Hei Wong

List of Publications by Year
in descending order

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

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

#	Article	IF	Citations
1	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
2	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
3	Characteristic Variabilities of Subnanometer EOT La2O3 Gate Dielectric Film of Nano CMOS Devices. Nanomaterials, 2021, 11, 2118.	4.1	5
4	Effects of silicon surface defects on the graphene/silicon Schottky characteristics. Results in Physics, 2021, 29, 104744.	4.1	5
5	Temperature dependent characteristics of graphene/silicon Schottky junction. International Journal of Nanotechnology, 2020, 17, 4.	0.2	2
6	CMOS low power split-drain MAGFET based magnetic field strength sensor. Microelectronics Journal, 2020, 100, 104759.	2.0	0
7	Compact modeling of sectorial split-drain magnetic field-effect transistors. Vacuum, 2019, 167, 68-72.	3.5	0
8	On the Issues of Subnanometer EOT Gate Dielectric Scaling. , 2019, , .		1
9	High-K Gate Dielectrics. , 2019, , 105-140.		0
10	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
11	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
12	Compact Modeling and Short-Channel Effects of Nanowire MOS Transistors (Invited). , 2018, , .		2
13	On the RF energy harvesting based on CMOS technology. , 2018, , .		0
14	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
15	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
16	Review on peculiar issues of field emission in vacuum nanoelectronic devices. Solid-State Electronics, 2017, 138, 3-15.	1.4	14
17	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
18	Geometry and temperature effects on the threshold voltage characteristics of silicon nanowire MOS transistors. Solid-State Electronics, 2017, 138, 35-39.	1.4	5

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19	A study on split-drain MAGFET channel boundary charge trapping based on numerical simulation. , 2017, , .		0
20	A low power CMOS magnetic field sensor consisting of a MAGFET and a pulse width modulated readout circuit. , 2017, , .		2
21	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
22	On the scaling of lanthanum oxide gate dielectric film into the subnanometer EOT range. , 2016, , .		1
23	Comparative study of resonant and sequential features in electron field emission from composite surfaces. Thin Solid Films, 2016, 608, 26-33.	1.8	3
24	Effects of thermal annealing on the charge localization characteristics of HfO2/Au/HfO2 stack. Microelectronics Reliability, 2016, 61, 78-81.	1.7	5
25	XPS study on the effects of thermal annealing on CeO2/La2O3 stacked gate dielectrics. Thin Solid Films, 2016, 600, 30-35.	1.8	31
26	Low-voltage CMOS DC-DC converters for energy harvesting applications. , 2015, , .		2
27	A dynamicâ€biasing 4Ã— charge pump based on exponential topology. International Journal of Circuit Theory and Applications, 2015, 43, 401-414.	2.0	6
28	Analytical Model of Subthreshold Drain Current Characteristics of Ballistic Silicon Nanowire Transistors. Advances in Condensed Matter Physics, 2015, 2015, 1-8.	1.1	1
29	On the scaling of subnanometer EOT gate dielectrics for ultimate nano CMOS technology. Microelectronic Engineering, 2015, 138, 57-76.	2.4	42
30	Sensitivity distortion of split-drain MAGFET under alternating magnetic field. , 2015, , .		2
31	On the compact modeling of double gate p-n-i-n tunneling field-effect transistors. , 2015, , .		0
32	A high-efficiency full-wave CMOS rectifying charge pump for RF energy harvesting applications. Microelectronics Journal, 2015, 46, 1447-1452.	2.0	6
33	Abnormal off-state current in multiple silicon nanowire MOS transistors. , 2015, , .		1
34	Optimization of loss tangent and capacitor area of micro vacuum dielectric capacitors. , 2015, , .		0
35	XPS study on the effects of thermal annealing on CeO2/La2O3 stacked gate dielectrics. , 2015, , .		0
36	Analysis and design of CMOS full-wave rectifying charge pump for RF energy harvesting applications. , 2015, , .		1

