

Raj Mutharasan

List of Publications by Year in descending order

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98
papers

4,796
citations

76326

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102487

66
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99
docs citations

99
times ranked

4493
citing authors

#	ARTICLE	IF	CITATIONS
1	A review of fiber-optic biosensors. <i>Sensors and Actuators B: Chemical</i> , 2007, 125, 688-703.	7.8	582
2	Biosensing using dynamic-mode cantilever sensors: A review. <i>Biosensors and Bioelectronics</i> , 2012, 32, 1-18.	10.1	255
3	Review of biosensors for foodborne pathogens and toxins. <i>Sensors and Actuators B: Chemical</i> , 2013, 183, 535-549.	7.8	194
4	Cell cycle- and growth phase-dependent variations in size distribution, antibody productivity, and oxygen demand in hybridoma cultures. <i>Biotechnology and Bioengineering</i> , 1990, 36, 839-848.	3.3	152
5	Biosensor-based microRNA detection: techniques, design, performance, and challenges. <i>Analyst</i> , The, 2014, 139, 1576.	3.5	136
6	The role of the plasma membrane fluidity on the shear sensitivity of hybridomas grown under hydrodynamic stress. <i>Biotechnology and Bioengineering</i> , 1990, 36, 911-920.	3.3	115
7	Feasibility of aluminium nitride formation in aluminum alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1995, 195, 121-129.	5.6	101
8	In situ cell detection using piezoelectric lead zirconate titanate-stainless steel cantilevers. <i>Journal of Applied Physics</i> , 2003, 93, 619-625.	2.5	93
9	Detection of pathogen <i>Escherichia coli</i> O157:H7 using self-excited PZT-glass microcantilevers. <i>Biosensors and Bioelectronics</i> , 2005, 21, 462-473.	10.1	88
10	Altered Electron Flow in Continuous Cultures of <i>Clostridium acetobutylicum</i> Induced by Viologen Dyes. <i>Applied and Environmental Microbiology</i> , 1987, 53, 1232-1235.	3.1	84
11	The influence of temperature on a mouse-mouse hybridoma growth and monoclonal antibody production. <i>Biotechnology and Bioengineering</i> , 1991, 37, 292-295.	3.3	82
12	Rapid and sensitive immunodetection of <i>Listeria monocytogenes</i> in milk using a novel piezoelectric cantilever sensor. <i>Biosensors and Bioelectronics</i> , 2013, 45, 158-162.	10.1	79
13	A rapid method for measuring intracellular pH using BCECF-AM. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2002, 1572, 143-148.	2.4	76
14	Detection of pathogen <i>Escherichia coli</i> O157:H7 AT 70cells/mL using antibody-immobilized biconical tapered fiber sensors. <i>Biosensors and Bioelectronics</i> , 2005, 21, 871-880.	10.1	76
15	Piezoelectric-excited millimeter-sized cantilever (PEMC) sensors detect <i>Bacillus anthracis</i> at 300spores/mL. <i>Biosensors and Bioelectronics</i> , 2006, 21, 1684-1692.	10.1	74
16	Method for Label-Free Detection of Femtogram Quantities of Biologics in Flowing Liquid Samples. <i>Analytical Chemistry</i> , 2007, 79, 2762-2770.	6.5	73
17	Inner filter effects and their interferences in the interpretation of culture fluorescence. <i>Biotechnology and Bioengineering</i> , 1987, 30, 769-774.	3.3	72
18	Viscosity and density values from excitation level response of piezoelectric-excited cantilever sensors. <i>Sensors and Actuators A: Physical</i> , 2007, 138, 44-51.	4.1	71

