Igor Igor Sokolov

List of Publications by Citations

132 papers	5,279 citations	38 h-index	70 g-index
139 ext. papers	5,950 ext. citations	6.3 avg, IF	5.75 L-index

#	Paper	IF	Citations
132	Free-standing and oriented mesoporous silica films grown at the air□water interface. *Nature*, **1996**, 381, 589-592	50.4	493
131	A comparison of methods to assess cell mechanical properties. *Nature Methods*, **2018**, 15, 491-498	21.6	265
130	Atomic force microscopy detects differences in the surface brush of normal and cancerous cells. *Nature Nanotechnology*, **2009**, 4, 389-93	28.7	257
129	Quantitative mapping of the elastic modulus of soft materials with HarmoniX and PeakForce QNM AFM modes. *Langmuir*, **2012**, 28, 16060-71	4	251
128	If cell mechanics can be described by elastic modulus: study of different models and probes used in indentation experiments. *Biophysical Journal*, **2014**, 107, 564-575	2.9	194
127	Enzyme-functionalized mesoporous silica for bioanalytical applications. *Analytical and Bioanalytical Chemistry*, **2009**, 393, 543-54	4.4	182
126	Synthesis of mesoporous silica spheres under quiescent aqueous acidic conditions. *Journal of Materials Chemistry*, **1998**, 8, 743-750		166
125	Human epithelial cells increase their rigidity with ageing in vitro: direct measurements. *Physics in Medicine and Biology*, **2005**, 50, 81-92	3.8	151
124	Method for quantitative measurements of the elastic modulus of biological cells in AFM indentation experiments. *Methods*, **2013**, 60, 202-13	4.6	119
123	Cell surface electrochemical heterogeneity of the Fe(III)-reducing bacteria Shewanella putrefaciens. *Environmental Science & Technology*, **2001**, 35, 341-7	10.3	115
122	Formation of Hollow Helicoids in Mesoporous Silica: Supramolecular Origami. *Advanced Materials*, **1999**, 11, 1427-1431	24	115
121	Polyelectrolyte Stabilized Nanowires from Fe3O4Nanoparticles via Magnetic Field Induced Self-Assembly. *Chemistry of Materials*, **2006**, 18, 591-593	9.6	111
120	On the Measurements of Rigidity Modulus of Soft Materials in Nanoindentation Experiments at Small Depth. *Macromolecules*, **2012**, 45, 4277-4288	5.5	107
119	Registered growth of mesoporous silica films on graphite. *Journal of Materials Chemistry*, **1997**, 7, 1285-1290		100
118	Quantitative study of the elastic modulus of loosely attached cells in AFM indentation experiments. *Biophysical Journal*, **2013**, 104, 2123-31	2.9	95
117	Shell mimetics. *Advanced Materials*, **1997**, 9, 662-667	24	92
116	Novel fluorescent silica nanoparticles: towards ultrabright silica nanoparticles. *Small*, **2008**, 4, 934-9	11	87