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37	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
38	Thermal annealing, interface reaction, and lanthanum-based sub-nanometer EOT gate dielectrics. Vacuum, 2015, 118, 2-7.	3.5	11
39	Parasitic capacitance effect on the performance of twoâ€phase switchedâ€capacitor DCâ€“DC converters. IET Power Electronics, 2015, 8, 1195-1208.	2.1	8
40	Analytical model of drain current of cylindrical surrounding gate p-n-i-n TFET. Solid-State Electronics, 2015, 111, 171-179.	1.4	30
41	Quasi-analytical model of ballistic cylindrical surrounding gate nanowire MOSFET. Microelectronic Engineering, 2015, 138, 111-117.	2.4	15
42	The interfaces of lanthanum oxide-based subnanometer EOT gate dielectrics. Nanoscale Research Letters, 2014, 9, 472.	5.7	26
43	An LED driver with thermal control function. , 2014, , .		7
44	Modelling of maximum power efficiency of charge pump circuits. Electronics Letters, 2014, 50, 1233-1234.	1.0	3
45	A regulated charge pump with wide current driving capability for low-voltage applications. , 2014, , .		0
46	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
47	Dynamic Analysis of Two-Phase Switched-Capacitor DCâ€“DC Converters. IEEE Transactions on Power Electronics, 2014, 29, 302-317.	7.9	21
48	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
49	Lanthana and its interface with silicon. , 2014, , .		3
50	Thermal stability of sectorial split-drain magnetic field-effect transistors. Microelectronics Reliability, 2014, 54, 1115-1118.	1.7	2
51	Snapback breakdown ESD device based on zener diodes on silicon-on-insulator technology. Microelectronics Reliability, 2014, 54, 1163-1168.	1.7	5
52	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
53	X-ray photoelectron spectroscopy study of high-k CeO2/La2O3 stacked dielectrics. AIP Advances, 2014, 4, .	1.3	67
54	Topology, analysis, and CMOS implementation of switched-capacitor DC-DC converters. Facta Universitatis - Series Electronics and Energetics, 2014, 27, 41-56.	0.9	4

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55	Transient Sensitivity of Sectorial Split-Drain Magnetic Field-Effect Transistor. IEEE Transactions on Magnetics, 2013, 49, 4048-4051.	2.1	8
56	Quantum tunneling based percolating transport of electric charges in a network of conductive nanoclusters embedded in a dielectric matrix. , 2013, , .		0
57	Thermal and voltage instabilities of hafnium oxide films prepared by sputtering technique. Microelectronics Reliability, 2013, 53, 1863-1867.	1.7	5
58	Electrically tunable film bulk acoustic resonator based on Au/ZnO/Al structure. Applied Physics Letters, 2013, 103, .	3.3	16
59	Current conduction and stability of CeO2/La2O3 stacked gate dielectric. Applied Physics Letters, 2012, 101, 233507.	3.3	13
60	Modeling of terminal ring structures for high-voltage power MOSFETs. Microelectronics Reliability, 2012, 52, 1645-1650.	1.7	1
61	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
62	Advances in non-volatile memory technology. Microelectronics Reliability, 2012, 52, 611-612.	1.7	3
63	Effects of aluminum doping on lanthanum oxide gate dielectric films. Vacuum, 2012, 86, 929-932.	3.5	19
64	An overview of charge pumping circuits for flash memory applications. , 2011, , .		12
65	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
66	Off-state drain breakdown mechanisms of VDMOS with anti-JFET implantation. Microelectronics Reliability, 2011, 51, 2064-2068.	1.7	11
67	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
68	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
69	Analysis of ESD discharge current distribution and area optimization of VDMOS gate protection structure. Microelectronics Reliability, 2010, 50, 622-626.	1.7	2
70	AN ENERGY EFFICIENT HALF-STATIC CLOCK-GATING D-TYPE FLIP-FLOP. Journal of Circuits, Systems and Computers, 2010, 19, 635-654.	1.5	2
71	Double edge-triggered half-static clock-gated D-type flip-flop. , 2010, , .		3
72	Wigner crystallization due to electrons localized at deep traps in two-dimensional amorphous dielectric. Applied Physics Letters, 2010, 96, 263510.	3.3	5

