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	Optical waveguide sensor for on-line monitoring of bacteria. Optics Letters, 2003, 28, 1233.	3.3	168
2	Optimization of metal-clad waveguide sensors. Sensors and Actuators B: Chemical, 2005, 106, 668-676.	7.8	107
3	Antibiotic-induced release of small extracellular vesicles (exosomes) with surface-associated DNA. Scientific Reports, 2017, 7, 8202.	3.3	102
4	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
5	Demonstration of reverse symmetry waveguide sensing in aqueous solutions. Applied Physics Letters, 2002, 81, 2166-2168.	3.3	92
6	Monitoring of living cell attachment and spreading using reverse symmetry waveguide sensing. Applied Physics Letters, 2005, 86, 071101.	3.3	89
7	Reverse-symmetry waveguides: theory and fabrication. Applied Physics B: Lasers and Optics, 2002, 74, 383-393.	2.2	88
8	Deep-probe metal-clad waveguide biosensors. Biosensors and Bioelectronics, 2007, 22, 1282-1288.	10.1	77
9	Multidepth screening of living cells using optical waveguides. Biosensors and Bioelectronics, 2008, 24, 799-804.	10.1	75
10	Application of the optical waveguide lightmode spectroscopy to monitor lipid bilayer phase transition. Biosensors and Bioelectronics, 2003, 18, 415-428.	10.1	74
11	CD11c/CD18 Dominates Adhesion of Human Monocytes, Macrophages and Dendritic Cells over CD11b/CD18. PLoS ONE, 2016, 11, e0163120.	2.5	72
12	Grating coupled optical waveguide interferometer for label-free biosensing. Sensors and Actuators B: Chemical, 2011, 155, 446-450.	7.8	68
13	Optical biosensors for cell adhesion. Journal of Receptor and Signal Transduction Research, 2009, 29, 211-223.	2.5	63
14	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
15	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
16	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
17	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
18	Single beam grating coupled interferometry: high resolution miniaturized label-free sensor for plate based parallel screening. Optics Express, 2012, 20, 23162.	3.4	52

#	Article	IF	Citations
19	One-step green synthesis of gold nanoparticles by mesophilic filamentous fungi. Chemical Physics Letters, 2016, 645, 1-4.	2.6	52
20	Grating coupled interferometry for optical sensing. Applied Physics B: Lasers and Optics, 2009, 97, 5-8.	2.2	49
21	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
22	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
23	Quasi-isotropic Analysis of Anisotropic Thin Films on Optical Waveguides. Langmuir, 2007, 23, 9330-9334.	3.5	47
24	Bulk and surface sensitivity of a resonant waveguide grating imager. Applied Physics Letters, 2014, 104, 083506.	3.3	47
25	Green tea polyphenol tailors cell adhesivity of RGD displaying surfaces: multicomponent models monitored optically. Scientific Reports, 2017, 7, 42220.	3.3	46
26	Fabrication of all-polymer freestanding waveguides. Journal of Micromechanics and Microengineering, 2003, 13, 419-424.	2.6	44
27	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
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	Automated single cell isolation from suspension with computer vision. Scientific Reports, 2016, 6, 20375.	3.3	37
30	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
31	Peak-type and dip-type metal-clad waveguide sensing. Optics Letters, 2005, 30, 1659.	3.3	34
32	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
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	Multimode reverse-symmetry waveguide sensor for broad-range refractometry. Optics Letters, 2003, 28, 2473.	3.3	31
35	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
36	Single Cell Adhesion Assay Using Computer Controlled Micropipette. PLoS ONE, 2014, 9, e111450.	2.5	30

