Vincent Ch Lee

List of Publications by Citations

487 papers	15,137 citations	64 h-index	93 g-index
619 ext. papers	20,378 ext. citations	6.9 avg, IF	7.57 L-index

#	Paper	IF	Citations
487	A comprehensive review on piezoelectric energy harvesting technology: Materials, mechanisms, and applications. *Applied Physics Reviews*, **2018**, 5, 041306	17.3	316
486	Piezoelectric MEMS Energy Harvester for Low-Frequency Vibrations With Wideband Operation Range and Steadily Increased Output Power. *Journal of Microelectromechanical Systems*, **2011**, 20, 1131-1142	2.5	258
485	Electromagnetic energy harvesting from vibrations of multiple frequencies. *Journal of Micromechanics and Microengineering*, **2009**, 19, 035001	2	238
484	Haptic-feedback smart glove as a creative human-machine interface (HMI) for virtual/augmented reality applications. *Science Advances*, **2020**, 6, eaaz8693	14.3	177
483	More than energy harvesting □Combining triboelectric nanogenerator and flexible electronics technology for enabling novel micro-/nano-systems. *Nano Energy*, **2019**, 57, 851-871	17.1	177
482	Investigation of a MEMS piezoelectric energy harvester system with a frequency-widened-bandwidth mechanism introduced by mechanical stoppers. *Smart Materials and Structures*, **2012**, 21, 035005	3.4	167
481	Design, Fabrication, and Characterization of CMOS MEMS-Based Thermoelectric Power Generators. *Journal of Microelectromechanical Systems*, **2010**, 19, 317-324	2.5	159
480	Active Control of Electromagnetically Induced Transparency Analog in Terahertz MEMS Metamaterial. *Advanced Optical Materials*, **2016**, 4, 541-547	8.1	150
479	Piezoelectric MEMS-based wideband energy harvesting systems using a frequency-up-conversion cantilever stopper. *Sensors and Actuators A: Physical*, **2012**, 186, 242-248	3.9	148
478	An intelligent skin based self-powered finger motion sensor integrated with triboelectric nanogenerator. *Nano Energy*, **2016**, 19, 532-540	17.1	147
477	Self-Powered and Self-Functional Cotton Sock Using Piezoelectric and Triboelectric Hybrid Mechanism for Healthcare and Sports Monitoring. *ACS Nano*, **2019**, 13, 1940-1952	16.7	144
476	Progress in wearable electronics/photonics□Moving toward the era of artificial intelligence and internet of things. *Informa□□Materi□y*, **2020**, 2, 1131-1162	23.1	143
475	Silicon photonic platforms for mid-infrared applications [Invited]. *Photonics Research*, **2017**, 5, 417	6	140
474	High-Performance, Room Temperature, Ultra-Broadband Photodetectors Based on Air-Stable PdSe. *Advanced Materials*, **2019**, 31, e1807609	24	135
473	Triboelectric nanogenerator sensors for soft robotics aiming at digital twin applications. *Nature Communications*, **2020**, 11, 5381	17.4	133
472	Machine Learning Glove Using Self-Powered Conductive Superhydrophobic Triboelectric Textile for Gesture Recognition in VR/AR Applications. *Advanced Science*, **2020**, 7, 2000261	13.6	127
471	Reconfigurable MEMS Fano metasurfaces with multiple-input-output states for logic operations at terahertz frequencies. *Nature Communications*, **2018**, 9, 4056	17.4	124

