

Shan X Wang

List of Publications by Year in descending order

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102
papers

4,257
citations

172207

29
h-index

114278

63
g-index

105
all docs

105
docs citations

105
times ranked

6130
citing authors

#	ARTICLE	IF	CITATIONS
1	Matrix-insensitive protein assays push the limits of biosensors in medicine. <i>Nature Medicine</i> , 2009, 15, 1327-1332.	15.2	359
2	Diagnostics for SARS-CoV-2 detection: A comprehensive review of the FDA-EUA COVID-19 testing landscape. <i>Biosensors and Bioelectronics</i> , 2020, 165, 112454.	5.3	323
3	Multiplex protein assays based on real-time magnetic nanotag sensing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 20637-20640.	3.3	271
4	Quantification of protein interactions and solution transport using high-density GMR sensor arrays. <i>Nature Nanotechnology</i> , 2011, 6, 314-320.	15.6	252
5	Spin valve sensors for ultrasensitive detection of superparamagnetic nanoparticles for biological applications. <i>Sensors and Actuators A: Physical</i> , 2006, 126, 98-106.	2.0	199
6	Self-healing of electrical damage in polymers using superparamagnetic nanoparticles. <i>Nature Nanotechnology</i> , 2019, 14, 151-155.	15.6	169
7	Carbon-coated FeCo nanoparticles as sensitive magnetic-particle-imaging tracers with photothermal and magnetothermal properties. <i>Nature Biomedical Engineering</i> , 2020, 4, 325-334.	11.6	160
8	One-pot synthesis of monodisperse iron oxide nanoparticles for potential biomedical applications. <i>Pure and Applied Chemistry</i> , 2006, 78, 1003-1014.	0.9	150
9	Isolation and mutational analysis of circulating tumor cells from lung cancer patients with magnetic sifters and biochips. <i>Lab on A Chip</i> , 2014, 14, 78-88.	3.1	149
10	Giant magnetoresistive biochip for DNA detection and HPV genotyping. <i>Biosensors and Bioelectronics</i> , 2008, 24, 99-103.	5.3	145
11	Two-terminal spin-orbit torque magnetoresistive random access memory. <i>Nature Electronics</i> , 2018, 1, 508-511.	13.1	141
12	Fabrication and Analysis of High-Performance Integrated Solenoid Inductor With Magnetic Core. <i>IEEE Transactions on Magnetics</i> , 2008, 44, 4089-4095.	1.2	117
13	A mountable toilet system for personalized health monitoring via the analysis of excreta. <i>Nature Biomedical Engineering</i> , 2020, 4, 624-635.	11.6	112
14	Portable, one-step, and rapid GMR biosensor platform with smartphone interface. <i>Biosensors and Bioelectronics</i> , 2016, 85, 1-7.	5.3	111
15	Room temperature exchange bias and spin valves based on BiFeO ₃ /SrRuO ₃ /SrTiO ₃ /Si (001) heterostructures. <i>Applied Physics Letters</i> , 2007, 91, .	1.5	105
16	An intravascular magnetic wire for the high-throughput retrieval of circulating tumour cells in vivo. <i>Nature Biomedical Engineering</i> , 2018, 2, 696-705.	11.6	92
17	Molecular profiling of single circulating tumor cells from lung cancer patients. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E8379-E8386.	3.3	90
18	Giant magnetoresistive sensor array for sensitive and specific multiplexed food allergen detection. <i>Biosensors and Bioelectronics</i> , 2016, 80, 359-365.	5.3	56

