Qingchuan Zhang

List of Publications by Year
in descending order

145 papers	4,209 citations	117625 34 h-index	133252 59 g-index
146 all docs	146 docs citations	146 times ranked	3380 citing authors

#	Article	IF	Citations
1	Giant Dielectric Permittivities in Functionalized Carbon-Nanotube/ Electroactive-Polymer Nanocomposites. Advanced Materials, 2007, 19, 852-857.	21.0	764
2	Three types of Portevinâ€“Le Chatelier effects: Experiment and modelling. Acta Materialia, 2007, 55, 2219-2228.	7.9	218
3	High-efficiency and high-accuracy digital image correlation for three-dimensional measurement. Optics and Lasers in Engineering, 2015, 65, 73-80.	3.8	201
4	On the propagation and pulsation of Portevin-Le Chatelier deformation bands: An experimental study with digital speckle pattern metrology. International Journal of Plasticity, 2005, 21, 2150-2173.	8.8	112
5	Two mechanisms for the normal and inverse behaviors of the critical strain for the Portevinâ€“Le Chatelier effect. Acta Materialia, 2012, 60, 6650-6656.	7.9	110
6	Fourier-based interpolation bias prediction in digital image correlation. Optics Express, 2015, 23, 19242.	3.4	81
7	Quality assessment of speckle patterns for DIC by consideration of both systematic errors and random errors. Optics and Lasers in Engineering, 2016, 86, 132-142.	3.8	81
8	Encapsulation, Compensation, and Substitution of Catalyst Particles during Continuous Growth of Carbon Nanotubes. Advanced Materials, 2007, 19, 2360-2363.	21.0	72
9	Spatial characteristics of the Portevin-Le Chatelier deformation bands in Al-4at%Cu polycrystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 403, 154-164.	5.6	66
10	Effects of Various Shape Functions and Subset Size in Local Deformation Measurements Using DIC. Experimental Mechanics, 2015, 55, 1575-1590.	2.0	66
11	Theoretical estimation of systematic errors in local deformation measurements using digital image correlation. Optics and Lasers in Engineering, 2017, 88, 265-279.	3.8	61
12	Time-resolved deformation measurements of the Portevinâ€“Le Chatelier bands. Scripta Materialia, 2007, 56, 721-724.	5.2	59
13	High-accuracy and real-time 3D positioning, tracking system for medical imaging applications based on 3D digital image correlation. Optics and Lasers in Engineering, 2017, 88, 82-90.	3.8	59
14	Detection of copper ions using microcantilever immunosensors and enzyme-linked immunosorbent assay. Analytica Chimica Acta, 2010, 676, 81-86.	5.4	58
15	Experimental analysis of image noise and interpolation bias in digital image correlation. Optics and Lasers in Engineering, 2016, 81, 46-53.	3.8	57
16	Nano-fabricated pixelated micropolarizer array for visible imaging polarimetry. Review of Scientific Instruments, 2014, 85, 105002.	1.3	55
17	Effect analysis on integration efficiency and safety performance of a battery thermal management system based on direct contact liquid cooling. Applied Thermal Engineering, 2022, 201, 117788.	6.0	52
18	Investigation of Portevinâ€“Le Chatelier Band Strain and Elastic Shrinkage in Al-Based Alloys Associated with Mg Contents. Journal of Materials Science and Technology, 2017, 33, 580-586.	10.7	51

