Robert Horvath

List of Publications by Year
in descending order

129 papers	3,279 citations	136950 32 h-index	182427 51 g-index
134 all docs	134 docs citations	134 times ranked	3382 citing authors

#	Article	IF	Citations
1	Development and In-Depth Characterization of Bacteria Repellent and Bacteria Adhesive Antibody-Coated Surfaces Using Optical Waveguide Biosensing. Biosensors, 2022, 12, 56.	4.7	7
2	Characterization of the Dissolution of Water Microdroplets in Oil. Colloids and Interfaces, 2022, 6, 14.	2.1	5
3	Review of Label-Free Monitoring of Bacteria: From Challenging Practical Applications to Basic Research Perspectives. Biosensors, 2022, 12, 188.	4.7	12
4	Cytotoxic effects of Roundup Classic and its components on NE-4C and MC3T3-E1 cell lines determined by biochemical and flow cytometric assays. Toxicology Reports, 2022, 9, 914-926.	3.3	8
5	Population distributions of single-cell adhesion parameters during the cell cycle from high-throughput robotic fluidic force microscopy. Scientific Reports, 2022, 12, 7747.	3.3	13
6	Prospects of fluidic force microscopy and related biosensors for medical applications. , 2022, , 1-28.		0
7	Simple and automatic monitoring of cancer cell invasion into an epithelial monolayer using label-free holographic microscopy. Scientific Reports, 2022, 12, .	3.3	3
8	Dissociation Constant of Integrin-RGD Binding in Live Cells from Automated Micropipette and Label-Free Optical Data. Biosensors, 2021, 11, 32.	4.7	6
9	Design of non-autonomous pH oscillators and the existence of chemical beat phenomenon in a neutralization reaction. Scientific Reports, 2021, 11, 11011.	3.3	3
10	Determination of the Resonance Frequency and Spring Constant of FluidFM Cantilevers with Numerical Simulations. , 2021, , .		1
11	Near cut-off wavelength operation of resonant waveguide grating biosensors. Scientific Reports, 2021, 11, 13091.	3.3	6
12	Data evaluation for surface-sensitive label-free methods to obtain real-time kinetic and structural information of thin films: A practical review with related software packages. Advances in Colloid and Interface Science, 2021, 294, 102431.	14.7	30
13	Single-cell adhesion strength and contact density drops in the M phase of cancer cells. Scientific Reports, 2021, 11, 18500.	3.3	9
14	Label-free tracking of whole-cell response on RGD functionalized surfaces to varied flow velocities generated by fluidic rotation. Journal of Colloid and Interface Science, 2021, 599, 620-630.	9.4	4
15	Label-free real-time monitoring of the BCR-triggered activation of primary human B cells modulated by the simultaneous engagement of inhibitory receptors. Biosensors and Bioelectronics, 2021, 191, 113469.	10.1	7
16	Nanonewton scale adhesion force measurements on biotinylated microbeads with a robotic micropipette. Journal of Colloid and Interface Science, 2021, 602, 291-299.	9.4	5
17	Natural Compounds as Target Biomolecules in Cellular Adhesion and Migration: From Biomolecular Stimulation to Label-Free Discovery and Bioactivity-Based Isolation. Biomedicines, 2021, 9, 1781.	3.2	5
18	A custom Software for the Evaluation of Single-Cell Force-Spectroscopy Data Acquired by FluidFM BOT. , 2021, , .		1

