Hei Wong

List of Publications by Year
in descending order

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159	2,574	218677 26	233421 45
papers	citations	h-index	g-index

161	161	161	2225
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	On the scaling issues and high-Îº replacement of ultrathin gate dielectrics for nanoscale MOS transistors. Microelectronic Engineering, 2006, 83, 1867-1904.	2.4	325
2	Low-frequency noise study in electron devices: review and update. Microelectronics Reliability, 2003, 43, 585-599.	1.7	93
3	Atomic and electronic structure of amorphous and crystalline hafnium oxide: X-ray photoelectron spectroscopy and density functional calculations. Journal of Applied Physics, 2007, 101, 053704.	2.5	84
4	Excess silicon at the silicon nitride/thermal oxide interface in oxideâ€"nitrideâ€"oxide structures. Journal of Applied Physics, 1999, 86, 3234-3240.	2.5	83
5	Study of the electronic trap distribution at the SiO/sub 2/-Si interface utilizing the low-frequency noise measurement. IEEE Transactions on Electron Devices, 1990, 37, 1743-1749.	3.0	81
6	Defects in silicon oxynitride gate dielectric films. Microelectronics Reliability, 2002, 42, 597-605.	1.7	81
7	XPS Study of the Thermal Instability of HfO[sub 2] Prepared by Hf Sputtering in Oxygen with RTA. Journal of the Electrochemical Society, 2003, 150, F200.	2.9	78
8	Short-range order in non-stoichiometric amorphous silicon oxynitride and silicon-rich nitride. Journal of Non-Crystalline Solids, 2002, 297, 96-101.	3.1	67
9	X-ray photoelectron spectroscopy study of high-k CeO2/La2O3 stacked dielectrics. AIP Advances, 2014, 4, .	1.3	67
10	Interface bonding structure of hafnium oxide prepared by direct sputtering of hafnium in oxygen. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2004, 22, 1094.	1.6	58
11	The road to miniaturization. Physics World, 2005, 18, 40-44.	0.0	57
12	Preparation of Thin Dielectric Film for Nonvolatile Memory by Thermal Oxidation of Si-Rich LPCVD Nitride. Journal of the Electrochemical Society, 2001, 148, G275.	2.9	51
13	Recent developments in silicon optoelectronic devices. Microelectronics Reliability, 2002, 42, 317-326.	1.7	51
14	Luminescence of intrinsic and extrinsic defects in hafnium oxide films. Physical Review B, 2007, 76, .	3.2	50
15	Silicon dots/clusters in silicon nitride: photoluminescence and electron spin resonance. Thin Solid Films, 1999, 353, 20-24.	1.8	49
16	A physically-based MOS transistor avalanche breakdown model. IEEE Transactions on Electron Devices, 1995, 42, 2197-2202.	3.0	44
17	On the scaling of subnanometer EOT gate dielectrics for ultimate nano CMOS technology. Microelectronic Engineering, 2015, 138, 57-76.	2.4	42
18	Trapping characteristics of lanthanum oxide gate dielectric film explored from temperature dependent currentâ€"voltage and capacitanceâ€"voltage measurements. Solid-State Electronics, 2007, 51, 475-480.	1.4	39