115	Self-assembly of ultrabright fluorescent silica particles. *Small*, **2007**, 3, 419-23	11	78
114	Detection of surface brush on biological cells in vitro with atomic force microscopy. *Applied Physics Letters*, **2007**, 91, 023902	3.4	75
113	Morphokinetics: Growth of Mesoporous Silica Curved Shapes. *Advanced Materials*, **1999**, 11, 52-55	24	73
112	AFM study of forces between silica, silicon nitride and polyurethane pads. *Journal of Colloid and Interface Science*, **2006**, 300, 475-81	9.3	72
111	Recovery of elasticity of aged human epithelial cells in vitro. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **2006**, 2, 31-6	6	71
110	Ultrabright Fluorescent Silica Mesoporous Silica Nanoparticles: Control of Particle Size and Dye Loading. *Advanced Functional Materials*, **2011**, 21, 3129-3135	15.6	69
109	Free-standing mesoporous silica films; morphogenesis of channel andsurface patterns. *Journal of Materials Chemistry*, **1997**, 7, 1755-1761		69
108	Ultrabright fluorescent mesoporous silica nanoparticles. *Small*, **2010**, 6, 2314-9	11	64
107	Cell surface as a fractal: normal and cancerous cervical cells demonstrate different fractal behavior of surface adhesion maps at the nanoscale. *Physical Review Letters*, **2011**, 107, 028101	7.4	62
106	Layer-by-Layer Self-Assembly of Organic□Organometallic Polymer Electrostatic Superlattices Using Poly(ferrocenylsilanes). *Langmuir*, **2000**, 16, 9609-9614	4	62
105	Attachment of nanoparticles to the AFM tips for direct measurements of interaction between a single nanoparticle and surfaces. *Journal of Colloid and Interface Science*, **2007**, 310, 385-90	9.3	61
104	Radial Patterns in Mesoporous Silica. *Advanced Materials*, **1999**, 11, 636-642	24	60
103	Morphology Control of Mesoporous Silica Particles. *Journal of Physical Chemistry C*, **2007**, 111, 11168-11173	3.3	51
102	Nanosurgery: observation of peptidoglycan strands in Lactobacillus helveticus cell walls. *Ultramicroscopy*, **2004**, 101, 105-9	3.1	51
101	Visualization of cytoskeletal elements by the atomic force microscope. *Ultramicroscopy*, **2005**, 102, 189-98	3.1	50
100	The Casimir effect leads to new restrictions on long-range force constants. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1987**, 125, 405-408	2.3	47
99	Force dependences for the definition of the atomic force microscopy spatial resolution. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1988**, 132, 354-358	2.3	47
98	Ultrabright fluorescent mesoporous silica particles. *Journal of Materials Chemistry*, **2010**, 20, 4247		43

97	Dynamics of molecular diffusion of rhodamine 6G in silica nanochannels. *Journal of Chemical Physics*, **2008**, 128, 151102	3.9	43
96	Blueprints for inorganic materials with natural form: inorganic liquid crystals and a language of inorganic shape *Journal of the Chemical Society Dalton Transactions*, **1997**, 3941-3952		42
95	A biochemical logic approach to biomarker-activated drug release. *Journal of Materials Chemistry*, **2012**, 22, 19709		40
94	Silica nanoparticles to polish tooth surfaces for caries prevention. *Journal of Dental Research*, **2008**, 87, 980-3	8.1	38
93	Noninvasive diagnostic imaging using machine-learning analysis of nanoresolution images of cell surfaces: Detection of bladder cancer. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 12920-12925	11.5	38
92	Logic networks based on immunorecognition processes. *Journal of Physical Chemistry B*, **2009**, 113, 1215	3.4	37
91	Ultrabright NIR fluorescent mesoporous silica nanoparticles. *Journal of Materials Chemistry B*, **2014**, 2, 3107-3114	7.3	35
90	Self-assembly of uniform nanoporous silica fibers. *IEEE Nanotechnology Magazine*, **2005**, 4, 490-494	2.6	32
89	Change in rigidity in the activated form of the glucose/galactose receptor from Escherichia coli: a phenomenon that will be key to the development of biosensors. *Biophysical Journal*, **2006**, 90, 1055-63	2.9	32
88	On the limits of the spectroscopic ability of AFM and the interaction between an AFM tip and a sample. *Surface Science*, **1994**, 311, 287-294	1.8	32
87	Towards nonspecific detection of malignant cervical cells with fluorescent silica beads. *Small*, **2009**, 5, 2277-84	11	30
86	Beyond the hemicylindrical micellar monolayer on graphite: AFM evidence for a lyotropic liquid crystal film. *Advanced Materials*, **1997**, 9, 917-921	24	27
85	Hypothetical long-range interactions and restrictions on their parameters from force measurements. *Physical Review D*, **1993**, 47, 2882-2891	4.9	27
84	Towards early detection of cervical cancer: Fractal dimension of AFM images of human cervical epithelial cells at different stages of progression to cancer. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **2015**, 11, 1667-75	6	26
83	Load Rate and Temperature Dependent Mechanical Properties of the Cortical Neuron and Its Pericellular Layer Measured by Atomic Force Microscopy. *Langmuir*, **2016**, 32, 1111-9	4	26
82	Ultrabright fluorescent mesoporous silica nanoparticles for prescreening of cervical cancer. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **2013**, 9, 1255-62	6	26
81	Emerging of fractal geometry on surface of human cervical epithelial cells during progression towards cancer. *New Journal of Physics*, **2015**, 17,	2.9	25
80	Influence of adhesion of silica and ceria abrasive nanoparticles on Chemical Mechanical Planarization of silica surfaces. *Applied Surface Science*, **2011**, 257, 8518-8524	6.7	25

