

Wei-Chuan Shih

List of Publications by Year in descending order

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126
papers

2,650
citations

147726

31
h-index

197736

49
g-index

130
all docs

130
docs citations

130
times ranked

2925
citing authors

#	ARTICLE	IF	CITATIONS
1	3D Cross-Point Plasmonic Nanoarchitectures Containing Dense and Regular Hot Spots for Surface-Enhanced Raman Spectroscopy Analysis. <i>Advanced Materials</i> , 2016, 28, 8695-8704.	11.1	178
2	Nanoporous Metals: From Plasmonic Properties to Applications in Enhanced Spectroscopy and Photocatalysis. <i>ACS Nano</i> , 2021, 15, 6038-6060.	7.3	120
3	Monolithic NPC nanoparticles with large surface area, tunable plasmonics, and high-density internal hot-spots. <i>Nanoscale</i> , 2014, 6, 8199-8207.	2.8	105
4	Surface-enhanced Raman spectroscopy with monolithic nanoporous gold disk substrates. <i>Nanoscale</i> , 2013, 5, 4105.	2.8	99
5	Fabricating optical lenses by inkjet printing and heat-assisted <i>in situ</i> curing of polydimethylsiloxane for smartphone microscopy. <i>Journal of Biomedical Optics</i> , 2015, 20, 047005.	1.4	91
6	Characterization of nanoporous gold disks for photothermal light harvesting and light-gated molecular release. <i>Nanoscale</i> , 2014, 6, 5718-5724.	2.8	88
7	Label-free, <i>in situ</i> SERS monitoring of individual DNA hybridization in microfluidics. <i>Nanoscale</i> , 2014, 6, 8521-8526.	2.8	85
8	Reagent- and separation-free measurements of urine creatinine concentration using stamping surface enhanced Raman scattering (S-SERS). <i>Biomedical Optics Express</i> , 2015, 6, 849.	1.5	81
9	Performance of line-scan Raman microscopy for high-throughput chemical imaging of cell population. <i>Applied Optics</i> , 2014, 53, 2881.	0.9	78
10	Microfluidic surface-enhanced Raman scattering sensor with monolithically integrated nanoporous gold disk arrays for rapid and label-free biomolecular detection. <i>Journal of Biomedical Optics</i> , 2014, 19, 111611.	1.4	77
11	Gold Nanoshell-Decorated Silicone Surfaces for the Near-Infrared (NIR) Photothermal Destruction of the Pathogenic Bacterium <i>E. faecalis</i> . <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 3981-3993.	4.0	77
12	Simultaneous Chemical and Refractive Index Sensing in the 1.5–2.5 μ m Near-Infrared Wavelength Range on Nanoporous Gold Disks. <i>Nano Letters</i> , 2016, 16, 4641-4647.	4.5	72
13	Open-source do-it-yourself multi-color fluorescence smartphone microscopy. <i>Biomedical Optics Express</i> , 2017, 8, 5075.	1.5	64
14	Laser rapid thermal annealing enables tunable plasmonics in nanoporous gold nanoparticles. <i>Nanoscale</i> , 2014, 6, 12470-12475.	2.8	62
15	Nanoporous metals by alloy corrosion: Bioanalytical and biomedical applications. <i>MRS Bulletin</i> , 2018, 43, 49-56.	1.7	60
16	Intrinsic Raman spectroscopy for quantitative biological spectroscopy Part I: Theory and simulations. <i>Optics Express</i> , 2008, 16, 12726.	1.7	55
17	Morphological control and plasmonic tuning of nanoporous gold disks by surface modifications. <i>Journal of Materials Chemistry C</i> , 2015, 3, 247-252.	2.7	55
18	High-speed hyperspectral Raman imaging for label-free compositional microanalysis. <i>Biomedical Optics Express</i> , 2013, 4, 2376.	1.5	53