#	Article	IF	Citations
19	Material properties of interfacial silicate layer and its influence on the electrical characteristics of MOS devices using hafnia as the gate dielectric. Thin Solid Films, 2006, 504, 192-196.	1.8	33
20	Silicon integrated photonics begins to revolutionize. Microelectronics Reliability, 2007, 47, 1-10.	1.7	33
21	Silicon oxynitride prepared by chemical vapor deposition as optical waveguide materials. Journal of Crystal Growth, 2006, 288, 171-175.	1.5	31
22	XPS study on the effects of thermal annealing on CeO2/La2O3 stacked gate dielectrics. Thin Solid Films, 2016, 600, 30-35.	1.8	31
23	Excess silicon at the Si3N4/SiO2 interface. Applied Physics Letters, 1998, 72, 462-464.	3.3	30
24	Interface structure of ultrathin oxide prepared by N/sub 2/O oxidation. IEEE Transactions on Electron Devices, 2003, 50, 1941-1945.	3.0	30
25	Atomic and electronic structures of amorphous ZrO2 and HfO2 films. Microelectronic Engineering, 2005, 81, 524-529.	2.4	30
26	Analytical model of drain current of cylindrical surrounding gate p-n-i-n TFET. Solid-State Electronics, 2015, 111, 171-179.	1.4	30
27	Valence band offset at silicon/silicon nitride and silicon nitride/silicon oxide interfaces. Thin Solid Films, 2003, 437, 135-139.	1.8	29
28	Drain breakdown in submicron MOSFETs: a review. Microelectronics Reliability, 2000, 40, 3-15.	1.7	28
29	Bonding and band offset in N[sub 2]O-grown oxynitride. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 241.	1.6	27
30	The interfaces of lanthanum oxide-based subnanometer EOT gate dielectrics. Nanoscale Research Letters, 2014, 9, 472.	5.7	26
31	Study of Excess Silicon at Si3â€‰Nâ€‰4â€‰/â€‰Thermal SiO2 Interface Using EELS and Ellipsometric Measurements. Journal of the Electrochemical Society, 1999, 146, 780-785.	2.9	24
32	Oxynitride gate dielectric prepared by thermal oxidation of low-pressure chemical vapor deposition silicon-rich silicon nitride. Microelectronics Reliability, 2003, 43, 611-616.	1.7	24
33	Electrical characterization of the hafnium oxide prepared by direct sputtering of Hf in oxygen with rapid thermal annealing. Microelectronics Reliability, 2003, 43, 1289-1293.	1.7	24
34	CHALLENGES FOR FUTURE SEMICONDUCTOR MANUFACTURING. International Journal of High Speed Electronics and Systems, 2006, 16, 43-81.	0.7	24
35	Temperature dependences of threshold voltage and drain-induced barrier lowering in 60nm gate length MOS transistors. Microelectronics Reliability, 2014, 54, 1109-1114.	1.7	24
36	Dynamic Analysis of Two-Phase Switched-Capacitor DCâ€"DC Converters. IEEE Transactions on Power Electronics, 2014, 29, 302-317.	7.9	21

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37	Dielectric breakdown characteristics and interface trapping of hafnium oxide films. Microelectronics Journal, 2005, 36, 29-33.	2.0	20
38	Electrical characteristics of high-Îº dielectric film grown by direct sputtering method. Solid-State Electronics, 2006, 50, 237-240.	1.4	20
39	Modeling of the parasitic transistor-induced drain breakdown in MOSFETs. IEEE Transactions on Electron Devices, 1996, 43, 2190-2196.	3.0	19
40	Effects of aluminum doping on lanthanum oxide gate dielectric films. Vacuum, 2012, 86, 929-932.	3.5	19
41	Modeling and characterization of direct-tunneling current in dual-layer ultrathin-gate dielectric films. Journal of Vacuum Science & Technology B, 2006, 24, 1785.	1.3	18
42	Accurate Ellipsometric Measurement of Refractive Index and Thickness of Ultrathin Oxide Film. Journal of the Electrochemical Society, 2006, 153, F277.	2.9	18
43	Effects and mechanisms of nitrogen incorporation into hafnium oxide by plasma immersion implantation. Journal of Vacuum Science & Technology B, 2007, 25, 1853.	1.3	18
44	Current transport and high-field reliability of aluminum/hafnium oxide/silicon structure. Thin Solid Films, 2006, 504, 312-316.	1.8	17
45	Atomic and Electronic Structures of Traps in Silicon Oxide and Silicon Oxynitride. Critical Reviews in Solid State and Materials Sciences, 2011, 36, 129-147.	12.3	17
46	Electrically tunable film bulk acoustic resonator based on Au/ZnO/Al structure. Applied Physics Letters, 2013, 103, .	3.3	16
47	High-k Gate Dielectrics. Electrochemical Society Interface, 2005, 14, 30-34.	0.4	16
48	Onefold coordinated oxygen atom: an electron trap in the silicon oxide. Microelectronics Reliability, 2003, 43, 665-669.	1.7	15
49	Quasi-analytical model of ballistic cylindrical surrounding gate nanowire MOSFET. Microelectronic Engineering, 2015, 138, 111-117.	2.4	15
50	Review on peculiar issues of field emission in vacuum nanoelectronic devices. Solid-State Electronics, 2017, 138, 3-15.	1.4	14
51	Current conduction and stability of CeO2/La2O3 stacked gate dielectric. Applied Physics Letters, 2012, 101, 233507.	3.3	13
52	Modeling of a EEPROM device based on silicon quantum dots embedded in high-k dielectrics. Microelectronic Engineering, 2005, 81, 530-534.	2.4	12
53	Bonding Structure of Silicon Oxynitride Grown by Plasma-Enhanced Chemical Vapor Deposition. Japanese Journal of Applied Physics, 2007, 46, 3202-3205.	1.5	12
54	Effects of aluminum incorporation on hafnium oxide film using plasma immersion ion implantation. Microelectronics Reliability, 2008, 48, 1765-1768.	1.7	12