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19	Oxidization increases the binding of EGCG to serum albumin revealed by kinetic data from label-free optical biosensor with reference channel. Analyst, The, 2020, 145, 588-595.	3.5	10
20	Thermodynamics of mixing methanol with supercritical CO₂ as seen from computer simulations and thermodynamic integration. Physical Chemistry Chemical Physics, 2020, 22, 11652-11662.	2.8	4
21	Assembly of Epithelial Monolayers and Transmigration of Cancer Cells Captured with Phase Holographic Imaging. , 2020, , .		0
22	Human primary endothelial label-free biochip assay reveals unpredicted functions of plasma serine proteases. Scientific Reports, 2020, 10, 3303.	3.3	14
23	Subnanoliter precision piezo pipette for single-cell isolation and droplet printing. Microfluidics and Nanofluidics, 2020, 24, 1.	2.2	12
24	Single-cell adhesion force kinetics of cell populations from combined label-free optical biosensor and robotic fluidic force microscopy. Scientific Reports, 2020, 10, 61.	3.3	61
25	Computer Simulation Investigation of the Adsorption of Cyanamide on Amorphous Ice at Low Temperatures. Journal of Physical Chemistry C, 2020, 124, 10615-10626.	3.1	9
26	Chemical Resonance, Beats, and Frequency Locking in Forced Chemical Oscillatory Systems. Journal of Physical Chemistry Letters, 2020, 11, 3014-3019.	4.6	8
27	Grating-coupled interferometry reveals binding kinetics and affinities of Ni ions to genetically engineered protein layers. Scientific Reports, 2020, 10, 22253.	3.3	18
28	Glycocalyx regulates the strength and kinetics of cancer cell adhesion revealed by biophysical models based on high resolution label-free optical data. Scientific Reports, 2020, 10, 22422.	3.3	38
29	Dextran-based Hydrogel Layers for Biosensors. , 2020, , 139-164.		3
30	Analysis of single-cell force-spectroscopy data of Vero cells recorded by FluidFM BOT. , 2020, , .		7
31	Spring constant and sensitivity calibration of FluidFM micropipette cantilevers for force spectroscopy measurements. Scientific Reports, 2019, 9, 10287.	3.3	19
32	Adhesion force measurements on functionalized microbeads: An in-depth comparison of computer controlled micropipette and fluidic force microscopy. Journal of Colloid and Interface Science, 2019, 555, 245-253.	9.4	23
33	Biomimetic Dextran-Based Hydrogel Layers for Cell Micropatterning over Large Areas Using the FluidFM BOT Technology. Langmuir, 2019, 35, 2412-2421.	3.5	32
34	Investigation of the liquid-vapour interface of aqueous methylamine solutions by computer simulation methods. Journal of Molecular Liquids, 2019, 288, 110978.	4.9	9
35	Modeling of Label-Free Optical Waveguide Biosensors with Surfaces Covered Partially by Vertically Homogeneous and Inhomogeneous Films. Journal of Sensors, 2019, 2019, 1-11.	1.1	2
36	In vitro SOD-like activity of mono- and di-copper complexes with a phosphonate substituted SALAN-type ligand. Chemico-Biological Interactions, 2019, 306, 78-88.	4.0	9

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37	An improved 96 well plate format lipid quantification assay for standardisation of experiments with extracellular vesicles. Journal of Extracellular Vesicles, 2019, 8, 1565263.	12.2	57
38	Label-free optical biosensor for real-time monitoring the cytotoxicity of xenobiotics: A proof of principle study on glyphosate. Journal of Hazardous Materials, 2018, 351, 80-89.	12.4	31
39	High-Resolution Adhesion Kinetics of EGCG-Exposed Tumor Cells on Biomimetic Interfaces: Comparative Monitoring of Cell Viability Using Label-Free Biosensor and Classic End-Point Assays. ACS Omega, 2018, 3, 3882-3891.	3.5	23
40	Adsorption of Methylamine on Amorphous Ice under Interstellar Conditions. A Grand Canonical Monte Carlo Simulation Study. Journal of Physical Chemistry A, 2018, 122, 3398-3412.	2.5	14
41	Receptor specific adhesion assay for the quantification of integrinâ€“ligand interactions in intact cells using a microplate based, label-free optical biosensor. Sensors and Actuators B: Chemical, 2018, 256, 729-734.	7.8	13
42	Bacteria repellent layer made of flagellin. Sensors and Actuators B: Chemical, 2018, 257, 839-845.	7.8	10
43	Integrin targeting of glyphosate and its cell adhesion modulation effects on osteoblastic MC3T3-E1 cells revealed by label-free optical biosensing. Scientific Reports, 2018, 8, 17401.	3.3	23
44	Kinetics and Structure of Self-Assembled Flagellin Monolayers on Hydrophobic Surfaces in the Presence of Hofmeister Salts: Experimental Measurement of the Protein Interfacial Tension at the Nanometer Scale. Journal of Physical Chemistry C, 2018, 122, 21375-21386.	3.1	14
45	Interaction of Positively Charged Gold Nanoparticles with Cancer Cells Monitored by an in Situ Label-Free Optical Biosensor and Transmission Electron Microscopy. ACS Applied Materials & Interfaces, 2018, 10, 26841-26850.	8.0	39
46	In situ viscoelastic properties and chain conformations of heavily hydrated carboxymethyl dextran layers: a comparative study using OWLS and QCM-I chips coated with waveguide material. Scientific Reports, 2018, 8, 11840.	3.3	37
47	Biophysical characteristics of proteins and living cells exposed to the green tea polyphenol epigallocatechin-3-gallate (EGCg): review of recent advances from molecular mechanisms to nanomedicine and clinical trials. European Biophysics Journal, 2017, 46, 1-24.	2.2	57
48	Surface rearrangement of adsorbed EGCGâ€“mucin complexes on hydrophilic surfaces. International Journal of Biological Macromolecules, 2017, 95, 704-712.	7.5	8
49	Green tea polyphenol tailors cell adhesivity of RGD displaying surfaces: multicomponent models monitored optically. Scientific Reports, 2017, 7, 42220.	3.3	46
50	Nanophotonics of biomaterials and inorganic nanostructures. Journal of Physics: Conference Series, 2017, 794, 012004.	0.4	0
51	Antibiotic-induced release of small extracellular vesicles (exosomes) with surface-associated DNA. Scientific Reports, 2017, 7, 8202.	3.3	102
52	Grating coupled optical waveguide interferometry combined with in situ spectroscopic ellipsometry to monitor surface processes in aqueous solutions. Applied Surface Science, 2017, 421, 289-294.	6.1	7
53	Label-free optical biosensor for on-line monitoring the integrated response of human B cells upon the engagement of stimulatory and inhibitory immune receptors. Sensors and Actuators B: Chemical, 2017, 240, 528-535.	7.8	23
54	ZnO Nanostructure Templates as a Cost-Efficient Mass-Producible Route for the Development of Cellular Networks. Materials, 2016, 9, 256.	2.9	7