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19	Photothermal inactivation of heat-resistant bacteria on nanoporous gold disk arrays. <i>Optical Materials Express</i> , 2016, 6, 1217.	1.6	53
20	Parallel Raman microspectroscopy using programmable multipoint illumination. <i>Optics Letters</i> , 2012, 37, 1289.	1.7	48
21	Stamping surface-enhanced Raman spectroscopy for label-free, multiplexed, molecular sensing and imaging. <i>Journal of Biomedical Optics</i> , 2014, 19, 050501.	1.4	48
22	Internal and external morphology-dependent plasmonic resonance in monolithic nanoporous gold nanoparticles. <i>RSC Advances</i> , 2014, 4, 36682-36688.	1.7	48
23	Noninvasive glucose sensing by transcutaneous Raman spectroscopy. <i>Journal of Biomedical Optics</i> , 2015, 20, 051036.	1.4	46
24	Smartphone Nanocolorimetry for On-Demand Lead Detection and Quantitation in Drinking Water. <i>Analytical Chemistry</i> , 2018, 90, 11517-11522.	3.2	45
25	Label-free, zeptomole cancer biomarker detection by surface-enhanced fluorescence on nanoporous gold disk plasmonic nanoparticles. <i>Journal of Biophotonics</i> , 2015, 8, 855-863.	1.1	44
26	Infrared contrast of crude-oil-covered water surfaces. <i>Optics Letters</i> , 2008, 33, 3019.	1.7	43
27	Nanoporous Gold Disks Functionalized with Stabilized G-Quadruplex Moieties for Sensing Small Molecules. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 29968-29976.	4.0	41
28	EBL-Based Fabrication and Different Modeling Approaches for Nanoporous Gold Nanodisks. <i>ACS Photonics</i> , 2017, 4, 1870-1878.	3.2	39
29	Integrated Nanogap Platform for Sub-Volt Dielectrophoretic Trapping and Real-Time Raman Imaging of Biological Nanoparticles. <i>Nano Letters</i> , 2018, 18, 5946-5953.	4.5	39
30	Constrained Regularization: A Hybrid Method for Multivariate Calibration. <i>Analytical Chemistry</i> , 2007, 79, 234-239.	3.2	34
31	Intrinsic Raman spectroscopy for quantitative biological spectroscopy Part II: Experimental applications. <i>Optics Express</i> , 2008, 16, 12737.	1.7	34
32	10 ⁵ -Enhanced Heterogeneous Nanocatalysis on a Nanoporous Gold Disk Array with High-Density Hot Spots. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 13499-13506.	4.0	33
33	Modeling of thickness dependent infrared radiance contrast of native and crude oil covered water surfaces. <i>Optics Express</i> , 2008, 16, 10535.	1.7	30
34	Symmetry Breaking-Induced Plasmonic Mode Splitting in Coupled Gold-Silver Alloy Nanodisk Array for Ultrasensitive RGB Colorimetric Biosensing. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 2273-2281.	4.0	30
35	Determination of uncertainty in parameters extracted from single spectroscopic measurements. <i>Journal of Biomedical Optics</i> , 2007, 12, 064012.	1.4	28
36	Effective Light Directed Assembly of Building Blocks with Microscale Control. <i>Small</i> , 2017, 13, 1700684.	5.2	27