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55	An overview of charge pumping circuits for flash memory applications. , 2011, , .		12
56	The variation of the leakage current characteristics of W/Ta2O5/W MIM capacitors with the thickness of the bottom W electrode. Microelectronics Reliability, 2016, 61, 95-98.	1.7	12
57	Short-range order and luminescence in amorphous silicon oxynitride. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2000, 80, 1857-1868.	0.6	11
58	Nitrogen Incorporation into Hafnium Oxide Films by Plasma Immersion Ion Implantation. Japanese Journal of Applied Physics, 2007, 46, 3234-3238.	1.5	11
59	Off-state drain breakdown mechanisms of VDMOS with anti-JFET implantation. Microelectronics Reliability, 2011, 51, 2064-2068.	1.7	11
60	On the design of power- and area-efficient Dickson charge pump circuits. Analog Integrated Circuits and Signal Processing, 2014, 78, 373-389.	1.4	11
61	Thermal annealing, interface reaction, and lanthanum-based sub-nanometer EOT gate dielectrics. Vacuum, 2015, 118, 2-7.	3.5	11
62	Substrate current, gate current and lifetime prediction of deep-submicron nMOS devices. Solid-State Electronics, 2005, 49, 505-511.	1.4	10
63	Single band electronic conduction in hafnium oxide prepared by atomic layer deposition. Microelectronics Reliability, 2007, 47, 36-40.	1.7	10
64	Subthreshold Characteristics of MOS Transistors With $ hbox{CeO}_{2}/hbox{La}_{2}hbox{O}_{3}$ Stacked Gate Dielectric. IEEE Electron Device Letters, 2011, 32, 1002-1004.	3.9	10
65	Electronic structures of silicon nitride revealed by tight binding calculations. Journal of Non-Crystalline Solids, 2008, 354, 1531-1536.	3.1	9
66	Subthreshold parameters of radio-frequency multi-finger nanometer MOS transistors. Microelectronics Reliability, 2009, 49, 387-391.	1.7	9
67	On the Vertically Stacked Gate-All-Around Nanosheet and Nanowire Transistor Scaling beyond the 5 nm Technology Node. Nanomaterials, 2022, 12, 1739.	4.1	9
68	A novel approach for fabricating light-emitting porous polysilicon films. Microelectronics Reliability, 2002, 42, 929-933.	1.7	8
69	Photoluminescence of Silicon Nanocrystals Embedded in Silicon Oxide. Journal of Nanoscience and Nanotechnology, 2009, 9, 1272-1276.	0.9	8
70	Transient Sensitivity of Sectorial Split-Drain Magnetic Field-Effect Transistor. IEEE Transactions on Magnetics, 2013, 49, 4048-4051.	2.1	8
71	Parasitic capacitance effect on the performance of twoâ€phase switchedâ€capacitor DCâ€“DC converters. IET Power Electronics, 2015, 8, 1195-1208.	2.1	8
72	High-efficiency light-emitting device based on silicon nanostructures and tunneling carrier injection. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2005, 23, 2449.	1.6	7