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19	Aptamer-based microcantilever-array biosensor for profenofos detection. Analytica Chimica Acta, 2018, 1020, 116-122.	5.4	51
20	Influence of Î³â€² precipitates on the critical strain and localized deformation of serrated flow in Ni-based superalloys. Journal of Alloys and Compounds, 2017, 690, 707-715.	5.5	49
21	Strain field measurements over 3000 Â°C using 3D-Digital image correlation. Optics and Lasers in Engineering, 2020, 127, 105942.	3.8	49
22	Influence of Î³Ê¹ precipitates on Portevinâ€“Le Chatelier effect of NI-based superalloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 638, 314-321.	5.6	48
23	Spatiotemporal aspects of the Portevinâ€“Le Chatelier effect in annealed and solution-treated aluminum alloys. Scripta Materialia, 2006, 54, 2041-2045.	5.2	46
24	Label-free aptamer-based detection of microcystin-LR using a microcantilever array biosensor. Sensors and Actuators B: Chemical, 2018, 260, 42-47.	7.8	46
25	Photophoretic trapping of multiple particles in tapered-ring optical field. Optics Express, 2014, 22, 23716.	3.4	45
26	Characterization of the deformation behaviors associated with the serrated flow of a 5456 Al-based alloy using two orthogonal digital image correlation systems. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 664, 155-164.	5.6	43
27	Quantification of cell viability and rapid screening anti-cancer drug utilizing nanomechanical fluctuation. Biosensors and Bioelectronics, 2016, 77, 164-173.	10.1	42
28	Synthesis of Highâ€Quality, Doubleâ€Walled Carbon Nanotubes in a Fluidized Bed Reactor. Chemical Engineering and Technology, 2009, 32, 73-79.	1.5	41
29	Thermal analyses and simulations of the type A and type B Portevinâ€“Le Chatelier effects in an Alâ€“Mg alloy. Acta Materialia, 2012, 60, 1647-1657.	7.9	40
30	An uncooled optically readable infrared imaging detector. Sensors and Actuators A: Physical, 2007, 133, 236-242.	4.1	38
31	Real-time phase measurement of optical vortices based on pixelated micropolarizer array. Optics Express, 2015, 23, 20521.	3.4	36
32	Noise-induced bias for convolution-based interpolation in digital image correlation. Optics Express, 2016, 24, 1175.	3.4	36
33	Full-field wrist pulse signal acquisition and analysis by 3D Digital Image Correlation. Optics and Lasers in Engineering, 2017, 98, 76-82.	3.8	36
34	Interpolation bias for the inverse compositional Gaussâ€“Newton algorithm in digital image correlation. Optics and Lasers in Engineering, 2018, 100, 267-278.	3.8	36
35	Development of Protein A Functionalized Microcantilever Immunosensors for the Analyses of Small Molecules at Parts per Trillion Levels. Analytical Chemistry, 2010, 82, 615-620.	6.5	35
36	Theoretical analysis on performance of digital speckle pattern: uniqueness, accuracy, precision, and spatial resolution. Optics Express, 2019, 27, 22439.	3.4	34

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37	Glare: A free and open-source software for generation and assessment of digital speckle pattern. Optics and Lasers in Engineering, 2022, 148, 106766.	3.8	33
38	Pixelated-polarization-camera-based polarimetry system for wide real-time optical rotation measurement. Sensors and Actuators B: Chemical, 2019, 283, 857-864.	7.8	31
39	Manipulation of aerosols revolving in taper-ring optical traps. Optics Letters, 2014, 39, 100.	3.3	30
40	Nanomechanical label-free detection of aflatoxin B1 using a microcantilever. Sensors and Actuators B: Chemical, 2016, 226, 24-29.	7.8	30
41	Statistical model for speckle pattern optimization. Optics Express, 2017, 25, 30259.	3.4	30
42	A novel uncooled substrate-free optical-readable infrared detector: design, fabrication and performance. Measurement Science and Technology, 2006, 17, 1981-1986.	2.6	29
43	Investigation of Portevin-Le Chatelier effect in 5456 Al-based alloy using digital image correlation. Optics and Lasers in Engineering, 2015, 65, 89-92.	3.8	28
44	Highly Sensitive Nanomechanical Immunosensor Using Half Antibody Fragments. Analytical Chemistry, 2014, 86, 4271-4277.	6.5	27
45	Accuracy evaluation of optical distortion calibration by digital image correlation. Optics and Lasers in Engineering, 2017, 98, 143-152.	3.8	27
46	Elimination of systematic error in digital image correlation caused by intensity interpolation by introducing position randomness to subset points. Optics and Lasers in Engineering, 2019, 114, 60-75.	3.8	26
47	Mechanism and enhancement of the surface stress caused by a small-molecule antigen and antibody binding. Biosensors and Bioelectronics, 2013, 48, 67-74.	10.1	25
48	Optical readout method for microcantilever array sensing and its sensitivity analysis. Optics Letters, 2007, 32, 594.	3.3	24
49	Experimental investigations on kinetics of Portevinâ€“Le Chatelier effect in Alâ€“4wt.%Cu alloys. Journal of Alloys and Compounds, 2007, 428, 151-156.	5.5	24
50	A bi-material microcantilever temperature sensor based on optical readout. Measurement: Journal of the International Measurement Confederation, 2012, 45, 1801-1806.	5.0	23
51	Design, Fabrication, and Characterization of a 240 $ imes$ 240 MEMS Uncooled Infrared Focal Plane Array With 42-$mu hbox{m}$ Pitch Pixels. Journal of Microelectromechanical Systems, 2013, 22, 452-461.	2.5	23
52	Experimental Study on Three-Dimensional Deformation Field of Portevinâ€“Le Chatelier Effect Using Digital Image Correlation. Experimental Mechanics, 2016, 56, 1243-1255.	2.0	23
53	The Influence of Specimen Thickness on the LÃ¼ders Effect of a 5456 Al-Based Alloy: Experimental Observations. Metals, 2016, 6, 120.	2.3	22
54	Optical sensitivity analysis of deformed mirrors for microcantilever array IR imaging. Optics Express, 2009, 17, 4367.	3.4	20