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55	CD11c/CD18 Dominates Adhesion of Human Monocytes, Macrophages and Dendritic Cells over CD11b/CD18. PLoS ONE, 2016, 11, e0163120.	2.5	72
56	Flagellin based biomimetic coatings: From cell-repellent surfaces to highly adhesive coatings. Acta Biomaterialia, 2016, 42, 66-76.	8.3	17
57	Fabrication and characterization of ultrathin dextran layers: Time dependent nanostructure in aqueous environments revealed by OWLS. Colloids and Surfaces B: Biointerfaces, 2016, 146, 861-870.	5.0	7
58	Automated single cell isolation from suspension with computer vision. Scientific Reports, 2016, 6, 20375.	3.3	37
59	Intensity interrogation near cutoff resonance for label-free cellular profiling. Scientific Reports, 2016, 6, 24685.	3.3	17
60	Adhesion kinetics of human primary monocytes, dendritic cells, and macrophages: Dynamic cell adhesion measurements with a label-free optical biosensor and their comparison with end-point assays. Biointerphases, 2016, 11, 031001.	1.6	15
61	Self-assembled, nanostructured coatings for water oxidation by alternating deposition of Cu-branched peptide electrocatalysts and polyelectrolytes. Chemical Science, 2016, 7, 5249-5259.	7.4	17
62	Plasmon-enhanced two-channel in situ Kretschmann ellipsometry of protein adsorption, cellular adhesion and polyelectrolyte deposition on titania nanostructures. Optics Express, 2016, 24, 4812.	3.4	16
63	Self-assembly and structure of flagellinâ€“polyelectrolyte composite layers: polyelectrolyte induced flagellar filament formation during the alternating deposition process. RSC Advances, 2016, 6, 92159-92167.	3.6	3
64	One-step green synthesis of gold nanoparticles by mesophilic filamentous fungi. Chemical Physics Letters, 2016, 645, 1-4.	2.6	52
65	Label-Free Optical Biosensors for Monitoring Cellular Processes and Cytotoxic Agents at Interfaces Using Guided Modes and Advanced Phase-Contrast Imaging Techniques. Advanced Sciences and Technologies for Security Applications, 2016, , 443-468.	0.5	3
66	Apparent self-accelerating alternating assembly of semiconductor nanoparticles and polymers. Applied Physics Letters, 2015, 107, .	3.3	4
67	Incubator proof miniaturized Holomonitor toin situmonitor cancer cells exposed to green tea polyphenol and preosteoblast cells adhering on nanostructured titanate surfaces: validity of the measured parameters and their corrections. Journal of Biomedical Optics, 2015, 20, 067002.	2.6	27
68	Single Cell Adhesion Assay Using Computer Controlled Micropipette. PLoS ONE, 2014, 9, e111450.	2.5	30
69	Automated single cell sorting and deposition in submicroliter drops. Applied Physics Letters, 2014, 105, .	3.3	13
70	Bulk and surface sensitivity of a resonant waveguide grating imager. Applied Physics Letters, 2014, 104, 083506.	3.3	47
71	Microfluidic channels laser-cut in thin double-sided tapes: Cost-effective biocompatible fluidics in minutes from design to final integration with optical biochips. Sensors and Actuators B: Chemical, 2014, 196, 352-356.	7.8	57
72	Sample handling in surface sensitive chemical and biological sensing: A practical review of basic fluidics and analyte transport. Advances in Colloid and Interface Science, 2014, 211, 1-16.	14.7	29