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73	High-Performance Resistorless Sub-1V Bandgap Reference Circuit Based on Piecewise Compensation Technique. , 2007, , .		7
74	Design strategy for 2-phase switched capacitor charge pump. , 2008, , .		7
75	Generating sub-1V reference voltages from a resistorless CMOS bandgap reference circuit by using a piecewise curvature temperature compensation technique. Microelectronics Reliability, 2010, 50, 1054-1061.	1.7	7
76	An LED driver with thermal control function. , 2014, , .		7
77	AFM study on the surface morphologies of TiN films prepared by magnetron sputtering and Al 2 O 3 films prepared by atomic layer deposition. Vacuum, 2018, 153, 139-144.	3.5	7
78	Quantum charge transportation in metal-oxide-Si structures with ultrathin oxide. Journal of Vacuum Science & Technology B, 2006, 24, 38.	1.3	6
79	A dynamicâ€biasing 4Ã— charge pump based on exponential topology. International Journal of Circuit Theory and Applications, 2015, 43, 401-414.	2.0	6
80	A high-efficiency full-wave CMOS rectifying charge pump for RF energy harvesting applications. Microelectronics Journal, 2015, 46, 1447-1452.	2.0	6
81	Electroluminescence of silicon nanoclusters excited by tunneling carrier injection. Journal of Vacuum Science & Technology B, 2008, 26, 813-820.	1.3	5
82	Design strategy for two-phase switched capacitor step-up charge pump. , 2009, , .		5
83	Wigner crystallization due to electrons localized at deep traps in two-dimensional amorphous dielectric. Applied Physics Letters, 2010, 96, 263510.	3.3	5
84	Thermal and voltage instabilities of hafnium oxide films prepared by sputtering technique. Microelectronics Reliability, 2013, 53, 1863-1867.	1.7	5
85	Split-Drain Magnetic Field-Effect Transistor Channel Charge Trapping and Stress Induced Sensitivity Deterioration. IEEE Transactions on Magnetics, 2014, 50, 1-4.	2.1	5
86	Snapback breakdown ESD device based on zener diodes on silicon-on-insulator technology. Microelectronics Reliability, 2014, 54, 1163-1168.	1.7	5
87	Effects of thermal annealing on the charge localization characteristics of HfO2/Au/HfO2 stack. Microelectronics Reliability, 2016, 61, 78-81.	1.7	5
88	Geometry and temperature effects on the threshold voltage characteristics of silicon nanowire MOS transistors. Solid-State Electronics, 2017, 138, 35-39.	1.4	5
89	High-Speed Discrete Gaussian Sampler With Heterodyne Chaotic Laser Inputs. IEEE Transactions on Circuits and Systems II: Express Briefs, 2018, 65, 794-798.	3.0	5
90	Characteristic Variabilities of Subnanometer EOT La2O3 Gate Dielectric Film of Nano CMOS Devices. Nanomaterials, 2021, 11, 2118.	4.1	5