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55	The influence of temperature on the PLC effect in Al-Mg alloy. Science China Technological Sciences, 2011, 54, 1389-1393.	4.0	20
56	Development of sulfhydrylated antibody functionalized microcantilever immunosensor for taxol. Sensors and Actuators B: Chemical, 2011, 156, 863-866.	7.8	20
57	An Accurate Method for Shape Retrieval and Displacement Measurement Using Bi-Prism-Based Single Lens 3D Digital Image Correlation. Experimental Mechanics, 2016, 56, 1611-1624.	2.0	20
58	Nanomechanical sensor for rapid and ultrasensitive detection of tumor markers in serum using nanobody. Nano Research, 2022, 15, 1003-1012.	10.4	20
59	Tunnel contour detection during construction based on digital image correlation. Optics and Lasers in Engineering, 2020, 126, 105879.	3.8	19
60	Synthesis of carbon nanotubes with totally hollow channels and/or with totally copper filled nanowires. Applied Physics A: Materials Science and Processing, 2006, 86, 265-269.	2.3	18
61	Performance analysis of microcantilever arrays for optical readout uncooled infrared imaging. Sensors and Actuators A: Physical, 2007, 137, 13-19.	4.1	18
62	Uncooled IR imaging using optomechanical detectors. Ultramicroscopy, 2007, 107, 610-616.	1.9	18
63	Influence of precipitation on the Portevin-Le Chatelier effect in Al-Mg alloys. Theoretical and Applied Mechanics Letters, 2011, 1, 011007.	2.8	18
64	Magnetic nanocomposite hydrogel with tunable stiffness for probing cellular responses to matrix stiffening. Acta Biomaterialia, 2022, 138, 112-123.	8.3	18
65	Uncooled infrared imaging device based on optimized optomechanical micro-cantilever array. Ultramicroscopy, 2008, 108, 579-588.	1.9	17
66	Precise 3D shape measurement of three-dimensional digital image correlation for complex surfaces. Science China Technological Sciences, 2018, 61, 68-73.	4.0	17
67	Spatial uncertainty of measurement errors in digital image correlation. Optics and Lasers in Engineering, 2018, 110, 113-121.	3.8	17
68	Label-free biosensing using a microring resonator integrated with poly-(dimethylsiloxane) microfluidic channels. Review of Scientific Instruments, 2019, 90, 035004.	1.3	17
69	Development of a Secondary Antibody Thio-Functionalized Microcantilever Immunosensor and an ELISA for Measuring Ginsenoside Re Content in the Herb Ginseng. Analytical Chemistry, 2012, 84, 4327-4333.	6.5	16
70	Nanomechanical sensors for direct and rapid characterization of sperm motility based on nanoscale vibrations. Nanoscale, 2017, 9, 18258-18267.	5.6	16
71	Aptamer-based microcantilever-array biosensor for ultra-sensitive and rapid detection of okadaic acid. Microchemical Journal, 2021, 160, 105644.	4.5	16
72	The pressure-dependent performance of a substrate-free focal plane array in an uncooled infrared imaging system. Journal of Applied Physics, 2007, 102, .	2.5	15