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19	The influence of Fermi level pinning/depinning on the Schottky barrier height and contact resistance in Ge/CoFeB and Ge/MgO/CoFeB structures. Applied Physics Letters, 2010, 96, 052514.	1.5	49
20	Fe ₃ O ₄ and its magnetic tunneling junctions grown by ion beam deposition. Journal of Applied Physics, 2003, 93, 7954-7956.	1.1	46
21	Small Molecule Detection in Saliva Facilitates Portable Tests of Marijuana Abuse. Analytical Chemistry, 2016, 88, 7457-7461.	3.2	45
22	Overhead Transmission Line Parameter Reconstruction for UAV Inspection Based on Tunneling Magneto-resistive Sensors and Inverse Models. IEEE Transactions on Power Delivery, 2019, 34, 819-827.	2.9	45
23	Magneto-nanosensor smartphone platform for the detection of HIV and leukocytosis at point-of-care. Nanomedicine: Nanotechnology, Biology, and Medicine, 2019, 16, 10-19.	1.7	38
24	Spin-dependent tunneling junctions with AlN and AlON barriers. Applied Physics Letters, 2000, 77, 2219-2221.	1.5	36
25	Magnetic, Mechanical, and Optical Characterization of a Magnetic Nanoparticle-Embedded Polymer for Microactuation. Journal of Microelectromechanical Systems, 2011, 20, 65-72.	1.7	36
26	Piezoelectricâ€“Piezoresistive Coupling MEMS Sensors for Measurement of Electric Fields of Broad Bandwidth and Large Dynamic Range. IEEE Transactions on Industrial Electronics, 2020, 67, 551-559.	5.2	33
27	Simultaneous Profiling of DNA Mutation and Methylation by Melting Analysis Using Magneto-resistive Biosensor Array. ACS Nano, 2017, 11, 8864-8870.	7.3	32
28	Quantification of cDNA on GMR biosensor array towards point-of-care gene expression analysis. Biosensors and Bioelectronics, 2019, 130, 338-343.	5.3	31
29	Multiplex giant magneto-resistive biosensor microarrays identify interferon-associated autoantibodies in systemic lupus erythematosus. Scientific Reports, 2016, 6, 27623.	1.6	30
30	Magneto-nanosensor platform for probing low-affinity proteinâ€“protein interactions and identification of a low-affinity PD-L1/PD-L2 interaction. Nature Communications, 2016, 7, 12220.	5.8	29
31	Method of interâ€“turn fault detection for nextâ€“generation smart transformers based on deep learning algorithm. High Voltage, 2019, 4, 282-291.	2.7	29
32	Denaturation strategies for detection of double stranded PCR products on GMR magnetic biosensor array. Biosensors and Bioelectronics, 2017, 93, 155-160.	5.3	28
33	Observation of the Verwey transition in thin magnetite films. Journal of Applied Physics, 2005, 97, 123901.	1.1	27
34	Magnetic energy harvesting properties of piezofiber bimorph/NdFeB composites. Applied Physics Letters, 2014, 104, .	1.5	27
35	High-frequency responses of granular CoFeHfO and amorphous CoZrTa magnetic materials. Journal of Applied Physics, 2007, 101, 123912.	1.1	25
36	Direct measurement of surface scattering in giant magneto-resistance spin valves. Journal of Applied Physics, 1999, 85, 7345-7348.	1.1	24

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37	Small-Resistance and High-Quality-Factor Magnetic Integrated Inductors on PCB. IEEE Transactions on Advanced Packaging, 2009, 32, 780-787.	1.7	24
38	An Automated, Quantitative, and Multiplexed Assay Suitable for Point-of-Care Hepatitis B Virus Diagnostics. Scientific Reports, 2019, 9, 15615.	1.6	24
39	Bio-Inspired Stretchable Absolute Pressure Sensor Network. Sensors, 2016, 16, 55.	2.1	23
40	Experimental and theoretical investigation of the precise transduction mechanism in giant magnetoresistive biosensors. Scientific Reports, 2016, 6, 18692.	1.6	21
41	Exchange-Biased Anisotropic Magnetoresistive Field Sensor. IEEE Sensors Journal, 2017, 17, 3309-3315.	2.4	21
42	Stand-Alone Stretchable Absolute Pressure Sensing System for Industrial Applications. IEEE Transactions on Industrial Electronics, 2017, 64, 8739-8746.	5.2	20
43	Spin valve biosensors: Signal dependence on nanoparticle position. Journal of Applied Physics, 2006, 99, 08P107.	1.1	19
44	Tensor Nature of Permeability and Its Effects in Inductive Magnetic Devices. IEEE Transactions on Magnetics, 2007, 43, 2373-2375.	1.2	19
45	Integrated Transformers With Sputtered Laminated Magnetic Core. IEEE Transactions on Magnetics, 2013, 49, 4021-4027.	1.2	19
46	Improved detection of prostate cancer using a magneto-nanosensor assay for serum circulating autoantibodies. PLoS ONE, 2019, 14, e0221051.	1.1	18
47	Materials Requirements of High-Speed and Low-Power Spin-Orbit-Torque Magnetic Random-Access Memory. IEEE Journal of the Electron Devices Society, 2020, 8, 674-680.	1.2	18
48	An automated and mobile magnetoresistive biosensor system for early hepatocellular carcinoma diagnosis. Biosensors and Bioelectronics, 2022, 202, 113982.	5.3	18
49	Highly sensitive detection of DNA hypermethylation in melanoma cancer cells. Biosensors and Bioelectronics, 2019, 124-125, 136-142.	5.3	17
50	Patterning of high density magnetic nanodot arrays by nanoimprint lithography. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2007, 25, 1294-1297.	0.9	16
51	Early Multiplexed Detection of Cirrhosis using Giant Magnetoresistive Biosensors with Protein Biomarkers. ACS Sensors, 2020, 5, 3049-3057.	4.0	15
52	Large and robust charge-to-spin conversion in sputtered conductive WTe with disorder. Matter, 2021, 4, 1639-1653.	5.0	15
53	Giant Magnetoresistive Nanosensor Analysis of Circulating Tumor DNA Epidermal Growth Factor Receptor Mutations for Diagnosis and Therapy Response Monitoring. Clinical Chemistry, 2021, 67, 534-542.	1.5	14
54	Functionalization of high-moment magnetic nanodisks for cell manipulation and separation. Nano Research, 2013, 6, 745-751.	5.8	13