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73	Label-Free in Situ Optical Monitoring of the Adsorption of Oppositely Charged Metal Nanoparticles. Langmuir, 2014, 30, 13478-13482.	3.5	13
74	Enhanced protein adsorption and cellular adhesion using transparent titanate nanotube thin films made by a simple and inexpensive room temperature process: Application to optical biochips. Colloids and Surfaces B: Biointerfaces, 2014, 122, 491-497.	5.0	8
75	Intrinsic structure of biological layers: Vertical inhomogeneity profiles characterized by label-free optical waveguide biosensors. Sensors and Actuators B: Chemical, 2014, 200, 297-303.	7.8	3
76	In-situ and label-free optical monitoring of the adhesion and spreading of primary monocytes isolated from human blood: Dependence on serum concentration levels. Biosensors and Bioelectronics, 2014, 54, 339-344.	10.1	30
77	Development and characterization of ultra-porous silica films made by the solâ€“gel method. Application to biosensing. Applied Physics A: Materials Science and Processing, 2014, 114, 435-443.	2.3	1
78	Dependence of cancer cell adhesion kinetics on integrin ligand surface density measured by a high-throughput label-free resonant waveguide grating biosensor. Scientific Reports, 2014, 4, 4034.	3.3	95
79	Label-free optical monitoring of surface adhesion of extracellular vesicles by grating coupled interferometry. Sensors and Actuators B: Chemical, 2013, 188, 697-701.	7.8	28
80	Investigation of thin polymer layers for biosensor applications. Applied Surface Science, 2013, 281, 66-72.	6.1	13
81	Polyethylene imine-based receptor immobilization for label free bioassays. Sensors and Actuators B: Chemical, 2013, 181, 71-76.	7.8	19
82	Optical Anisotropy of Flagellin Layers: In Situ and Label-Free Measurement of Adsorbed Protein Orientation Using OWLS. Analytical Chemistry, 2013, 85, 5382-5389.	6.5	48
83	Molecular Interaction of a New Antibacterial Polymer with a Supported Lipid Bilayer Measured by an in situ Label-Free Optical Technique. International Journal of Molecular Sciences, 2013, 14, 9722-9736.	4.1	26
84	Single beam grating coupled interferometry: high resolution miniaturized label-free sensor for plate based parallel screening. Optics Express, 2012, 20, 23162.	3.4	52
85	NIL fabrication of a polymer-based photonic sensor device in P3SENS project. , 2012, , .		3
86	Titanate nanotube thin films with enhanced thermal stability and high-transparency prepared from additive-free sols. Journal of Solid State Chemistry, 2012, 192, 342-350.	2.9	12
87	Highly transparent ITO thin films on photosensitive glass: solâ€“gel synthesis, structure, morphology and optical properties. Applied Physics A: Materials Science and Processing, 2012, 107, 385-392.	2.3	15
88	Particle speciation during PEGâ€“Fe3O4 hybrid nanoparticle self-assembly on Si(Ti)O2. Journal of Nanoparticle Research, 2011, 13, 193-198.	1.9	1
89	In-depth characterization and computational 3D reconstruction of flagellar filament protein layer structure based on in situ spectroscopic ellipsometry measurements. Applied Surface Science, 2011, 257, 7160-7166.	6.1	20
90	Grating coupled optical waveguide interferometer for label-free biosensing. Sensors and Actuators B: Chemical, 2011, 155, 446-450.	7.8	68