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37	Far-field plasmonic coupling in 2-dimensional polycrystalline plasmonic arrays enables wide tunability with low-cost nanofabrication. <i>Nanoscale Horizons</i> , 2017, 2, 267-276.	4.1	26
38	Photothermal generation of programmable microbubble array on nanoporous gold disks. <i>Optics Express</i> , 2018, 26, 16893.	1.7	26
39	Nanoporous Gold Nanocomposites as a Versatile Platform for Plasmonic Engineering and Sensing. <i>Sensors</i> , 2017, 17, 1519.	2.1	22
40	Analysis of ethyl and methyl centralite vibrational spectra for mapping organic gunshot residues. <i>Analyst, The</i> , 2014, 139, 4270-4278.	1.7	21
41	Direct-write patterning of nanoporous gold microstructures by in situ laser-assisted dealloying. <i>Optics Express</i> , 2016, 24, 23610.	1.7	21
42	Catalytic assembly of DNA nanostructures on a nanoporous gold array as 3D architectures for label-free telomerase activity sensing. <i>Nanoscale Horizons</i> , 2017, 2, 217-224.	4.1	21
43	Line-scan Raman microscopy complements optical coherence tomography for tumor boundary detection. <i>Laser Physics Letters</i> , 2014, 11, 105602.	0.6	19
44	Plasmonic nano-aperture label-free imaging (PANORAMA). <i>Nature Communications</i> , 2020, 11, 5805.	5.8	19
45	Raman spectroscopy as a diagnostic tool for monitoring acute nephritis. <i>Journal of Biophotonics</i> , 2016, 9, 260-269.	1.1	17
46	Plasmonic nanoparticle-based expansion microscopy with surface-enhanced Raman and dark-field spectroscopic imaging. <i>Biomedical Optics Express</i> , 2018, 9, 603.	1.5	17
47	In situ patterning of hierarchical nanoporous gold structures by in-plane dealloying. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2015, 194, 34-40.	1.7	15
48	3-Dimensional Plasmonic Substrates Based on Chicken Eggshell Bio-Templates for SERS-Based Bio-Sensing. <i>Micromachines</i> , 2017, 8, 196.	1.4	15
49	Mitigating fringing in discrete frequency infrared imaging using time-delayed integration. <i>Biomedical Optics Express</i> , 2018, 9, 832.	1.5	15
50	Automated image curvature assessment and correction for high-throughput Raman spectroscopy and microscopy. <i>Biomedical Spectroscopy and Imaging</i> , 2014, 3, 359-368.	1.2	14
51	Compressed sensing hyperspectral imaging in the 0.9-2.5 μm shortwave infrared wavelength range using a digital micromirror device and InGaAs linear array detector. <i>Applied Optics</i> , 2018, 57, 5019.	0.9	12
52	Fabrication of multipoint side-firing optical fiber by laser micro-ablation. <i>Optics Letters</i> , 2017, 42, 1808.	1.7	12
53	Improvement of tissue analysis and classification using optical coherence tomography combined with Raman spectroscopy. <i>Journal of Innovative Optical Health Sciences</i> , 2015, 08, 1550006.	0.5	11
54	Investigation of Thermal Properties of Graphene-Coated Membranes by Laser Irradiation to Remove Biofoulants. <i>Environmental Science & Technology</i> , 2019, 53, 903-911.	4.6	11

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55	MEMS tunable gratings with analog actuation. <i>Information Sciences</i> , 2003, 149, 31-40.	4.0	10
56	Smartphone Nano-Colorimetry for On-Demand Multiplex Lead and Mercury Detection and Quantitation in Drinking Water. <i>IEEE Sensors Journal</i> , 2020, 20, 6685-6691.	2.4	10
57	Automated batch characterization of inkjet-printed elastomer lenses using a LEGO platform. <i>Applied Optics</i> , 2017, 56, 7346.	0.9	9
58	Toward the identification of marijuana varieties by headspace chemical forensics. <i>Forensic Chemistry</i> , 2018, 11, 23-31.	1.7	8
59	Mid-Infrared Laser Spectroscopy Detection and Quantification of Explosives in Soils Using Multivariate Analysis and Artificial Intelligence. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 4178.	1.3	8
60	Detection of phytocannabinoids from buccal swabs by headspace solid phase microextraction & gas chromatography/mass spectrometry. <i>Analytical Methods</i> , 2018, 10, 942-946.	1.3	7
61	Commercial and emerging technologies for cancer diagnosis and prognosis based on circulating tumor exosomes. <i>JPhys Photonics</i> , 2020, 2, 032002.	2.2	7
62	Directed Concentrating of Micro-/Nanoparticles via Near-Infrared Laser Generated Plasmonic Microbubbles. <i>ACS Omega</i> , 2020, 5, 32481-32489.	1.6	6
63	Constrained regularization for noninvasive glucose sensing using Raman spectroscopy. <i>Journal of Innovative Optical Health Sciences</i> , 2015, 08, 1550022.	0.5	5
64	Magnetic Active Water Filter Membrane for Induced Heating to Remove Biofoulants. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 10291-10298.	4.0	5
65	SERS-Based Ultrasensitive Lateral Flow Assay for Quantitative Sensing of Protein Biomarkers. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2021, 27, 1-8.	1.9	5
66	Morphological, plasmonic and SERS characterization of DC-sputtered gold nanoislands. <i>Biomedical Spectroscopy and Imaging</i> , 2015, 4, 95-103.	1.2	4
67	Imaging the Electrochemical Impedance of Single Cells via Conductive Polymer Thin Film. <i>ACS Sensors</i> , 2021, 6, 485-492.	4.0	4
68	Modeling the surface of fast-cured polymer droplet lenses for precision fabrication. <i>Applied Optics</i> , 2018, 57, 10342.	0.9	4
69	High-throughput Raman and surface-enhanced Raman microscopy. <i>Proceedings of SPIE</i> , 2012, , .	0.8	3
70	Optically Tunable Tin Oxide-Coated Hollow Gold-Silver Nanorattles for Use in Solar-Driven Applications. <i>ACS Omega</i> , 2020, 5, 23769-23777.	1.6	3
71	Exploring the Synergy of Radiative Coupling and Substrate Undercut in Arrayed Gold Nanodisks for Economical, Ultra-Sensitive Label-Free Biosensing. <i>IEEE Sensors Journal</i> , 2021, 21, 23971-23978.	2.4	3
72	A flexible optrode for deep brain neurophotonics. , 2011, , .		2