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55	Electrically Tunable Integrated Thin-Film Magnetolectric Resonators. <i>Advanced Materials Technologies</i> , 2017, 2, 1700062.	3.0	13
56	Longitudinal Monitoring of Antibody Responses against Tumor Cells Using Magneto-nanosensors with a Nanoliter of Blood. <i>Nano Letters</i> , 2017, 17, 6644-6652.	4.5	13
57	Magneto-resistive biosensors with on-chip pulsed excitation and magnetic correlated double sampling. <i>Scientific Reports</i> , 2018, 8, 16493.	1.6	13
58	From saliva to SNP: non-invasive, point-of-care genotyping for precision medicine applications using recombinase polymerase amplification and giant magneto-resistive nanosensors. <i>Lab on A Chip</i> , 2022, 22, 2131-2144.	3.1	13
59	Designs for a Microfabricated Magnetic Sifter. <i>IEEE Transactions on Magnetics</i> , 2009, 45, 4884-4887.	1.2	12
60	Effects of lamination on soft magnetic properties of FeN films on sloping surfaces. <i>Journal of Applied Physics</i> , 1997, 81, 4507-4509.	1.1	11
61	Design and fabrication of integrated solenoid inductors with magnetic cores. , 2008, , .		11
62	Gigahertz-Band Integrated Magnetic Inductors. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2017, 65, 4893-4900.	2.9	11
63	Longitudinal Multiplexed Measurement of Quantitative Proteomic Signatures in Mouse Lymphoma Models Using Magneto-Nanosensors. <i>Theranostics</i> , 2018, 8, 1389-1398.	4.6	11
64	Large voltage control of magnetic anisotropy in CoFeB/MgO/OX structures at room temperature. <i>APL Materials</i> , 2019, 7, .	2.2	11
65	A Self-Sustained Current Sensor for Smart Grid Application. <i>IEEE Transactions on Industrial Electronics</i> , 2021, 68, 12810-12820.	5.2	11
66	A GMR-based assay for quantification of the human response to influenza. <i>Biosensors and Bioelectronics</i> , 2022, 205, 114086.	5.3	11
67	Spin-dependent tunneling junctions with Fe ₅₅ Ni ₄₅ electrodes and in situ resistive measurement of oxide growth. <i>Applied Physics Letters</i> , 1999, 74, 2528-2530.	1.5	10
68	Spin filter based tunnel junctions. <i>Journal of Applied Physics</i> , 2006, 100, 123909.	1.1	10
69	Analytical formula for the tunneling current versus voltage for multilayer barrier structures. <i>Journal of Applied Physics</i> , 2007, 101, 083706.	1.1	10
70	An electrodynamic energy harvester with a 3D printed magnet and optimized topology. <i>Applied Physics Letters</i> , 2019, 114, 013902.	1.5	10
71	Portable biomarker detection with magnetic nanotags. , 2010, , 1779-1782.		9
72	Effect of Mg Oxidation Degree on Rashba-Effect-Induced Torques in Ta/CoFeB/Mg(MgO) Multilayer. <i>IEEE Transactions on Magnetics</i> , 2016, 52, 1-4.	1.2	9