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91	Ellipsometric characterization of thin nanocomposite films with tunable refractive index for biochemical sensors. Materials Research Society Symposia Proceedings, 2011, 1352, 81.	0.1	5
92	Design and process development of a photonic crystal polymer biosensor for point-of-care diagnostics. , 2011, , .		6
93	Evanescent optical waves for label-free monitoring of live cell status and behavior. , 2011, , .		0
94	Bacterial Adsorption Onto Monolayer Ferromagnetic Nanofilms. Journal of Bionanoscience, 2010, 4, 119-122.	0.4	2
95	<I>In Situ</I> Spectroscopic Ellipsometry Study of Protein Immobilization on Different Substrates Using Liquid Cells. Sensor Letters, 2010, 8, 730-735.	0.4	14
96	Spreading kinetics for quantifying cell state during stem cell differentiation. Journal of Biological Physics and Chemistry, 2010, 10, 145-151.	0.1	19
97	Protein adsorption on heterogeneous surfaces. Applied Physics Letters, 2009, 94, 083110.	3.3	19
98	Polyphenol Control of Cell Spreading on Glycoprotein Substrata. Journal of Biomaterials Science, Polymer Edition, 2009, 20, 841-851.	3.5	13
99	Optical monitoring of stem cell-substratum interactions. Journal of Biomedical Optics, 2009, 14, 010501.	2.6	29
100	Self-assembly of rodlike receptors from bulk solution. Journal of Chemical Physics, 2009, 130, 011101.	3.0	12
101	Grating coupled interferometry for optical sensing. Applied Physics B: Lasers and Optics, 2009, 97, 5-8.	2.2	49
102	Optical biosensors for cell adhesion. Journal of Receptor and Signal Transduction Research, 2009, 29, 211-223.	2.5	63
103	Deep-Probe Optical Waveguides for Chemical and Biosensors. Integrated Analytical Systems, 2009, , 395-441.	0.4	0
104	Imageless microscopy of surface patterns using optical waveguides. Applied Physics B: Lasers and Optics, 2008, 91, 319-327.	2.2	28
105	Multidepth screening of living cells using optical waveguides. Biosensors and Bioelectronics, 2008, 24, 799-804.	10.1	75
106	Integrated Deep-Probe Optical Waveguides for Label Free Bacterial Detection. , 2008, , 139-168.		0
107	Structural hysteresis and hierarchy in adsorbed glycoproteins. Journal of Chemical Physics, 2008, 129, 071102.	3.0	27
108	Quasi-isotropic Analysis of Anisotropic Thin Films on Optical Waveguides. Langmuir, 2007, 23, 9330-9334.	3.5	47

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109	Deep-probe metal-clad waveguide biosensors. Biosensors and Bioelectronics, 2007, 22, 1282-1288.	10.1	77
110	Broad-band wavelength-interrogated waveguide sensor. Applied Physics B: Lasers and Optics, 2006, 85, 21-24.	2.2	4
111	Guided wave sensing of polyelectrolyte multilayers. Applied Physics Letters, 2006, 88, 111102.	3.3	21
112	Analytical and numerical study on grating depth effects in grating coupled waveguide sensors. Applied Physics B: Lasers and Optics, 2005, 81, 65-73.	2.2	10
113	Optimization of metal-clad waveguide sensors. Sensors and Actuators B: Chemical, 2005, 106, 668-676.	7.8	107
114	Monitoring of living cell attachment and spreading using reverse symmetry waveguide sensing. Applied Physics Letters, 2005, 86, 071101.	3.3	89
115	Fabrication of reverse symmetry polymer waveguide sensor chips on nanoporous substrates using dip-floating. Journal of Micromechanics and Microengineering, 2005, 15, 1260-1264.	2.6	47
116	Peak-type and dip-type metal-clad waveguide sensing. Optics Letters, 2005, 30, 1659.	3.3	34
117	Reverse Symmetry Waveguide for Optical Biosensing. , 2005, , 279-301.		4
118	Reverse Symmetry Waveguide for Optical Biosensing. , 2005, , 279-301.		0
119	Measurement of guided light-mode intensity: An alternative waveguide sensing principle. Applied Physics Letters, 2004, 84, 4044-4046.	3.3	29
120	Application of the optical waveguide lightmode spectroscopy to monitor lipid bilayer phase transition. Biosensors and Bioelectronics, 2003, 18, 415-428.	10.1	74
121	Optical waveguide sensor for on-line monitoring of bacteria. Optics Letters, 2003, 28, 1233.	3.3	168
122	Multimode reverse-symmetry waveguide sensor for broad-range refractometry. Optics Letters, 2003, 28, 2473.	3.3	31
123	Fabrication of all-polymer freestanding waveguides. Journal of Micromechanics and Microengineering, 2003, 13, 419-424.	2.6	44
124	Demonstration of reverse symmetry waveguide sensing in aqueous solutions. Applied Physics Letters, 2002, 81, 2166-2168.	3.3	92
125	Reverse-symmetry waveguides: theory and fabrication. Applied Physics B: Lasers and Optics, 2002, 74, 383-393.	2.2	88
126	Effect of patterns and inhomogeneities on the surface of waveguides used for optical waveguide lightmode spectroscopy applications. Applied Physics B: Lasers and Optics, 2001, 72, 441-447.	2.2	32

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127	The effect of UV irradiation on uracil thin layer measured by optical waveguide lightmode spectroscopy. Biosensors and Bioelectronics, 2001, 16, 17-21.	10.1	8
128	Optical waveguide sensor for monitoring living cell morphology. , 0, , .		1
129	Deep-probe biosensing using peak-type metal-clad waveguides. , 0, , .		0