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73	Nanoplasmonic sensing on DNA topological structure functionalized nanoporous gold disks. , 2016, , .		2
74	Hyperspectral expansion microscopy. , 2017, , .		2
75	Oil spill sensor using multispectral infrared imaging via ℓ_1 minimization. , 2011, , .		1
76	Raman spectroscopy complements optical coherent tomography in tissue classification and cancer detection. , 2015, , .		1
77	Modeling nanoporous gold plasmonic nanoparticles: Calculation of optical properties. , 2015, , .		1
78	Photothermal inactivation of bacteria on plasmonic nanostructures. Proceedings of SPIE, 2016, , .	0.8	1
79	Portable SERS sensor for malachite green and other small dye molecules. Proceedings of SPIE, 2017, , .	0.8	1
80	Laser-assisted dealloying for direct-write patterning of plasmonic nanostructures. Proceedings of SPIE, 2017, , .	0.8	1
81	Single-molecule DNA hybridization on nanoporous gold nanoparticle array chip. Proceedings of SPIE, 2017, , .	0.8	1
82	3D plasmonic nanoarchitecture as an emerging biosensing platform. Nanomedicine, 2017, 12, 2577-2580.	1.7	1
83	Label-free Biomolecular Sensing by SERS on Nanoporous Gold Nanoparticle Arrays. , 2018, , .		1
84	Photothermal Generation of Programmable Microbubble Array on Nanoporous Gold Disks. , 2018, , .		1
85	A Miniature Lens Scanner with an Electrothermally-Actuated Micro-Stage. , 2018, , .		1
86	Plasmonic Sensors on Invisible Substrates. , 2019, , .		1
87	Plasmonic metasurfaces for sensing, typing, and killing of pathogens. , 2019, , .		1
88	Wavelength tunable plasmon enhanced photoluminescence from quantum dots. , 2015, , .		0
89	Label-free monitoring of individual DNA hybridization using SERS. Proceedings of SPIE, 2015, , .	0.8	0
90	Monolithic nanoporous gold disks with large surface area and high-density plasmonic hot-spots. Proceedings of SPIE, 2015, , .	0.8	0