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91	Effects of silicon surface defects on the graphene/silicon Schottky characteristics. Results in Physics, 2021, 29, 104744.	4.1	5
92	Piece-wise linear approximation of MOS nonlinear junction capacitance in high-frequency class E amplifier design. , 0, , .		4
93	Topology, analysis, and CMOS implementation of switched-capacitor DC-DC converters. Facta Universitatis - Series Electronics and Energetics, 2014, 27, 41-56.	0.9	4
94	Optimal design of high output power class E amplifier. , 0, , .		3
95	Silicon integrated photonics: potentials and promises. , 0, , .		3
96	Nanoscale MOS devices: device parameter fluctuations and low-frequency noise (Invited Paper). , 2005, , .		3
97	The Current Conduction Issues in High-k Gate Dielectrics. , 2007, , .		3
98	Effects of nitrogen incorporation into lanthana film by plasma immersion ion implantation. Solid-State Electronics, 2009, 53, 355-358.	1.4	3
99	A novel gate boosting circuit for 2-phase high voltage CMOS charge pump. , 2009, , .		3
100	Double edge-triggered half-static clock-gated D-type flip-flop. , 2010, , .		3
101	Advances in non-volatile memory technology. Microelectronics Reliability, 2012, 52, 611-612.	1.7	3
102	Modelling of maximum power efficiency of charge pump circuits. Electronics Letters, 2014, 50, 1233-1234.	1.0	3
103	Lanthana and its interface with silicon. , 2014, , .		3
104	Comparative study of resonant and sequential features in electron field emission from composite surfaces. Thin Solid Films, 2016, 608, 26-33.	1.8	3
105	Effects of thermal annealing on the interface between tungsten and CeO 2 /La 2 O 3 stack gate dielectrics. Vacuum, 2017, 140, 7-13.	3.5	3
106	Analytical modeling on the drain current characteristics of gate-all-around TFET with the incorporation of short-channel effects. Solid-State Electronics, 2017, 138, 24-29.	1.4	3
107	Recent developments in silicon optoelectronic devices. , 0, , .		2
108	Dielectric breakdown characteristics and interface trapping of hafnium oxide films. , 0, , .		2

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109	On the Reliability Issues of RF CMOS Devices. , 2006, , .		2
110	Analysis of ESD discharge current distribution and area optimization of VDMOS gate protection structure. Microelectronics Reliability, 2010, 50, 622-626.	1.7	2
111	AN ENERGY EFFICIENT HALF-STATIC CLOCK-GATING D-TYPE FLIP-FLOP. Journal of Circuits, Systems and Computers, 2010, 19, 635-654.	1.5	2
112	Thermal stability of sectorial split-drain magnetic field-effect transistors. Microelectronics Reliability, 2014, 54, 1115-1118.	1.7	2
113	Low-voltage CMOS DC-DC converters for energy harvesting applications. , 2015, , .		2
114	Sensitivity distortion of split-drain MAGFET under alternating magnetic field. , 2015, , .		2
115	Tunneling-based charge percolation transport in a random network of semi-conductive nanoclusters embedded in a dielectric matrix. Thin Solid Films, 2015, 574, 84-92.	1.8	2
116	A low power CMOS magnetic field sensor consisting of a MAGFET and a pulse width modulated readout circuit. , 2017, , .		2
117	Compact Modeling and Short-Channel Effects of Nanowire MOS Transistors (Invited). , 2018, , .		2
118	Temperature dependent characteristics of graphene/silicon Schottky junction. International Journal of Nanotechnology, 2020, 17, 4.	0.2	2
119	A new approach to characterize and predict lifetime of deep-submicron nMOS devices. , 0, , .		1
120	Modeling of Low-Frequency Noise in Junction Field-Effect Transistor with Self-Aligned Planer Technology. , 0, , .		1
121	Effects of Ambient Temperature on the Electrical Characteristics of Thin La>inf<2>/inf<O>inf<3>/inf<Film Grown by E-Beam Evaporation. , 0, , .		1
122	Material and interface instabilities of high-κ MOS gate dielectric films. , 2006, , .		1
123	Definition of curve fitting parameter to study tunneling and trapping of electrons in Si/ultra-thin SiO2/metal structures. Microelectronics Reliability, 2006, 46, 1027-1034.	1.7	1
124	Silicon Integrated Photonics for Microelectronics Evolution. , 0, , .		1
125	Properties of high-dielectric constant complex materials based on transition and rare-earth metal oxides. , 2008, , .		1
126	A Wideband three-stage rail-to-rail power amplifier driving large capacitive load. , 2008, , .		1