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73	The influence of refractive index change on a micro-cantilever bio/chemical sensor system based on optical lever read-out method. Sensors and Actuators A: Physical, 2008, 148, 329-334.	4.1	15
74	Stereo camera calibration for large field of view digital image correlation using zoom lens. Measurement: Journal of the International Measurement Confederation, 2021, 185, 109999.	5.0	15
75	Abnormal upconversion luminescence from Yb3+ doped andÂTb3+/Yb3+ codoped high silica glasses induced by intrinsic optical bistability. Applied Physics B: Lasers and Optics, 2010, 98, 261-265.	2.2	14
76	Magnetic-Field-Induced Deformation Analysis of Magnetoactive Elastomer Film by Means of DIC, LDV, and FEM. Industrial & Engineering Chemistry Research, 2018, 57, 3246-3254.	3.7	14
77	A novel opto-mechanical uncooled infrared detector. Infrared Physics and Technology, 2007, 51, 66-72.	2.9	13
78	Experimental investigation of a Portevin-Le Chatelier band in Niâ€'Co-based superalloys in relation to Î³Ê¹ precipitates at 500 â„ƒ. Journal of Materials Science and Technology, 2020, 49, 35-41.	10.7	13
79	Optimal Aperture and Digital Speckle Optimization in Digital Image Correlation. Experimental Mechanics, 2021, 61, 677-684.	2.0	13
80	Efficient and automated initial value estimation in digital image correlation for large displacement, rotation, and scaling. Applied Optics, 2020, 59, 10523.	1.8	13
81	Interface-mediated structural evolution of immiscible Co-Cu multilayers upon solid-state reaction. Physical Review B, 2001, 64, .	3.2	12
82	Design, simulation and validation of a novel uncooled infrared focal plane array. Sensors and Actuators A: Physical, 2007, 133, 64-71.	4.1	12
83	High-accuracy optical extensometer based on coordinate transform in two-dimensional digital image correlation. Optics and Lasers in Engineering, 2018, 100, 61-70.	3.8	12
84	Thermal Runaway Induced Casing Rupture: Formation Mechanism and Effect on Propagation in Cylindrical Lithium Ion Battery Module. Journal of the Electrochemical Society, 2020, 167, 090519.	2.9	12
85	Uncooled Infrared Imaging Using a Substrate-Free Focal-Plane Array. IEEE Electron Device Letters, 2008, 29, 1218-1221.	3.9	11
86	High-Accuracy, High-Efficiency Compensation Method in Two-Dimensional Digital Image Correlation. Experimental Mechanics, 2017, 57, 831-846.	2.0	11
87	Measurement of Airy-vortex beam topological charges based on a pixelated micropolarizer array. Applied Optics, 2016, 55, 9299.	2.1	11
88	Highly sensitive nanomechanical assay for the stress transmission of carbon chain. Sensors and Actuators B: Chemical, 2013, 186, 353-359.	7.8	10
89	High accuracy thermal conductivity measurement of aqueous cryoprotective agents and semi-rigid biological tissues using a microfabricated thermal sensor. Scientific Reports, 2015, 5, 10377.	3.3	10
90	Study on the out-of-plane deformation of the Portevinâ€"Le Chatelier band by using digital shearography. Measurement: Journal of the International Measurement Confederation, 2015, 72, 61-67.	5.0	10