79	On the strengthening of restrictions on hypothetical Yukawa-type forces with extremely small range of action. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1994**, 187, 35-39	2.3	25
78	New restrictions on the parameters of the spin-1 antigraviton following from the Casimir effect, EötWash and Cavendish experiments. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1988**, 132, 313-315	2.3	25
77	High-resolution high-speed dynamic mechanical spectroscopy of cells and other soft materials with the help of atomic force microscopy. *Scientific Reports*, **2015**, 5, 12630	4.9	24
76	Detection of cancerous cervical cells using physical adhesion of fluorescent silica particles and centripetal force. *Analyst, The*, **2011**, 136, 1502-6	5	24
75	Effect of microgravity on the crystallization of a self-assembling layered material. *Nature*, **1997**, 388, 857-860	50.4	23
74	Synthesis of ultrabright nanoporous fluorescent silica discoids using an inorganic silica precursor. *Nanoscale*, **2011**, 3, 2036-43	7.7	20
73	Self-Healing Epoxy Composites Based on the Use of Nanoporous Silica Capsules. *International Journal of Fracture*, **2009**, 159, 101-102	2.3	18
72	Does Microgravity Influence Self-Assembly??. *Advanced Materials*, **1997**, 9, 1133-1149	24	18
71	High sensitivity molecular detection with enzyme-linked immuno-sorbent assay (ELISA)-type immunosensing. *Nanotechnology*, **2008**, 19, 375502	3.4	18
70	In Situ AFM Study of Surface Layer Removal during Copper CMP. *Electrochemical and Solid-State Letters*, **2003**, 6, G91		18
69	Model dependence of AFM simulations in non-contact mode. *Surface Science*, **2000**, 457, 267-272	1.8	18
68	3D design of self-assembled nanoporous colloids. *Studies in Surface Science and Catalysis*, **2005**, 433-442	1.8	17
67	The nature of ultrabrightness of nanoporous fluorescent particles with physically encapsulated fluorescent dyes. *Journal of Materials Chemistry C*, **2016**, 4, 2197-2210	7.1	17
66	Nanoscale compositional mapping of cells, tissues, and polymers with ringing mode of atomic force microscopy. *Scientific Reports*, **2017**, 7, 11828	4.9	16
65	Cellular energetics and mitochondrial uncoupling in canine aging. *GeroScience*, **2019**, 41, 229-242	8.9	16
64	Towards understanding of shape formation mechanism of mesoporous silica particles. *Physical Chemistry Chemical Physics*, **2010**, 12, 341-4	3.6	16
63	Functionalized Ultrabright Fluorescent Mesoporous Silica Nanoparticles. *Particle and Particle Systems Characterization*, **2013**, 30, 804-811	3.1	15
62	Pericellular Brush and Mechanics of Guinea Pig Fibroblast Cells Studied with AFM. *Biophysical Journal*, **2016**, 111, 236-46	2.9	14