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73	Spin-wave resonances in the presence of a Bloch wall. <i>Physical Review B</i> , 2014, 89, .	1.1	8
74	A Novel Current Reconstruction Method Based on Elastic Net Regularization. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2020, 69, 7484-7493.	2.4	8
75	Pilot Application of Magnetic Nanoparticle-Based Biosensor for Necrotizing Enterocolitis. <i>Journal of Proteomics and Bioinformatics</i> , 2015, s5, .	0.4	8
76	Pulsed laser deposition grown CoFe ₂ O ₄ /Fe ₃ O ₄ bilayers and their tunneling characteristics. <i>Journal of Applied Physics</i> , 2005, 97, 10C915.	1.1	7
77	Modeling and experiments of magneto-nanosensors for diagnostics of radiation exposure and cancer. <i>Biomedical Microdevices</i> , 2013, 15, 665-671.	1.4	7
78	High-throughput full-length single-cell mRNA-seq of rare cells. <i>PLoS ONE</i> , 2017, 12, e0188510.	1.1	7
79	Spin-Orbit-Torque Material Exploration for Maximum Array-Level Read/Write Performance. , 2020, , .		7
80	Kerr-Imaged Edge-Curling Wall Effects of Narrow Magnetic Cores. <i>IEEE Transactions on Magnetics</i> , 2013, 49, 4017-4020.	1.2	6
81	Nonreciprocal Spin Waves in Co-Ta-Zr Films and Multilayers. <i>IEEE Transactions on Magnetics</i> , 2009, 45, 4215-4218.	1.2	5
82	On-package magnetic materials for embedded inductor applications. , 2009, , .		5
83	Gradual pressure release for reliable nanoimprint lithography. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2011, 29, .	0.6	5
84	Achieving Isotropic Permeability for Integrated Inductors. <i>IEEE Transactions on Magnetics</i> , 2015, 51, 1-4.	1.2	5
85	Parametric Reconstruction of Multiple Line Currents Based on Magnetic Sensor Array. <i>IEEE Transactions on Magnetics</i> , 2020, 56, 1-8.	1.2	5
86	Tunable spin-orbit torque efficiency in in-plane and perpendicular magnetized [Pt/Co] _n multilayer. <i>Applied Physics Letters</i> , 2021, 118, 042405.	1.5	5
87	Fabrication and Comparison of Broad-band Inductors with One and Two Co-based Amorphous Ground Planes. <i>Transactions of the Magnetics Society of Japan</i> , 2002, 2, 357-360.	0.5	5
88	Investigation of ion beam deposited spin valve interface structure by ⁵⁹ Co nuclear magnetic resonance. <i>Journal of Applied Physics</i> , 1999, 85, 4439-4441.	1.1	4
89	Integrated Microstrip Lines With Co-Ta-Zr Magnetic Films. <i>IEEE Transactions on Magnetics</i> , 2008, 44, 3103-3106.	1.2	4
90	Dependence of Natural Oxidation Spin-Dependent Tunneling Junction on Junction Area. <i>Physica Status Solidi A</i> , 2002, 189, 659-662.	1.7	3

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91	Spin-orbit torques of an in-plane magnetized system modulated by the spin transport in the ferromagnetic Co layer. <i>APL Materials</i> , 2021, 9, .	2.2	2
92	Materials Requirements of High-Speed and Low-Power Spin-Orbit-Torque Magnetic Random-Access Memory. , 2019, , .		2
93	The Dependence Of Overwrite On Non-linear Transition Shift. , 0, , .		1
94	Rapid Characterization of Magnetic Moment of Cells for Magnetic Separation. <i>IEEE Transactions on Magnetics</i> , 2013, 49, 3434-3437.	1.2	1
95	Multigene profiling of single circulating tumor cells. <i>Molecular and Cellular Oncology</i> , 2017, 4, e1289295.	0.3	1
96	Capture and Genetic Analysis of Circulating Tumor Cells Using a Magnetic Separation Device (Magnetic Sifter). <i>Methods in Molecular Biology</i> , 2017, 1634, 153-162.	0.4	1
97	Drive-Current-Free Switch With Internal Transduction in a Magneto Piezo-Electronic Transistor. <i>IEEE Transactions on Industrial Electronics</i> , 2020, 67, 3257-3266.	5.2	1
98	In SITU And EX SITU Observation Of Spin-valves Obtained By Ion-beam Deposition. , 0, , .		0
99	Domain Structures And Magnetic Properties Of FeN Films Depostird On Sloping Surfaces. , 0, , .		0
100	Surface scattering dependence of GMR in spin valves: the effect of RU overlayers. , 1999, , .		0
101	Surface specularity of NiFe, Co and Cu thin films by in-situ conductance measurement. , 1999, , .		0
102	Flow Homogenization Enables a Massively Parallel Fluidic Design for High-throughput and Multiplexed Cell Isolation. <i>Advanced Materials Technologies</i> , 2020, 5, 1900960.	3.0	0