470	Beyond energy harvesting - multi-functional triboelectric nanosensors on a textile. *Nano Energy*, **2019**, 57, 338-352	17.1	119
469	Triboelectric Self-Powered Wearable Flexible Patch as 3D Motion Control Interface for Robotic Manipulator. *ACS Nano*, **2018**, 12, 11561-11571	16.7	118
468	Self-powered liquid triboelectric microfluidic sensor for pressure sensing and finger motion monitoring applications. *Nano Energy*, **2016**, 30, 450-459	17.1	116
467	Tunable multiband terahertz metamaterials using a reconfigurable electric split-ring resonator array. *Light: Science and Applications*, **2014**, 3, e171-e171	16.7	111
466	A new energy harvester design for high power output at low frequencies. *Sensors and Actuators A: Physical*, **2013**, 199, 344-352	3.9	110
465	Self-excited piezoelectric PZT microcantilevers for dynamic SFM□with inherent sensing and actuating capabilities. *Sensors and Actuators A: Physical*, **1999**, 72, 179-188	3.9	110
464	Self-Sustainable Wearable Textile Nano-Energy Nano-System (NENS) for Next-Generation Healthcare Applications. *Advanced Science*, **2019**, 6, 1901437	13.6	108
463	A new S-shaped MEMS PZT cantilever for energy harvesting from low frequency vibrations below 30 Hz. *Microsystem Technologies*, **2012**, 18, 497-506	1.7	107
462	MEMS Based Broadband Piezoelectric Ultrasonic Energy Harvester (PUEH) for Enabling Self-Powered Implantable Biomedical Devices. *Scientific Reports*, **2016**, 6, 24946	4.9	103
461	Ultra-thin flexible polyimide neural probe embedded in a dissolvable maltose-coated microneedle. *Journal of Micromechanics and Microengineering*, **2014**, 24, 065015	2	98
460	Self-powered triboelectric nanogenerator buoy ball for applications ranging from environment monitoring to water wave energy farm. *Nano Energy*, **2017**, 40, 203-213	17.1	96
459	Waveguide-Integrated Black Phosphorus Photodetector for Mid-Infrared Applications. *ACS Nano*, **2019**, 13, 913-921	16.7	96
458	Minimalist and multi-functional human machine interface (HMI) using a flexible wearable triboelectric patch. *Nano Energy*, **2019**, 62, 355-366	17.1	92
457	A rotational pendulum based electromagnetic/triboelectric hybrid-generator for ultra-low-frequency vibrations aiming at human motion and blue energy applications. *Nano Energy*, **2019**, 63, 103871	17.1	92
456	Deep learning enabled smart mats as a scalable floor monitoring system. *Nature Communications*, **2020**, 11, 4609	17.4	92
455	Development of piezoelectric microcantilever flow sensor with wind-driven energy harvesting capability. *Applied Physics Letters*, **2012**, 100, 223905	3.4	91
454	Self-powered glove-based intuitive interface for diversified control applications in real/cyber space. *Nano Energy*, **2019**, 58, 641-651	17.1	89
453	Self-Powered Bio-Inspired Spider-Net-Coding Interface Using Single-Electrode Triboelectric Nanogenerator. *Advanced Science*, **2019**, 6, 1900617	13.6	89