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19	Sample Preparation-Free, Real-Time Detection of microRNA in Human Serum Using Piezoelectric Cantilever Biosensors at Attomole Level. <i>Analytical Chemistry</i> , 2012, 84, 10426-10436.	6.5	70
20	Half Antibody Fragments Improve Biosensor Sensitivity without Loss of Selectivity. <i>Analytical Chemistry</i> , 2013, 85, 2472-2477.	6.5	69
21	Near real-time detection of <i>Cryptosporidium parvum</i> oocyst by IgM-functionalized piezoelectric-excited millimeter-sized cantilever biosensor. <i>Biosensors and Bioelectronics</i> , 2008, 23, 1039-1045.	10.1	63
22	Detection and Confirmation of Staphylococcal Enterotoxin B in Apple Juice and Milk Using Piezoelectric-Excited Millimeter-Sized Cantilever Sensors at 2.5 fg/mL. <i>Analytical Chemistry</i> , 2007, 79, 7636-7643.	6.5	61
23	PEMC-based Method of Measuring DNA Hybridization at Femtomolar Concentration Directly in Human Serum and in the Presence of Copious Noncomplementary Strands. <i>Analytical Chemistry</i> , 2007, 79, 7392-7400.	6.5	59
24	Detect of <i>Escherichia coli</i> O157:H7 in ground beef samples using piezoelectric excited millimeter-sized cantilever (PEMC) sensors. <i>Biosensors and Bioelectronics</i> , 2007, 22, 1296-1302.	10.1	59
25	Effects of geometry on transmission and sensing potential of tapered fiber sensors. <i>Biosensors and Bioelectronics</i> , 2006, 21, 2202-2209.	10.1	58
26	NADH fluorescence and oxygen uptake responses of hybridoma cultures to substrate pulse and step changes. <i>Biotechnology and Bioengineering</i> , 1991, 37, 141-159.	3.3	57
27	Multi-rate nonlinear state and parameter estimation in a bioreactor. , 1999, 63, 22-32.		57
28	A Gene-Based Sensitive Detection of <i>Listeria monocytogenes</i> Using a Novel Cantilever Sensor. <i>Analytical Chemistry</i> , 2013, 85, 3222-3228.	6.5	57
29	Method of Measuring <i>Bacillus anthracis</i> Spores in the Presence of Copious Amounts of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> . <i>Analytical Chemistry</i> , 2007, 79, 1145-1152.	6.5	54
30	Detection of <i>Staphylococcus enterotoxin B</i> at picogram levels using piezoelectric-excited millimeter-sized cantilever sensors. <i>Sensors and Actuators B: Chemical</i> , 2007, 126, 354-360.	7.8	54
31	Label-free detection of DNA hybridization using gold-coated tapered fiber optic biosensors (TFOBS) in a flow cell at 1310nm and 1550nm. <i>Sensors and Actuators B: Chemical</i> , 2008, 131, 640-645.	7.8	54
32	Detection of <i>Bacillus anthracis</i> spores and a model protein using PEMC sensors in a flow cell at 1mL/min. <i>Biosensors and Bioelectronics</i> , 2006, 22, 78-85.	10.1	53
33	A Method of Measuring <i>Escherichia Coli</i> O157:H7 at 1 Cell/mL in 1 Liter Sample Using Antibody Functionalized Piezoelectric-Excited Millimeter-Sized Cantilever Sensor. <i>Environmental Science & Technology</i> , 2007, 41, 1668-1674.	10.0	53
34	Sensing of liquid level at micron resolution using self-excited millimeter-sized PZT-cantilever. <i>Sensors and Actuators A: Physical</i> , 2005, 122, 326-334.	4.1	49
35	NADH and flavin fluorescence responses of starved yeast cultures to substrate additions. <i>Biotechnology and Bioengineering</i> , 1989, 34, 660-670.	3.3	48
36	Fabrication of biconical tapered optical fibers using hydrofluoric acid. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2003, 97, 87-93.	3.5	47