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91	Effect of solute concentration on Portevin-Le Chatelier effect in Al-Cu alloys. Frontiers of Materials Science in China, 2007, 1, 173-176.	0.5	9
92	Optical readout sensitivity of deformed microreflector for uncooled infrared detector: theoretical model and experimental validation. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 2353.	1.5	9
93	Study on evolving phases of accelerating generalized polygon beams. Optics Express, 2016, 24, 5300.	3.4	9
94	Reconstructing Stokes parameters from non-uniform division-of-focal-plane modulation. Optics and Lasers in Engineering, 2020, 134, 106199.	3.8	9
95	LDV-induced stroboscopic digital image correlation for high spatial resolution vibration measurement. Optics Express, 2021, 29, 28134.	3.4	9
96	Deformation measurements of three types of Portevinâ€“Le Chatelier bands. Chinese Physics B, 2006, 15, 2378-2384.	1.3	8
97	Optical readout uncooled infrared imaging detector using knife-edge filter operation. Optoelectronics Letters, 2007, 3, 119-122.	0.8	8
98	Nd-doped phosphate glass microstructured optical fiber laser. Laser Physics, 2010, 20, 1425-1427.	1.2	8
99	Phase locking of a compact Nd-doped phosphate multicore fiber laser. Laser Physics, 2011, 21, 410-413.	1.2	8
100	Wave-plate phase shifting method. Optical Engineering, 2013, 52, 103109.	1.0	8
101	Quantifying 3D cell-matrix interactions during mitosis and the effect of anticancer drugs on the interactions. Nano Research, 2021, 14, 4163-4172.	10.4	8
102	High strength and ductility achieved in friction stir processed Ni-Co based superalloy with fine grains and nanotwins. Journal of Materials Science and Technology, 2022, 106, 162-172.	10.7	8
103	Microcantilever array instrument based on optical fiber and performance analysis. Review of Scientific Instruments, 2017, 88, 075007.	1.3	7
104	Performance of an optimized substrate-free focal plane array for optical readout uncooled infrared detector. Journal of Applied Physics, 2009, 105, 034505.	2.5	6
105	Optical sensitivity analysis of a bent micro reflector array in uncooled infrared imaging. Journal of Micromechanics and Microengineering, 2009, 19, 095018.	2.6	6
106	The mechanism of strain influence on interpolation induced systematic errors in digital image correlation method. Optics and Lasers in Engineering, 2019, 121, 323-333.	3.8	6
107	Uniformity and isotropy of speckle pattern cause the doubled random error phenomenon in digital image correlation. Optics and Lasers in Engineering, 2020, 131, 106097.	3.8	6
108	Error analysis of surface-distribution and non-deformation of fluorescent beads for the IC-GN2 DVC algorithm. Optics and Lasers in Engineering, 2021, 140, 106541.	3.8	6

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109	Single-camera 3D-DIC system based on a fiber bundle. Optics and Lasers in Engineering, 2021, 147, 106743.	3.8	6
110	Regulating trapping energy for multi-object manipulation by random phase encoding. Optics Letters, 2020, 45, 2002.	3.3	6
111	Nanomechanical assay for ultrasensitive and rapid detection of SARS-CoV-2 based on peptide nucleic acid. Nano Research, 2023, 16, 1183-1195.	10.4	6
112	Dynamic interaction between dislocation and diffusing solutes. Europhysics Letters, 2005, 71, 235-241.	2.0	5
113	An Optical Readout Method Based Uncooled Infrared Imaging System. Journal of Infrared, Millimeter and Terahertz Waves, 2008, 29, 261-271.	0.6	5
114	Design of a Novel Substrate-Free Double-Layer-Cantilever FPA Applied for Uncooled Optical-Readable Infrared Imaging System. IEEE Sensors Journal, 2007, 7, 1703-1710.	4.7	4
115	Design optimization and performance analysis of deformed optical readout focal plane array. Journal of Micromechanics and Microengineering, 2015, 25, 065012.	2.6	4
116	Bionic research of pit vipers on infrared imaging. Optics Express, 2015, 23, 19299.	3.4	4
117	Design of a Novel Uncooled Infrared Focal Plane Array. , 2006, , .		3
118	Effect of solute concentration on the serrated flow in solution-treated Alâ€“4%Cu alloys. Chinese Physics B, 2006, 15, 1051-1054.	1.3	3
119	A holistic approach performance analysis of substrate-free focal plane array. Journal of Applied Physics, 2012, 112, 074502.	2.5	3
120	Random errors in DIC caused by non-uniform image noise. , 2016, , .		3
121	Optical sensitivity non-uniformity analysis and optimization of a tilt optical readout focal plane array. Journal of Micromechanics and Microengineering, 2016, 26, 025001.	2.6	3
122	Video microscopy-based accurate optical force measurement by exploring a frequency-changing sinusoidal stimulus. Applied Optics, 2020, 59, 2452.	1.8	3
123	Nanomechanical vibration profiling of oocytes. Nano Research, 2023, 16, 2672-2681.	10.4	3
124	Dynamic speckle correlation method using liquid crystal TV panel for vibration analysis of light weight structure. Optics Communications, 1992, 89, 126-130.	2.1	2
125	Circuit models applied to the design of a novel uncooled infrared focal plane array structure. Measurement Science and Technology, 2007, 18, 1321-1326.	2.6	2
126	A novel MEMS-based focal plane array for infrared imaging. Frontiers of Electrical and Electronic Engineering in China: Selected Publications From Chinese Universities, 2007, 2, 83-87.	0.6	2