452	Active Phase Transition via Loss Engineering in a Terahertz MEMS Metamaterial. *Advanced Materials*, **2017**, 29, 1700733	24	87
451	Large Scale Triboelectric Nanogenerator and Self-Powered Pressure Sensor Array Using Low Cost Roll-to-Roll UV Embossing. *Scientific Reports*, **2016**, 6, 22253	4.9	87
450	Triboelectric liquid volume sensor for self-powered lab-on-chip applications. *Nano Energy*, **2016**, 23, 80-88	17.1	87
449	Development of battery-free neural interface and modulated control of tibialis anterior muscle via common peroneal nerve based on triboelectric nanogenerators (TENGs). *Nano Energy*, **2017**, 33, 1-11	17.1	85
448	A non-resonant rotational electromagnetic energy harvester for low-frequency and irregular human motion. *Applied Physics Letters*, **2018**, 113, 203901	3.4	85
447	Active Multifunctional Microelectromechanical System Metadevices: Applications in Polarization Control, Wavefront Deflection, and Holograms. *Advanced Optical Materials*, **2017**, 5, 1600716	8.1	84
446	Technologies toward next generation human machine interfaces: From machine learning enhanced tactile sensing to neuromorphic sensory systems. *Applied Physics Reviews*, **2020**, 7, 031305	17.3	84
445	Broadband Energy Harvester Using Non-linear Polymer Spring and Electromagnetic/Triboelectric Hybrid Mechanism. *Scientific Reports*, **2017**, 7, 41396	4.9	82
444	Hybrid energy harvester based on piezoelectric and electromagnetic mechanisms. *Journal of Micro/ Nanolithography, MEMS, and MOEMS*, **2010**, 9, 023002	0.7	82
443	Self-Powered Dual-Mode Amenity Sensor Based on the Water-Air Triboelectric Nanogenerator. *ACS Nano*, **2017**, 11, 10337-10346	16.7	81
442	Controlling Surface Charge Generated by Contact Electrification: Strategies and Applications. *Advanced Materials*, **2018**, 30, e1802405	24	81
441	Leveraging of MEMS Technologies for Optical Metamaterials Applications. *Advanced Optical Materials*, **2020**, 8, 1900653	8.1	81
440	Hybrid Metamaterial Absorber Platform for Sensing of CO Gas at Mid-IR. *Advanced Science*, **2018**, 5, 1700581	15.1	80
439	Making use of nanoenergy from human □Nanogenerator and self-powered sensor enabled sustainable wireless IoT sensory systems. *Nano Today*, **2021**, 36, 101016	17.9	79
438	Self-Powered Direct Muscle Stimulation Using a Triboelectric Nanogenerator (TENG) Integrated with a Flexible Multiple-Channel Intramuscular Electrode. *ACS Nano*, **2019**, 13, 3589-3599	16.7	77
437	Technology evolution from self-powered sensors to AIoT enabled smart homes. *Nano Energy*, **2021**, 79, 105414	17.1	77
436	Application of sol□el deposited thin PZT film for actuation of 1D and 2D scanners. *Sensors and Actuators A: Physical*, **1999**, 73, 144-152	3.9	76
435	Deep learning-enabled triboelectric smart socks for IoT-based gait analysis and VR applications. *Npj Flexible Electronics*, **2020**, 4,	10.7	76

434	A Black Phosphorus Carbide Infrared Phototransistor. *Advanced Materials*, **2018**, 30, 1705039	24	75
433	Toward Self-Powered Wearable Adhesive Skin Patch with Bendable Microneedle Array for Transdermal Drug Delivery. *Advanced Science*, **2016**, 3, 1500441	13.6	75
432	Computational Study of Photonic Crystals Nano-Ring Resonator for Biochemical Sensing. *IEEE Sensors Journal*, **2010**, 10, 1185-1191	4	74
431	Development Trends and Perspectives of Future Sensors and MEMS/NEMS. *Micromachines*, **2019**, 11,	3.3	74
430	From flexible electronics technology in the era of IoT and artificial intelligence toward future implanted body sensor networks. *APL Materials*, **2019**, 7, 031302	5.7	73
429	A multi-frequency vibration-based MEMS electromagnetic energy harvesting device. *Sensors and Actuators A: Physical*, **2013**, 204, 37-43	3.9	73
428	Study of electrothermal V-beam actuators and latched mechanism for optical switch. *Journal of Micromechanics and Microengineering*, **2005**, 15, 11-19	2	71
427	Self-Powered Gyroscope Ball Using a Triboelectric Mechanism. *Advanced Energy Materials*, **2017**, 7, 1701308	21.8	68
426	Study of thin film blue energy harvester based on triboelectric nanogenerator and seashore IoT applications. *Nano Energy*, **2019**, 66, 104167	17.1	66
425	Non-resonant electromagnetic wideband energy harvesting mechanism for low frequency vibrations. *Microsystem Technologies*, **2010**, 16, 961-966	1.7	65
424	Characterization of heavily doped polysilicon films for CMOS-MEMS thermoelectric power generators. *Journal of Micromechanics and Microengineering*, **2009**, 19, 125029	2	64
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422	Battery-free neuromodulator for peripheral nerve direct stimulation. *Nano Energy*, **2018**, 50, 148-158	17.1	63
421	Nanofluidic terahertz metasensor for sensing in aqueous environment. *Applied Physics Letters*, **2018**, 113, 071105	3.4	63
420	Micro-electro-mechanically switchable near infrared complementary metamaterial absorber. *Applied Physics Letters*, **2014**, 104, 201114	3.4	63
419	Development of stress-induced curved actuators for a tunable THz filter based on double split-ring resonators. *Applied Physics Letters*, **2013**, 102, 111908	3.4	63
418	Micromachined piezoelectric force sensors based on PZT thin films. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **1996**, 43, 553-559	3.2	63
417	Self-powered control interface based on Gray code with hybrid triboelectric and photovoltaics energy harvesting for IoT smart home and access control applications. *Nano Energy*, **2020**, 70, 104456	17.1	63