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127	Background analysis of field-induced electron emission from nanometer-scale heterostructured emitters. Journal of Vacuum Science & Technology B, 2009, 27, 711-718.	1.3	1
128	Area efficient 2ⁿ× switched capacitor charge pump. , 2009, , .		1
129	Probability Current and Antiresonances of Particle Tunneling Through Biased Heterostructures. Journal of Nanoscience and Nanotechnology, 2009, 9, 1237-1241.	0.9	1
130	A low-voltage charge pump with wide current driving capability. , 2010, , .		1
131	Modeling of terminal ring structures for high-voltage power MOSFETs. Microelectronics Reliability, 2012, 52, 1645-1650.	1.7	1
132	Effects of High-Temperature Treatment on the Reaction Between Sn-3%Ag-0.5%Cu Solder and Sputtered Ni-V Film on Ferrite Substrate. Journal of Electronic Materials, 2012, 41, 3145-3151.	2.2	1
133	Analytical Model of Subthreshold Drain Current Characteristics of Ballistic Silicon Nanowire Transistors. Advances in Condensed Matter Physics, 2015, 2015, 1-8.	1.1	1
134	Abnormal off-state current in multiple silicon nanowire MOS transistors. , 2015, , .		1
135	Analysis and design of CMOS full-wave rectifying charge pump for RF energy harvesting applications. , 2015, , .		1
136	On the scaling of lanthanum oxide gate dielectric film into the subnanometer EOT range. , 2016, , .		1
137	On the Issues of Subnanometer EOT Gate Dielectric Scaling. , 2019, , .		1
138	Effects of non-fatal electrostatic discharge on the threshold voltage degradation in nano CMOS devices. Science China Information Sciences, 2022, 65, 1.	4.3	1
139	Formation mechanism of light-emitting porous silicon prepared by reactive ions etching. , 0, , .		0
140	Photoluminescence of porous silicon and porous polysilicon films. , 0, , .		0
141	Charge trapping and stress-induced dielectric breakdown characteristics of HfO/sub 2/ films. , 0, , .		0
142	Thermal stability and electronic structure of hafnium and zirconium oxide films for nanoscale MOS device applications. , 0, , .		0
143	A NEW APPROACH TO CHARACTERIZE AND PREDICT LIFETIME OF DEEP-SUBMICRON NMOS DEVICES. International Journal of High Speed Electronics and Systems, 2006, 16, 315-323.	0.7	0
144	Aluminium Incorporation in Lanthanum Oxide Films by using Plasma Immersion Ion Implantation. , 2007, , .		0

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145	Design and analysis of 600 V power MOSFET with multiple field limiting ring. , 2008, , .		0
146	Current mode track and hold circuit with 50MS/sec speed and 8-bit resolution. , 2008, , .		0
147	A low power temperature insensitive voltage supervisory circuit in metal gate technology. , 2009, , .		0
148	Quantum tunneling based percolating transport of electric charges in a network of conductive nanoclusters embedded in a dielectric matrix. , 2013, , .		0
149	A regulated charge pump with wide current driving capability for low-voltage applications. , 2014, , .		0
150	Observation of Substrate Silicon Incorporation into Thin Lanthanum Oxide Film during Rapid Thermal Annealing. Advanced Materials Research, 0, 1120-1121, 414-418.	0.3	0
151	On the compact modeling of double gate p-n-i-n tunneling field-effect transistors. , 2015, , .		0
152	Optimization of loss tangent and capacitor area of micro vacuum dielectric capacitors. , 2015, , .		0
153	XPS study on the effects of thermal annealing on CeO2/La2O3 stacked gate dielectrics. , 2015, , .		0
154	A study on split-drain MAGFET channel boundary charge trapping based on numerical simulation. , 2017, , .		0
155	On the RF energy harvesting based on CMOS technology. , 2018, , .		0
156	Compact modeling of sectorial split-drain magnetic field-effect transistors. Vacuum, 2019, 167, 68-72.	3.5	0
157	CMOS low power split-drain MAGFET based magnetic field strength sensor. Microelectronics Journal, 2020, 100, 104759.	2.0	0
158	A system-on-chip 1.5 GHz phase locked loop realized using 40 nm CMOS technology. Facta Universitatis - Series Electronics and Energetics, 2018, 31, 101-113.	0.9	0
159	High-K Gate Dielectrics. , 2019, , 105-140.		0