61	Ultrabright fluorescent cellulose acetate nanoparticles for imaging tumors through systemic and topical applications. *Materials Today*, **2019**, 23, 16-25	21.8	14
60	AFM Study of Polymer Brush Grafted to Deformable Surfaces: Quantitative Properties of the Brush and Substrate Mechanics. *Macromolecules*, **2017**, 50, 275-282	5.5	13
59	Tin Sulfide Mesh: AFM Imaging of Lamellae and Mesopores. *Advanced Materials*, **1998**, 10, 942-946	24	13
58	Atomic force microscopy study of immunosensor surface to scale down the size of ELISA-type sensors. *Nanotechnology*, **2010**, 21, 145503	3.4	12
57	Room temperature synthesis of nanoporous silica spheres and their formation mechanism. *Solid State Communications*, **2007**, 144, 437-440	1.6	12
56	On averaging force curves over heterogeneous surfaces in atomic force microscopy. *Ultramicroscopy*, **2012**, 121, 16-24	3.1	11
55	Atomic force microscopy characterization of corneocytes: effect of moisturizer on their topology, rigidity, and friction. *Skin Research and Technology*, **2010**, 16, 275-82	1.9	11
54	Ultrabright fluorescent silica nanoparticles for in vivo targeting of xenografted human tumors and cancer cells in zebrafish. *Nanoscale*, **2019**, 11, 22316-22327	7.7	11
53	Can AFM be used to measure absolute values of Young's modulus of nanocomposite materials down to the nanoscale?. *Nanoscale*, **2020**, 12, 12432-12443	7.7	10
52	Mechanical properties of cancer cells depend on number of passages: Atomic force microscopy indentation study. *Japanese Journal of Applied Physics*, **2017**, 56, 08LB01	1.4	10
51	A modified in vitro stripping method to automate the calculation of geometry of corneocytes imaged with fluorescent microscopy: example of moisturizer treatment. *Skin Research and Technology*, **2011**, 17, 213-9	1.9	10
50	Addressable photocharging of single quantum dots assisted with atomic force microscopy probe. *Applied Physics Letters*, **2009**, 95, 173105	3.4	10
49	A novel in vitro stripping method to study geometry of corneocytes with fluorescent microscopy: example of aging skin. *Skin Research and Technology*, **2009**, 15, 379-83	1.9	10
48	Stronger restrictions on the constants of long-range forces decreasing as r-n. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1990**, 146, 373-374	2.3	10
47	Atomic force microscopy study of nano-physiological response of ladybird beetles to photostimuli. *PLoS ONE*, **2010**, 5, e12834	3.7	9
46	AFM study shows prominent physical changes in elasticity and pericellular layer in human acute leukemic cells due to inadequate cell-cell communication. *Nanotechnology*, **2016**, 27, 494005	3.4	9
45	Ultrabright fluorescent silica particles with a large number of complex spectra excited with a single wavelength for multiplex applications. *Nanoscale*, **2017**, 9, 4881-4890	7.7	8
44	Physical labeling of papillomavirus-infected, immortal, and cancerous cervical epithelial cells reveal surface changes at immortal stage. *Cell Biochemistry and Biophysics*, **2012**, 63, 109-16	3.2	8

43	Synthesis of mesoporous silica fibers and discoids endowed with circular pore architecture using disodium trioxosilicate as silica source. *Microporous and Mesoporous Materials*, **2008**, 116, 581-585	5.3	8
42	Pseudo-non-contact mode: why it can give true atomic resolution. *Applied Surface Science*, **2003**, 210, 37-42	6.7	8
41	Simulation of the observability of atomic defects by atomic force microscopy in contact and non-contact modes. *Surface Science*, **2002**, 499, 135-140	1.8	8
40	Anisotropy of cosmic background radiation and initial conditions for quantum inflaton field. *Classical and Quantum Gravity*, **1992**, 9, L61-L67	3.3	8
39	Data on ultrabright fluorescent cellulose acetate nanoparticles for imaging tumors through systemic and topical applications. *Data in Brief*, **2019**, 22, 383-391	1.2	8
38	AFM Indentation Analysis of Cells to Study Cell Mechanics and Pericellular Coat. *Methods in Molecular Biology*, **2018**, 1814, 449-468	1.4	8
37	Self-assembly of multi-hierarchically structured spongy mesoporous silica particles and mechanism of their formation. *Journal of Colloid and Interface Science*, **2017**, 491, 133-140	9.3	7
36	A study of molecular adsorption of a cationic surfactant on complex surfaces with atomic force microscopy. *Analyst, The*, **2016**, 141, 1017-26	5	7
35	Anomalous Increase of Friction in the Vicinity of Nano-Size Defects. *Tribology Letters*, **2002**, 12, 131-134	2.8	7
34	Ultrabright Fluorescent Silica Particles: Physical Entrapment of Fluorescent Dye Rhodamine 640 in Nanochannels. *ACS Symposium Series*, **2008**, 214-224	0.4	6
33	Imaging of Soft and Biological Samples Using AFM Ringing Mode. *Methods in Molecular Biology*, **2018**, 1814, 469-482	1.4	6
32	Biophysical differences between chronic myelogenous leukemic quiescent and proliferating stem/progenitor cells. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **2016**, 12, 2429-2437	6	5
31	Towards nano-physiology of insects with atomic force microscopy. *Journal of Insect Physiology*, **2011**, 57, 260-4	2.4	5
30	Atomic force microscopy to detect internal live processes in insects. *Applied Physics Letters*, **2010**, 96, 043701	3.4	5
29	Atomic resolution imaging using the electric double layer technique: friction vs. height contrast mechanisms. *Applied Surface Science*, **2000**, 157, 302-307	6.7	5
28	Recovery of aging-related size increase of skin epithelial cells: in vivo mouse and in vitro human study. *PLoS ONE*, **2015**, 10, e0122774	3.7	5
27	Computational modeling of nano-structured glass fibers. *Computational Materials Science*, **2008**, 44, 622-627	3.3	4
26	Fractal Analysis of Cancer Cell Surface. *Methods in Molecular Biology*, **2017**, 1530, 229-245	1.4	3