416	Hybrid energy harvesting technology: From materials, structural design, system integration to applications. *Renewable and Sustainable Energy Reviews*, **2021**, 137, 110473	16.2	63
415	Electrothermally actuated microelectromechanical systems based omega-ring terahertz metamaterial with polarization dependent characteristics. *Applied Physics Letters*, **2014**, 104, 161104	3.4	62
414	Development of neural interfaces and energy harvesters towards self-powered implantable systems for healthcare monitoring and rehabilitation purposes. *Nano Energy*, **2019**, 65, 104039	17.1	61
413	Toward Self-Control Systems for Neurogenic Underactive Bladder: A Triboelectric Nanogenerator Sensor Integrated with a Bistable Micro-Actuator. *ACS Nano*, **2018**, 12, 3487-3501	16.7	61
412	Characterization of micromachined piezoelectric PZT force sensors for dynamic scanning force microscopy. *Review of Scientific Instruments*, **1997**, 68, 2091-2100	1.7	61
411	Progress of Flexible Electronics in Neural Interfacing - A Self-Adaptive Non-Invasive Neural Ribbon Electrode for Small Nerves Recording. *Advanced Materials*, **2016**, 28, 4472-9	24	61
410	A MEMS rotary comb mechanism for harvesting the kinetic energy of planar vibrations. *Journal of Micromechanics and Microengineering*, **2010**, 20, 065017	2	60
409	Advances in chemical sensing technology for enabling the next-generation self-sustainable integrated wearable system in the IoT era. *Nano Energy*, **2020**, 78, 105155	17.1	59
408	Self-powered multifunctional monitoring system using hybrid integrated triboelectric nanogenerators and piezoelectric microsensors. *Nano Energy*, **2019**, 58, 612-623	17.1	58
407	Investigation of Low-Current Direct Stimulation for Rehabilitation Treatment Related to Muscle Function Loss Using Self-Powered TENG System. *Advanced Science*, **2019**, 6, 1900149	13.6	58
406	Infrared Black Phosphorus Phototransistor with Tunable Responsivity and Low Noise Equivalent Power. *ACS Applied Materials & Interfaces*, **2017**, 9, 36130-36136	9.5	57
405	Electret-material enhanced triboelectric energy harvesting from air flow for self-powered wireless temperature sensor network. *Sensors and Actuators A: Physical*, **2018**, 271, 364-372	3.9	57
404	A comprehensive study of non-linear air damping and pull-in effects on the electrostatic energy harvesters. *Energy Conversion and Management*, **2020**, 203, 112264	10.6	57
403	Progress in TENG technology—A journey from energy harvesting to nanoenergy and nanosystem. *EcoMat*, **2020**, 2, e12058	9.4	57
402	A flexible three-dimensional electrode mesh: An enabling technology for wireless brain-computer interface prostheses. *Microsystems and Nanoengineering*, **2016**, 2, 16012	7.7	56
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399	Development of a Broadband Triboelectric Energy Harvester With SU-8 Micropillars. *Journal of Microelectromechanical Systems*, **2015**, 24, 91-99	2.5	55