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37	Detection and quantification of proteins using self-excited PZT-glass millimeter-sized cantilever. <i>Biosensors and Bioelectronics</i> , 2005, 21, 597-607.	10.1	47
38	10-Minute Assay for Detecting <i>Escherichia coli</i> O157:H7 in Ground Beef Samples Using Piezoelectric-Excited Millimeter-Size Cantilever Sensors. <i>Journal of Food Protection</i> , 2007, 70, 1670-1677.	1.7	45
39	Physical refining of steel melts by filtration. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1985, 16, 725-742.	0.4	42
40	Use of Piezoelectric-Excited Millimeter-Sized Cantilever Sensors To Measure Albumin Interaction with Self-Assembled Monolayers of Alkanethiols Having Different Functional Headgroups. <i>Analytical Chemistry</i> , 2006, 78, 2328-2334.	6.5	42
41	Method for Quantification of a Prostate Cancer Biomarker in Urine without Sample Preparation. <i>Analytical Chemistry</i> , 2007, 79, 7683-7690.	6.5	42
42	Piezoelectric cantilever sensors with asymmetric anchor exhibit picogram sensitivity in liquids. <i>Sensors and Actuators B: Chemical</i> , 2011, 153, 64-70.	7.8	41
43	Fluorescent sensing using biconical tapers. <i>Sensors and Actuators B: Chemical</i> , 2003, 96, 315-320.	7.8	40
44	Rapid and Sensitive Detection of <i>Giardia lamblia</i> Using a Piezoelectric Cantilever Biosensor in Finished and Source Waters. <i>Environmental Science & Technology</i> , 2010, 44, 1736-1741.	10.0	40
45	A method for DNA-based detection of <i>E. coli</i> O157:H7 in a proteinous background using piezoelectric-excited cantilever sensors. <i>Analyst</i> , The, 2013, 138, 2943.	3.5	39
46	Experimental observations of wall slip: tube and packed bed flow. <i>Industrial & Engineering Chemistry Research</i> , 1987, 26, 1609-1616.	3.7	38
47	Effect of serum on the plasma membrane fluidity of hybridomas: an insight into its shear protective mechanism. <i>Biotechnology Progress</i> , 1992, 8, 40-50.	2.6	34
48	Decolorization of the Dye, Reactive Blue 19, Using Ozonation, Ultrasound, and Ultrasound-Enhanced Ozonation. <i>Water Environment Research</i> , 2003, 75, 171-179.	2.7	34
49	Monitoring of the Self-Assembled Monolayer of 1-Hexadecanethiol on a Gold Surface at Nanomolar Concentration Using a Piezo-Excited Millimeter-Sized Cantilever Sensor. <i>Langmuir</i> , 2005, 21, 11568-11573.	3.5	34
50	Real-time monitoring of bovine serum albumin at femtogram/mL levels on antibody-immobilized tapered fibers. <i>Sensors and Actuators B: Chemical</i> , 2007, 123, 888-895.	7.8	34
51	Piezoelectric-excited millimeter-sized cantilever sensors detect density differences of a few micrograms/mL in liquid medium. <i>Sensors and Actuators B: Chemical</i> , 2007, 124, 237-244.	7.8	34
52	Mass-change sensitivity of high-order mode of piezoelectric-excited millimeter-sized cantilever (PEMC) sensors: Theory and experiments. <i>Sensors and Actuators B: Chemical</i> , 2010, 143, 731-739.	7.8	34
53	pH Effect on Protein G Orientation on Gold Surfaces and Characterization of Adsorption Thermodynamics. <i>Langmuir</i> , 2012, 28, 6928-6934.	3.5	33
54	Highly Sensitive and Rapid Detection of Microcystin-LR in Source and Finished Water Samples Using Cantilever Sensors. <i>Environmental Science & Technology</i> , 2011, 45, 1490-1496.	10.0	31