#	Article	IF	Citations
37	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
38	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
39	Measurement of guided light-mode intensity: An alternative waveguide sensing principle. Applied Physics Letters, 2004, 84, 4044-4046.	3.3	29
40	Optical monitoring of stem cell-substratum interactions. Journal of Biomedical Optics, 2009, 14, 010501.	2.6	29
41	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
42	Imageless microscopy of surface patterns using optical waveguides. Applied Physics B: Lasers and Optics, 2008, 91, 319-327.	2.2	28
43	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
44	Structural hysteresis and hierarchy in adsorbed glycoproteins. Journal of Chemical Physics, 2008, 129, 071102.	3.0	27
45	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
46	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
47	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
48	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
49	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
50	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
51	Guided wave sensing of polyelectrolyte multilayers. Applied Physics Letters, 2006, 88, 111102.	3.3	21
52	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
53	Protein adsorption on heterogeneous surfaces. Applied Physics Letters, 2009, 94, 083110.	3.3	19
54	Polyethylene imine-based receptor immobilization for label free bioassays. Sensors and Actuators B: Chemical, 2013, 181, 71-76.	7.8	19

#	Article	IF	Citations
55	Spring constant and sensitivity calibration of FluidFM micropipette cantilevers for force spectroscopy measurements. Scientific Reports, 2019, 9, 10287.	3.3	19
56	Spreading kinetics for quantifying cell state during stem cell differentiation. Journal of Biological Physics and Chemistry, 2010, 10, 145-151.	0.1	19
57	Grating-coupled interferometry reveals binding kinetics and affinities of Ni ions to genetically engineered protein layers. Scientific Reports, 2020, 10, 22253.	3.3	18
58	Flagellin based biomimetic coatings: From cell-repellent surfaces to highly adhesive coatings. Acta Biomaterialia, 2016, 42, 66-76.	8.3	17
59	Intensity interrogation near cutoff resonance for label-free cellular profiling. Scientific Reports, 2016, 6, 24685.	3.3	17
60	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
61	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
62	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
63	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
64	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
65	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
66	Human primary endothelial label-free biochip assay reveals unpredicted functions of plasma serine proteases. Scientific Reports, 2020, 10, 3303.	3.3	14
67	<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
68	Polyphenol Control of Cell Spreading on Glycoprotein Substrata. Journal of Biomaterials Science, Polymer Edition, 2009, 20, 841-851.	3.5	13
69	Investigation of thin polymer layers for biosensor applications. Applied Surface Science, 2013, 281, 66-72.	6.1	13
70	Automated single cell sorting and deposition in submicroliter drops. Applied Physics Letters, 2014, 105, .	3.3	13
71	Label-Free in Situ Optical Monitoring of the Adsorption of Oppositely Charged Metal Nanoparticles. Langmuir, 2014, 30, 13478-13482.	3.5	13
72	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

#	Article	IF	Citations
73	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
74	Self-assembly of rodlike receptors from bulk solution. Journal of Chemical Physics, 2009, 130, 011101.	3.0	12
75	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
76	Subnanoliter precision piezo pipette for single-cell isolation and droplet printing. Microfluidics and Nanofluidics, 2020, 24, 1.	2.2	12
77	Review of Label-Free Monitoring of Bacteria: From Challenging Practical Applications to Basic Research Perspectives. Biosensors, 2022, 12, 188.	4.7	12
78	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
79	Bacteria repellent layer made of flagellin. Sensors and Actuators B: Chemical, 2018, 257, 839-845.	7.8	10
80	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
81	Investigation of the liquid-vapour interface of aqueous methylamine solutions by computer simulation methods. Journal of Molecular Liquids, 2019, 288, 110978.	4.9	9
82	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
83	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
84	Single-cell adhesion strength and contact density drops in the M phase of cancer cells. Scientific Reports, 2021, 11, 18500.	3.3	9
85	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
86	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
87	Surface rearrangement of adsorbed EGCGâ€“mucin complexes on hydrophilic surfaces. International Journal of Biological Macromolecules, 2017, 95, 704-712.	7.5	8
88	Chemical Resonance, Beats, and Frequency Locking in Forced Chemical Oscillatory Systems. Journal of Physical Chemistry Letters, 2020, 11, 3014-3019.	4.6	8
89	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
90	ZnO Nanostructure Templates as a Cost-Efficient Mass-Producible Route for the Development of Cellular Networks. Materials, 2016, 9, 256.	2.9	7