25	Ultrabright Fluorescent Silica Nanoparticles for Multiplexed Detection. *Nanomaterials*, **2020**, 10,	5.4	3
24	In Vivo Targeting of Xenografted Human Cancer Cells with Functionalized Fluorescent Silica Nanoparticles in Zebrafish. *Journal of Visualized Experiments*, **2020**,	1.6	3
23	Toward the nanoscale study of insect physiology using an atomic force microscopy-based nanostethoscope. *MRS Bulletin*, **2012**, 37, 522-527	3.2	3
22	Fluorescent silica colloids for study and visualization of skin care products. *Skin Research and Technology*, **2007**, 13, 317-22	1.9	3
21	The height dependence of image contrast when imaging by non-contact AFM. *Surface Science*, **2000** , 464, L745-L751	1.8	3
20	The Casimir effect as a possible source of cosmic energy. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1996**, 223, 163-166	2.3	3
19	Control and formation mechanism of extended nanochannel geometry in colloidal mesoporous silica particles. *Physical Chemistry Chemical Physics*, **2017**, 19, 1115-1121	3.6	2
18	Difference in biophysical properties of cancer-initiating cells in melanoma mutated zebrafish. *Journal of the Mechanical Behavior of Biomedical Materials*, **2020**, 107, 103746	4.1	2
17	On Possible Use of Capped Quantum Dots in Memory Devices. *Journal of Computational and Theoretical Nanoscience*, **2011**, 8, 516-519	0.3	2
16	Interaction between Silica Particles and Human Epithelial Cells: Atomic Force Microscopy and Fluorescence Study69-95		2
15	Absorption of organic compounds by mesoporous silica discoids. *Microporous and Mesoporous Materials*, **2020**, 306, 110379	5.3	1
14	Mechanics of Biological Cells Studied with Atomic Force Microscopy. *Microscopy and Microanalysis*, **2014**, 20, 2076-2077	0.5	1
13	Atomic Force Microscopy Helps to Develop Methods for Physical Detection of Cancerous Cells **2010** ,		1
12	Imaging of Molecular Coating on Nanoparticle Surface Using AFM Ringing Mode. *Microscopy and Microanalysis*, **2020**, 26, 3136-3138	0.5	1
11	Improved Scanning Speed of AFM Subresonant Tapping Mode with Switched Dual-Actuator Control **2018**,		1
10	Ultrabright fluorescent nanothermometers. *Nanoscale Advances*, **2021**, 3, 5090-5101	5.1	1
9	Contact Problem in Indentation Measurements of Soft, Biological and Bioinspired Materials. *Biologically-inspired Systems*, **2022**, 31-49	0.7	1
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6	Multidimensional Imaging of Surfaces with Ringing Mode of Atomic Force Microscopy. *Microscopy and Microanalysis*, **2018**, 24, 1038-1039	0.5	
5	STUDY OF PHOTOINDUCED CHARGES WITH ATOMIC FORCE MICROSCOPY. *World Scientific Series in Nanoscience and Nanotechnology*, **2013**, 185-205	0.1	
4	AFM to Study Charging of Individual Quantum Dots with Light. *Microscopy and Microanalysis*, **2012**, 18, 880-881	0.5	
3	How to Obtain Rigidity Modulus of Biological Cells Using AFM. *Microscopy and Microanalysis*, **2012**, 18, 924-925	0.5	
2	Energy-momentum tensor of intermediate vector bosons in an external electromagnetic field. *Theoretical and Mathematical Physics(Russian Federation)*, **1988**, 74, 137-142	0.7	
1	High-resolution Viscoelastic Mapping of Cells with FT-NanoDMA Mode of AFM. *Microscopy and Microanalysis*, **2020**, 26, 1962-1963	0.5	