studies. <i>Journal of Nanoscience and Nanotechnology</i> , 2007, 7, 4588-94.	0.9	1
100	Electronic transport and noise in nanoelectronic ballistic N <sup>+</sup> /N <sup>-</sup> diodes. , 0, , .		0
101	Enhanced shot-noise in mesoscopic non-degenerate diffusive semiconductors. <i>Physica B: Condensed Matter</i> , 2002, 314, 189-192.	2.7	0
102	Noise temperature reduction by doping in ballistic n <sup>+</sup> -nanodiodes. <i>Semiconductor Science and Technology</i> , 2004, 19, S209-S211.	2.0	0
103	AC and DC electrical imaging of biosamples at the nanoscale by Atomic Force Microscopy. <i>Journal of Physics: Conference Series</i> , 2007, 61, 185-189.	0.4	0
104	Electrical Characterization and Analysis of Carbon Nanotube-Peptide Nucleic Acid Conjugates. <i>Journal of Nanoelectronics and Optoelectronics</i> , 2007, 2, 205-208.	0.5	0