#	Article	IF	Citations
91	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
92	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
93	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
94	Analysis of single-cell force-spectroscopy data of Vero cells recorded by FluidFM BOT. , 2020, , .		7
95	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
96	Design and process development of a photonic crystal polymer biosensor for point-of-care diagnostics. , 2011, , .		6
97	Dissociation Constant of Integrin-RGD Binding in Live Cells from Automated Micropipette and Label-Free Optical Data. Biosensors, 2021, 11, 32.	4.7	6
98	Near cut-off wavelength operation of resonant waveguide grating biosensors. Scientific Reports, 2021, 11, 13091.	3.3	6
99	Ellipsometric characterization of thin nanocomposite films with tunable refractive index for biochemical sensors. Materials Research Society Symposia Proceedings, 2011, 1352, 81.	0.1	5
100	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
101	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
102	Characterization of the Dissolution of Water Microdroplets in Oil. Colloids and Interfaces, 2022, 6, 14.	2.1	5
103	Broad-band wavelength-interrogated waveguide sensor. Applied Physics B: Lasers and Optics, 2006, 85, 21-24.	2.2	4
104	Apparent self-accelerating alternating assembly of semiconductor nanoparticles and polymers. Applied Physics Letters, 2015, 107, .	3.3	4
105	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
106	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
107	Reverse Symmetry Waveguide for Optical Biosensing. , 2005, , 279-301.		4
108	NIL fabrication of a polymer-based photonic sensor device in P3SENS project. , 2012, , .		3

#	Article	IF	Citations
109	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
110	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
111	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
112	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
113	Dextran-based Hydrogel Layers for Biosensors. , 2020, , 139-164.		3
114	Simple and automatic monitoring of cancer cell invasion into an epithelial monolayer using label-free holographic microscopy. Scientific Reports, 2022, 12, .	3.3	3
115	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
116	Bacterial Adsorption Onto Monolayer Ferromagnetic Nanofilms. Journal of Bionanoscience, 2010, 4, 119-122.	0.4	2
117	Optical waveguide sensor for monitoring living cell morphology. , 0, , .		1
118	Particle speciation during PEGâ€“Fe3O4 hybrid nanoparticle self-assembly on Si(Ti)O2. Journal of Nanoparticle Research, 2011, 13, 193-198.	1.9	1
119	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
120	Determination of the Resonance Frequency and Spring Constant of FluidFM Cantilevers with Numerical Simulations. , 2021, , .		1
121	A custom Software for the Evaluation of Single-Cell Force-Spectroscopy Data Acquired by FluidFM BOT. , 2021, , .		1
122	Deep-probe biosensing using peak-type metal-clad waveguides. , 0, , .		0
123	Integrated Deep-Probe Optical Waveguides for Label Free Bacterial Detection. , 2008, , 139-168.		0
124	Evanescent optical waves for label-free monitoring of live cell status and behavior. , 2011, , .		0
125	Nanophotonics of biomaterials and inorganic nanostructures. Journal of Physics: Conference Series, 2017, 794, 012004.	0.4	0
126	Assembly of Epithelial Monolayers and Transmigration of Cancer Cells Captured with Phase Holographic Imaging. , 2020, , .		0

#	Article	IF	Citations
127	Deep-Probe Optical Waveguides for Chemical and Biosensors. Integrated Analytical Systems, 2009, , 395-441.	0.4	0
128	Reverse Symmetry Waveguide for Optical Biosensing. , 2005, , 279-301.		0
129	Prospects of fluidic force microscopy and related biosensors for medical applications. , 2022, , 1-28.		0