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127	A substrate-free optical readout focal plane array with a heat sink structure. Journal of Semiconductors, 2013, 34, 024005.	3.7	2
128	Sample manuscript for an optical readout infrared imaging system based on polarization to eliminate stray light. Journal of Applied Physics, 2013, 114, .	2.5	2
129	Optimized fast charging protocol for cylindrical <scp>lithiumâ€ion</scp> battery based on constant incremental capacity algorithm. International Journal of Energy Research, 2021, 45, 2222-2230.	4.5	2
130	Optical spatial filtering readout techniques for IR/THz imaging and their performance analysis. Measurement Science and Technology, 2021, 32, 065202.	2.6	2
131	STUDY ON TWO CRITICAL MECHANISMS OF PLC EFFECT OF 5456 Al-BASED ALLOY. Jinshu Xuebao/Acta Metallurgica Sinica, 2012, 48, 1453.	0.3	2
132	Investigation of propagation and pulsation of slip band using dynamic DSPI. , 2003, , .		1
133	Failure analysis of uncooled infrared focal plane array under a high-ginertial load. Measurement Science and Technology, 2006, 17, 2969-2972.	2.6	1
134	Preparation of a Novel Microcantilever Array Biochemical Sensor. Chinese Journal of Analytical Chemistry, 2012, 40, 493-497.	1.7	1
135	Optically trapped particle dynamic responses under varying frequency sinusoidal stimulus. Optics and Lasers in Engineering, 2020, 134, 106143.	3.8	1
136	Investigation of Portevin-Le Chatelier band with temporal phase analysis of speckle interferometry. , 2003, , .		0
137	Fabrication and application of a novel freestanding stencil bi-material cantilever structure. , 2004, , .		0
138	IR Imaging at Room-temperature Using Substrate-free Micro-cantilever Array. , 2006, , .		0
139	Cantilever-based Transducer for Molecules Configuration Research. , 2006, , .		0
140	A simple optical sequential illumination for microcantilever array. Procedia Engineering, 2010, 7, 235-238.	1.2	0
141	Research of infrared image optimization algorithm in optical read-out IR imaging. Proceedings of SPIE, 2014, , .	0.8	0
142	Microscopic Simulation for Dynamic Strain Aging by Monte Carlo Dynamic Model. International Journal for Multiscale Computational Engineering, 2016, , .	1.2	0
143	High-Accuracy and High-Efficiency Compensation Method in Two-Dimensional Digital Image Correlation. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 63-65.	0.5	0
144	Quality Assessment of Speckle Patterns by Estimating RMSE. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 71-74.	0.5	0

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145	Performance analysis of microcantilever array sensing. Science China Technological Sciences, 2017, 60, 1674-1680.	4.0	0