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397	Toward Bioelectronic Medicine-Neuromodulation of Small Peripheral Nerves Using Flexible Neural Clip. *Advanced Science*, **2017**, 4, 1700149	13.6	54
396	Selective stimulation and neural recording on peripheral nerves using flexible split ring electrodes. *Sensors and Actuators B: Chemical*, **2017**, 242, 1165-1170	8.5	53
395	Dual band complementary metamaterial absorber in near infrared region. *Journal of Applied Physics* , **2014**, 115, 193109	2.5	53
394	Active control of near-field coupling in conductively coupled microelectromechanical system metamaterial devices. *Applied Physics Letters*, **2016**, 108, 111102	3.4	53
393	Battery-free short-range self-powered wireless sensor network (SS-WSN) using TENG based direct sensory transmission (TDST) mechanism. *Nano Energy*, **2020**, 67, 104266	17.1	52
392	All-Dielectric Surface-Enhanced Infrared Absorption-Based Gas Sensor Using Guided Resonance. *ACS Applied Materials & Interfaces*, **2018**, 10, 38272-38279	9.5	52
391	A scrape-through piezoelectric MEMS energy harvester with frequency broadband and up-conversion behaviors. *Microsystem Technologies*, **2011**, 17, 1747-1754	1.7	51
390	Direct muscle stimulation using diode-amplified triboelectric nanogenerators (TENGs). *Nano Energy* , **2019**, 63, 103844	17.1	50
389	A novel hybridized blue energy harvester aiming at all-weather IoT applications. *Nano Energy*, **2020**, 76, 105052	17.1	50
388	Development of a piezoelectric self-excitation and self-detection mechanism in PZT microcantilevers for dynamic scanning force microscopy in liquid. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **1997**, 15, 1559		50
387	Self-powered eye motion sensor based on triboelectric interaction and near-field electrostatic induction for wearable assistive technologies. *Nano Energy*, **2020**, 72, 104675	17.1	49
386	A Junctionless Gate-All-Around Silicon Nanowire FET of High Linearity and Its Potential Applications. *IEEE Electron Device Letters*, **2013**, 34, 478-480	4.4	49
385	Optical Nanofilters Based on Meta-Atom Side-Coupled Plasmonics Metal- Insulator-Metal Waveguides. *Journal of Lightwave Technology*, **2013**, 31, 2876-2880	4	49
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383	Characterization of piezoelectric PZT beam actuators for driving 2D scanning micromirrors. *Sensors and Actuators A: Physical*, **2010**, 162, 336-347	3.9	49
382	Promoting smart cities into the 5G era with multi-field Internet of Things (IoT) applications powered with advanced mechanical energy harvesters. *Nano Energy*, **2021**, 88, 106304	17.1	49
381	Theoretical comparison of the energy harvesting capability among various electrostatic mechanisms from structure aspect. *Sensors and Actuators A: Physical*, **2009**, 156, 208-216	3.9	48