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91	Stamping SERS for creatinine sensing. Proceedings of SPIE, 2015, , .	0.8	0
92	Monolithically integrated microfluidic nanoporous gold disk (NPGD) surface-enhanced Raman scattering (SERS) sensor for rapid and label-free biomolecular detection. , 2015, , .		0
93	Label-free, multiplexed, molecular sensing and imaging by stamping SERS. , 2015, , .		0
94	Photothermal light harvesting and light-gated molecular release by nanoporous gold disks. , 2015, , .		0
95	Surface-enhanced near-infrared absorption (SENIRA) spectroscopy. , 2016, , .		0
96	Gold nanoparticle decorated AAO filter membrane for SERS sensing of urine acetaminophen. , 2016, , .		0
97	Photothermal generation of microbubbles on plasmonic nanostructures inside microfluidic channels. Proceedings of SPIE, 2016, , .	0.8	0
98	Plasmonic biosensor for label-free G-quadruplexes detection. , 2016, , .		0
99	Raman and surface-enhanced Raman spectroscopy for renal condition monitoring. Proceedings of SPIE, 2016, , .	0.8	0
100	A flexible and rapid frequency selective scheme for SRS microscopy. Proceedings of SPIE, 2017, , .	0.8	0
101	Monitoring adsorption of gold nanoparticles on gold nanodisk array using dark-field hyperspectral microscopy (Conference Presentation). , 2017, , .		0
102	Fabrication and characterization of multi-point side-firing optical fiber by laser micro-ablation (Conference Presentation). , 2017, , .		0
103	DotLens smartphone microscopy for biological and biomedical applications (Conference) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 5		0
104	Tissue Engineering: Effective Light Directed Assembly of Building Blocks with Microscale Control (Small 24/2017). Small, 2017, 13, .	5.2	0
105	New fabrication technique for nanoporous gold nanoparticles (Conference Presentation). , 2017, , .		0
106	Raman spectra and DFT calculations for botryococcene and methylsqualene hydrocarbons from the B race of the green microalga Botryococcus braunii. Journal of Molecular Structure, 2017, 1147, 427-437.	1.8	0
107	Laser micro-ablated multi-point side-firing optical fiber for deep-tissue light delivery. , 2017, , .		0
108	Holographic Microbubble Actuators for Microfluidic Manipulation and Particle Assembly. , 2018, , .		0

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109	Sensitive and selective nanoplasmonic sensor by functionalized nanoporous gold nanoparticle array chip. Proceedings of SPIE, 2017, , .	0.8	0
110	3D plasmonic nanoarchitectures for extreme light concentration. , 2017, , .		0
111	Local Refractive Index Sensitivity of Nanoporous Gold Nanodisk Array. , 2018, , .		0
112	Holographic photothermal microbubble assisted imaging spectroscopy. , 2019, , .		0
113	Glucose sensing by stamping surface-enhanced Raman spectroscopy (S-SERS). , 2019, , .		0
114	Multiplex sensing of lead and mercury in drinking water using smartphone nano-colorimetry. , 2019, , .		0
115	Smartphone microscopy and nanocolorimetry. , 2019, , .		0
116	Holographic optical tweezers assisted imaging spectroscopy. , 2019, , .		0
117	Gold-Silver Alloy Nanodisk Array for Smartphone Colorimetric Biosensing. , 2019, , .		0
118	Aptamer-based SERS detection and quantitation of small molecules and enzymes on plasmonic nanostructures. , 2019, , .		0
119	Regularizing refractive index sensitivity for disordered plasmonic array. , 2019, , .		0
120	Smartphone light sheet fluorescence microscopy for molecular diagnostics. , 2019, , .		0
121	Dotlens smartphone microscopy and nano-colorimetry. , 2019, , .		0
122	Multimodal signal amplification by collaborative plasmonic intensification and catalytic multiplication (c-PI/CM). , 2019, , .		0
123	Thermal optics of ordered arrays of plasmon nanoparticles in context of SERS, cell optoporation, and pathogen destruction. , 2019, , .		0
124	Nanoplasmonic imaging of extracellular exosomes on undercut arrayed gold nanodisks. , 2020, , .		0
125	Nanoplasmonic microbubble and nanoplasmonic sensing - two birds in one stone. , 2020, , .		0
126	Smartphone sensing of multiple heavy metal ion contaminants in drinking water. , 2020, , .		0