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73	A low-voltage charge pump with wide current driving capability. , 2010, , .		1
74	A low power temperature insensitive voltage supervisory circuit in metal gate technology. , 2009, , .		0
75	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
76	Effects of nitrogen incorporation into lanthana film by plasma immersion ion implantation. Solid-State Electronics, 2009, 53, 355-358.	1.4	3
77	Subthreshold parameters of radio-frequency multi-finger nanometer MOS transistors. Microelectronics Reliability, 2009, 49, 387-391.	1.7	9
78	Area efficient 2ⁿ× switched capacitor charge pump. , 2009, , .		1
79	Design strategy for two-phase switched capacitor step-up charge pump. , 2009, , .		5
80	A novel gate boosting circuit for 2-phase high voltage CMOS charge pump. , 2009, , .		3
81	Photoluminescence of Silicon Nanocrystals Embedded in Silicon Oxide. Journal of Nanoscience and Nanotechnology, 2009, 9, 1272-1276.	0.9	8
82	Probability Current and Antiresonances of Particle Tunneling Through Biased Heterostructures. Journal of Nanoscience and Nanotechnology, 2009, 9, 1237-1241.	0.9	1
83	Effects of aluminum incorporation on hafnium oxide film using plasma immersion ion implantation. Microelectronics Reliability, 2008, 48, 1765-1768.	1.7	12
84	Design strategy for 2-phase switched capacitor charge pump. , 2008, , .		7
85	Electronic structures of silicon nitride revealed by tight binding calculations. Journal of Non-Crystalline Solids, 2008, 354, 1531-1536.	3.1	9
86	Design and analysis of 600 V power MOSFET with multiple field limiting ring. , 2008, , .		0
87	Properties of high-dielectric constant complex materials based on transition and rare-earth metal oxides. , 2008, , .		1
88	Electroluminescence of silicon nanoclusters excited by tunneling carrier injection. Journal of Vacuum Science & Technology B, 2008, 26, 813-820.	1.3	5
89	Current mode track and hold circuit with 50MS/sec speed and 8-bit resolution. , 2008, , .		0
90	A Wideband three-stage rail-to-rail power amplifier driving large capacitive load. , 2008, , .		1

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91	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
92	Luminescence of intrinsic and extrinsic defects in hafnium oxide films. Physical Review B, 2007, 76, .	3.2	50
93	Aluminium Incorporation in Lanthanum Oxide Films by using Plasma Immersion Ion Implantation. , 2007, , .		0
94	High-Performance Resistorless Sub-1V Bandgap Reference Circuit Based on Piecewise Compensation Technique. , 2007, , .		7
95	The Current Conduction Issues in High-k Gate Dielectrics. , 2007, , .		3
96	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
97	Nitrogen Incorporation into Hafnium Oxide Films by Plasma Immersion Ion Implantation. Japanese Journal of Applied Physics, 2007, 46, 3234-3238.	1.5	11
98	Bonding Structure of Silicon Oxynitride Grown by Plasma-Enhanced Chemical Vapor Deposition. Japanese Journal of Applied Physics, 2007, 46, 3202-3205.	1.5	12
99	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
100	Silicon integrated photonics begins to revolutionize. Microelectronics Reliability, 2007, 47, 1-10.	1.7	33
101	Single band electronic conduction in hafnium oxide prepared by atomic layer deposition. Microelectronics Reliability, 2007, 47, 36-40.	1.7	10
102	Material and interface instabilities of high-κ MOS gate dielectric films. , 2006, , .		1
103	Silicon oxynitride prepared by chemical vapor deposition as optical waveguide materials. Journal of Crystal Growth, 2006, 288, 171-175.	1.5	31
104	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
105	Electrical characteristics of high-Îº dielectric film grown by direct sputtering method. Solid-State Electronics, 2006, 50, 237-240.	1.4	20
106	Current transport and high-field reliability of aluminum/hafnium oxide/silicon structure. Thin Solid Films, 2006, 504, 312-316.	1.8	17
107	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
108	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