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55	Bovine colostrum or milk as a serum substitute for the cultivation of a mouse hybridoma. <i>Biotechnology and Bioengineering</i> , 1990, 35, 882-889.	3.3	30
56	<i>Escherichia coli</i> O157:H7 Detection Limit of Millimeter-Sized PZT Cantilever Sensors is 700 Cells/mL. <i>Analytical Sciences</i> , 2005, 21, 355-357.	1.6	29
57	Evanescent sensing of biomolecules and cells. <i>Sensors and Actuators B: Chemical</i> , 2003, 88, 67-74.	7.8	28
58	Optimization of antibody immobilization for sensing using piezoelectrically excited-millimeter-sized cantilever (PEMC) sensors. <i>Sensors and Actuators B: Chemical</i> , 2007, 123, 474-479.	7.8	28
59	Piezoelectric excited millimeter sized cantilever sensors for measuring gas density changes. <i>Sensors and Actuators B: Chemical</i> , 2014, 192, 99-104.	7.8	28
60	PEMC sensor's mass change sensitivity is 20pg/Hz under liquid immersion. <i>Biosensors and Bioelectronics</i> , 2006, 22, 35-41.	10.1	26
61	Preparation-Free Method for Detecting <i>Escherichia coli</i> O157:H7 in the Presence of Spinach, Spring Lettuce Mix, and Ground Beef Particulates. <i>Journal of Food Protection</i> , 2007, 70, 2651-2655.	1.7	25
62	Method for Measuring the Self-Assembly of Alkanethiols on Gold at Femtomolar Concentrations. <i>Langmuir</i> , 2007, 23, 6856-6863.	3.5	25
63	Model protein detection using antibody-immobilized tapered fiber optic biosensors (TFOBS) in a flow cell at 1310nm and 1550nm. <i>Sensors and Actuators B: Chemical</i> , 2008, 129, 716-725.	7.8	25
64	Measurement and Modeling of Diffusion Kinetics of a Lipophilic Molecule Across Rabbit Cornea. <i>Pharmaceutical Research</i> , 2010, 27, 699-711.	3.5	25
65	The origin of low-order and high-order impedance-coupled resonant modes in piezoelectric-excited millimeter-sized cantilever (PEMC) sensors: Experiments and finite element models. <i>Sensors and Actuators B: Chemical</i> , 2011, 155, 868-877.	7.8	25
66	Detection of airborne <i>Bacillus anthracis</i> spores by an integrated system of an air sampler and a cantilever immunosensor. <i>Sensors and Actuators B: Chemical</i> , 2007, 127, 376-382.	7.8	24
67	A Cantilever Biosensor-Based Assay for Toxin-Producing Cyanobacteria <i>Microcystis aeruginosa</i> using 16S rRNA. <i>Environmental Science & Technology</i> , 2013, 47, 12333-12341.	10.0	23
68	Rapid assessment of <i>Escherichia coli</i> by growth rate on piezoelectric-excited millimeter-sized cantilever (PEMC) sensors. <i>Sensors and Actuators B: Chemical</i> , 2006, 117, 58-64.	7.8	22
69	Cantilever biosensors in drug discovery. <i>Expert Opinion on Drug Discovery</i> , 2009, 4, 1237-1251.	5.0	22
70	Ethanol fermentation characteristics of <i>Thermoanaerobacter ethanolicus</i> . <i>Enzyme and Microbial Technology</i> , 1985, 7, 87-89.	3.2	20
71	Regeneration of Gold Surfaces Covered by Adsorbed Thiols and Proteins Using Liquid-Phase Hydrogen Peroxide-Mediated UV-Photooxidation. <i>Journal of Physical Chemistry C</i> , 2013, 117, 1335-1341.	3.1	20
72	Nucleic acid electrochemical and electromechanical biosensors: a review of techniques and developments. <i>Reviews in Analytical Chemistry</i> , 2014, 33, .	3.2	19