380	Bilayer graphene nanoribbon nanoelectromechanical system device: A computational study. *Applied Physics Letters*, **2009**, 95, 143107	3.4	48
379	Novel augmented reality interface using a self-powered triboelectric based virtual reality 3D-control sensor. *Nano Energy*, **2018**, 51, 162-172	17.1	47
378	Mechano-neuromodulation of autonomic pelvic nerve for underactive bladder: A triboelectric neurostimulator integrated with flexible neural clip interface. *Nano Energy*, **2019**, 60, 449-456	17.1	46
377	Design and Modeling of a Nanomechanical Sensor Using Silicon Photonic Crystals. *Journal of Lightwave Technology*, **2008**, 26, 839-846	4	46
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372	Dynamics of wicking in silicon nanopillars fabricated with interference lithography and metal-assisted chemical etching. *Langmuir*, **2012**, 28, 11465-71	4	44
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370	Optimization of NEMS pressure sensors with a multilayered diaphragm using silicon nanowires as piezoresistive sensing elements. *Journal of Micromechanics and Microengineering*, **2012**, 22, 055012	2	43
369	A dual-silicon-nanowires based U-shape nanoelectromechanical switch with low pull-in voltage. *Applied Physics Letters*, **2012**, 100, 113102	3.4	43
368	Optical nanomechanical sensor using a silicon photonic crystal cantilever embedded with a nanocavity resonator. *Applied Optics*, **2009**, 48, 1797-803	0.2	43
367	Investigation of the Nonlinear Electromagnetic Energy Harvesters From Hand Shaking. *IEEE Sensors Journal*, **2015**, 15, 2356-2364	4	42
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365	Reconfigurable Digital Metamaterial for Dynamic Switching of Terahertz Anisotropy. *Advanced Optical Materials*, **2016**, 4, 391-398	8.1	42
364	Investigation of contact electrification based broadband energy harvesting mechanism using elastic PDMS microstructures. *Journal of Micromechanics and Microengineering*, **2014**, 24, 104002	2	41
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362	Smart materials for smart healthcare□moving from sensors and actuators to self-sustained nanoenergy nanosystems. *Smart Materials in Medicine*, **2020**, 1, 92-124	12.9	41
361	Artificial Intelligence of Things (AIoT) Enabled Virtual Shop Applications Using Self-Powered Sensor Enhanced Soft Robotic Manipulator. *Advanced Science*, **2021**, 8, e2100230	13.6	41
360	Wafer bonding by low-temperature soldering. *Sensors and Actuators A: Physical*, **2000**, 85, 330-334	3.9	40
359	Active Control of Resonant Cloaking in a Terahertz MEMS Metamaterial. *Advanced Optical Materials* , **2018**, 6, 1800141	8.1	40
358	Microelectromechanically reconfigurable interpixelated metamaterial for independent tuning of multiple resonances at terahertz spectral region. *Optica*, **2015**, 2, 571	8.6	39
357	Polarization-sensitive microelectromechanical systems based tunable terahertz metamaterials using three dimensional electric split-ring resonator arrays. *Applied Physics Letters*, **2013**, 102, 161912	3.4	39
356	Black Phosphorus Carbide as a Tunable Anisotropic Plasmonic Metasurface. *ACS Photonics*, **2018**, 5, 3116633123		39
355	An Intermittent Self-Powered Energy Harvesting System From Low-Frequency Hand Shaking. *IEEE Sensors Journal*, **2015**, 15, 4782-4790	4	38
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353	Novel VOA using in-plane reflective micromirror and off-axis light attenuation **2003**, 41, S16-S20		38
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346	Advances in nanomaterials and their applications in point of care (POC) devices for the diagnosis of infectious diseases. *Biotechnology Advances*, **2016**, 34, 1275-1288	17.8	36
345	Hybridized wearable patch as a multi-parameter and multi-functional human-machine interface. *Nano Energy*, **2021**, 81, 105582	17.1	36

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340	Novel CMOS-Compatible MoAlNMo Platform for Metamaterial-Based Mid-IR Absorber. *ACS Photonics*, **2017**, 4, 302-315	6.3	34
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335	Nanoelectromechanical torsion switch of low operation voltage for nonvolatile memory application. *Applied Physics Letters*, **2010**, 96, 193113	3.4	34
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332	Investigation of geometric design in piezoelectric microelectromechanical systems diaphragms for ultrasonic energy harvesting. *Applied Physics Letters*, **2016**, 108, 193902	3.4	33
331	A self-powered 3D activity inertial sensor using hybrid sensing mechanisms. *Nano Energy*, **2019**, 56, 651-661	17.1	33
330	Characterization of intermediate In/Ag layers of low temperature fluxless solder based wafer bonding for MEMS packaging. *Sensors and Actuators A: Physical*, **2009**, 154, 85-91	3.9	32
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328	Si nanophotonics based cantilever sensor. *Applied Physics Letters*, **2008**, 93, 113113	3.4	32
327	Self-sustained autonomous wireless sensing based on a hybridized TENG and PEG vibration mechanism. *Nano Energy*, **2021**, 80, 105555	17.1	32

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