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109	Quantum charge transportation in metal-oxide-Si structures with ultrathin oxide. Journal of Vacuum Science & Technology B, 2006, 24, 38.	1.3	6
110	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
111	CHALLENGES FOR FUTURE SEMICONDUCTOR MANUFACTURING. International Journal of High Speed Electronics and Systems, 2006, 16, 43-81.	0.7	24
112	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
113	Accurate Ellipsometric Measurement of Refractive Index and Thickness of Ultrathin Oxide Film. Journal of the Electrochemical Society, 2006, 153, F277.	2.9	18
114	On the Reliability Issues of RF CMOS Devices. , 2006, , .		2
115	Nanoscale MOS devices: device parameter fluctuations and low-frequency noise (Invited Paper). , 2005, , .		3
116	The road to miniaturization. Physics World, 2005, 18, 40-44.	0.0	57
117	Atomic and electronic structures of amorphous ZrO2 and HfO2 films. Microelectronic Engineering, 2005, 81, 524-529.	2.4	30
118	Dielectric breakdown characteristics and interface trapping of hafnium oxide films. Microelectronics Journal, 2005, 36, 29-33.	2.0	20
119	Substrate current, gate current and lifetime prediction of deep-submicron nMOS devices. Solid-State Electronics, 2005, 49, 505-511.	1.4	10
120	Modeling of a EEPROM device based on silicon quantum dots embedded in high-k dielectrics. Microelectronic Engineering, 2005, 81, 530-534.	2.4	12
121	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
122	High-k Gate Dielectrics. Electrochemical Society Interface, 2005, 14, 30-34.	0.4	16
123	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
124	Interface structure of ultrathin oxide prepared by N/sub 2/O oxidation. IEEE Transactions on Electron Devices, 2003, 50, 1941-1945.	3.0	30
125	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
126	Low-frequency noise study in electron devices: review and update. Microelectronics Reliability, 2003, 43, 585-599.	1.7	93

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127	Onefold coordinated oxygen atom: an electron trap in the silicon oxide. Microelectronics Reliability, 2003, 43, 665-669.	1.7	15
128	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
129	Valence band offset at silicon/silicon nitride and silicon nitride/silicon oxide interfaces. Thin Solid Films, 2003, 437, 135-139.	1.8	29
130	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
131	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
132	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
133	Defects in silicon oxynitride gate dielectric films. Microelectronics Reliability, 2002, 42, 597-605.	1.7	81
134	Recent developments in silicon optoelectronic devices. Microelectronics Reliability, 2002, 42, 317-326.	1.7	51
135	A novel approach for fabricating light-emitting porous polysilicon films. Microelectronics Reliability, 2002, 42, 929-933.	1.7	8
136	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
137	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
138	Drain breakdown in submicron MOSFETs: a review. Microelectronics Reliability, 2000, 40, 3-15.	1.7	28
139	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
140	Silicon dots/clusters in silicon nitride: photoluminescence and electron spin resonance. Thin Solid Films, 1999, 353, 20-24.	1.8	49
141	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
142	Excess silicon at the Si3N4/SiO2 interface. Applied Physics Letters, 1998, 72, 462-464.	3.3	30
143	Modeling of the parasitic transistor-induced drain breakdown in MOSFETs. IEEE Transactions on Electron Devices, 1996, 43, 2190-2196.	3.0	19
144	A physically-based MOS transistor avalanche breakdown model. IEEE Transactions on Electron Devices, 1995, 42, 2197-2202.	3.0	44

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145	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
146	Formation mechanism of light-emitting porous silicon prepared by reactive ions etching. , 0, , .		0
147	Recent developments in silicon optoelectronic devices. , 0, , .		2
148	Optimal design of high output power class E amplifier. , 0, , .		3
149	Photoluminescence of porous silicon and porous polysilicon films. , 0, , .		0
150	Silicon integrated photonics: potentials and promises. , 0, , .		3
151	Charge trapping and stress-induced dielectric breakdown characteristics of HfO/sub 2/ films. , 0, , .		0
152	Piece-wise linear approximation of MOS nonlinear junction capacitance in high-frequency class E amplifier design. , 0, , .		4
153	Dielectric breakdown characteristics and interface trapping of hafnium oxide films. , 0, , .		2
154	A new approach to characterize and predict lifetime of deep-submicron nMOS devices. , 0, , .		1
155	Thermal stability and electronic structure of hafnium and zirconium oxide films for nanoscale MOS device applications. , 0, , .		0
156	Modeling of Low-Frequency Noise in Junction Field-Effect Transistor with Self-Aligned Planer Technology. , 0, , .		1
157	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
158	Silicon Integrated Photonics for Microelectronics Evolution. , 0, , .		1
159	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