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73	Physical immobilization characteristics of a hybridoma in a glass bead packed-bed reactor. <i>Biotechnology and Bioengineering</i> , 1989, 33, 1072-1076.	3.3	18
74	Detection of <i>Cryptosporidium parvum</i> in buffer and in complex matrix using PEMC sensors at 500cysts/mL. <i>Analytica Chimica Acta</i> , 2010, 669, 81-86.	5.4	18
75	Manipulation of End-Product Distribution in Strict Anaerobes. <i>Annals of the New York Academy of Sciences</i> , 1987, 506, 76-83.	3.8	17
76	Persistence of bending and torsional modes in piezoelectric-excited millimeter-sized cantilever (PEMC) sensors in viscous liquids - 1 to 103 cP. <i>Journal of Applied Physics</i> , 2011, 109, .	2.5	17
77	Torsional and Lateral Resonant Modes of Cantilevers as Biosensors: Alternatives to Bending Modes. <i>Analytical Chemistry</i> , 2013, 85, 1760-1766.	6.5	17
78	A novel method for monitoring mass-change response of piezoelectric-excited millimeter-sized cantilever (PEMC) sensors. <i>Sensors and Actuators B: Chemical</i> , 2009, 143, 144-151.	7.8	16
79	Measuring bacterial growth by tapered fiber and changes in evanescent field. <i>Biosensors and Bioelectronics</i> , 2006, 21, 1339-1344.	10.1	15
80	Mass-change sensitivity of piezoelectric-excited millimeter-sized cantilever (PEMC) sensors: Model and experiments. <i>Sensors and Actuators B: Chemical</i> , 2008, 132, 140-148.	7.8	15
81	Impedance change as an alternate measure of resonant frequency shift of piezoelectric-excited millimeter-sized cantilever (PEMC) sensors. <i>Sensors and Actuators B: Chemical</i> , 2010, 145, 601-604.	7.8	14
82	Sensitive and selective detection of mycoplasma in cell culture samples using cantilever sensors. <i>Biotechnology and Bioengineering</i> , 2010, 105, 1069-1077.	3.3	11
83	Expression of picogram sensitive bending modes in piezoelectric cantilever sensors with nonuniform electric fields generated by asymmetric electrodes. <i>Review of Scientific Instruments</i> , 2010, 81, 125108.	1.3	11
84	Cell Viability Measurement Using 2,7-Bis-(2-carboxyethyl)-5-(and-6)-carboxyfluorescein Acetoxymethyl Ester and a Cantilever Sensor. <i>Analytical Chemistry</i> , 2011, 83, 1480-1483.	6.5	11
85	A novel experimental technique for determining node location in resonant mode cantilevers. <i>Journal of Micromechanics and Microengineering</i> , 2011, 21, 065027.	2.6	11
86	Reduction of nonspecific protein adsorption on cantilever biosensors caused by transverse resonant mode vibration. <i>Analyst, The</i> , 2014, 139, 1112.	3.5	10
87	Protein response of insect cells to bioreactor environmental stresses. <i>Journal of Biotechnology</i> , 2005, 118, 278-289.	3.8	9
88	Nature of sensitive high-order resonant modes in piezoelectric excited millimeter sized cantilever (PEMC) sensors. <i>Sensors and Actuators A: Physical</i> , 2011, 171, 79-86.	4.1	8
89	Electrochemical piezoelectric-excited millimeter-sized cantilever (ePEMC) for simultaneous dual transduction biosensing. <i>Analyst, The</i> , 2013, 138, 6365.	3.5	7
90	Mechanical vibration-assisted modulation of <i>E. coli</i> binding to poly-l-lysine coated biosensor surface. <i>Sensors and Actuators B: Chemical</i> , 2013, 176, 1141-1146.	7.8	5

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91	Cantilever Sensors for Pathogen Detection. , 2008, , 459-480.		3
92	Adhesion determines resonance response of piezoelectric cantilever sensors. Applied Physics Letters, 2011, 98, 114101.	3.3	3
93	Acoustofluidic particle trapping, manipulation, and release using dynamic-mode cantilever sensors. Analyst, The, 2017, 142, 123-131.	3.5	3
94	Piezoelectric-Excited Millimeter-Sized Cantilever Biosensors. Methods in Molecular Biology, 2009, 504, 73-82.	0.9	2
95	Effect of Taxol and Diamide on Shear Tolerance of Hybridoma and Insect Cells. Annals of the New York Academy of Sciences, 1994, 745, 167-176.	3.8	1
96	A novel pulsed-plasma approach for protein immobilization by grafting reactive amine groups on polyurethane-coated biosensors. Sensors and Actuators B: Chemical, 2012, 173, 569-574.	7.8	1
97	Piezoelectric-excited Millimeter-sized Cantilever (PEMC) Sensors for Detecting Bioterrorism Agents. ACS Symposium Series, 2009, , 25-38.	0.5	0
98	A method for characterizing mechanical properties of sugar films using a piezoelectric-excited millimeter sized cantilever (PEMC) sensor. Sensors and Actuators B: Chemical, 2011, 160, 1304-1308.	7.8	0