

Amador Perez-Tomas

List of Publications by Year in descending order

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#	ARTICLE	IF	CITATIONS
1	Ga ₂ O ₃ and Related Ultra-Wide Bandgap Power Semiconductor Oxides: New Energy Electronics Solutions for CO ₂ Emission Mitigation. <i>Materials</i> , 2022, 15, 1164.	1.3	24
2	Electrical properties of p-type Zn:Ga ₂ O ₃ thin films. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2022, 40, .	0.9	10
3	Origin of large negative electrocaloric effect in antiferroelectric PbZrO_3 . <i>Physical Review B</i> , 2021, 103, .	1.1	34
4	A study on free-standing 3C-SiC bipolar power diodes. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	3
5	Direct Visualization of Anti-Ferroelectric Switching Dynamics via Electrocaloric Imaging. <i>Advanced Electronic Materials</i> , 2021, 7, 2100380.	2.6	6
6	Status and Prospects of Cubic Silicon Carbide Power Electronics Device Technology. <i>Materials</i> , 2021, 14, 5831.	1.3	18
7	A First Evaluation of Thick Oxide 3C-SiC MOS Capacitors Reliability. <i>IEEE Transactions on Electron Devices</i> , 2020, 67, 237-242.	1.6	8
8	Ultra-high critical electric field of 13.2 MV/cm for Zn-doped p-type $\hat{\Gamma}^2$ -Ga ₂ O ₃ . <i>Materials Today Physics</i> , 2020, 15, 100263.	2.9	26
9	p-Type Ultrawide-Band-Gap Spinel ZnGa ₂ O ₄ : New Perspectives for Energy Electronics. <i>Crystal Growth and Design</i> , 2020, 20, 2535-2546.	1.4	68
10	Enhancing the intrinsic p-type conductivity of the ultra-wide bandgap Ga ₂ O ₃ semiconductor. <i>Journal of Materials Chemistry C</i> , 2019, 7, 10231-10239.	2.7	57
11	Functional Oxides for Photoneuromorphic Engineering: Toward a Solar Brain. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900471.	1.9	31
12	Giant bulk photovoltaic effect in solar cell architectures with ultra-wide bandgap Ga ₂ O ₃ transparent conducting electrodes. <i>Materials Today Energy</i> , 2019, 14, 100350.	2.5	17
13	PbZrTiO ₃ ferroelectric oxide as an electron extraction material for stable halide perovskite solar cells. <i>Sustainable Energy and Fuels</i> , 2019, 3, 382-389.	2.5	35
14	Puzzling robust 2D metallic conductivity in undoped $\hat{\Gamma}^2$ -Ga ₂ O ₃ thin films. <i>Materials Today Physics</i> , 2019, 8, 10-17.	2.9	24
15	A Solar Transistor and Photoferroelectric Memory. <i>Advanced Functional Materials</i> , 2018, 28, 1707099.	7.8	23
16	Metal Oxides in Photovoltaics: All-Oxide, Ferroic, and Perovskite Solar Cells. , 2018, , 267-356.		34
17	Stability of Molecular Devices: Halide Perovskite Solar Cells. <i>Green Chemistry and Sustainable Technology</i> , 2018, , 477-531.	0.4	1
18	Wide and ultra-wide bandgap oxides: where paradigm-shift photovoltaics meets transparent power electronics. , 2018, , .		6

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19	Heteroepitaxial Beta-Ga ₂ O ₃ on 4H-SiC for an FET With Reduced Self Heating. IEEE Journal of the Electron Devices Society, 2017, 5, 256-261.	1.2	55
20	Physical Characterisation of 3C-SiC(001)/SiO ₂ Interface Using XPS. Materials Science Forum, 2017, 897, 151-154.	0.3	3
21	Functional Oxide as an Extreme High-k Dielectric towards 4H-SiC MOSFET Incorporation. Materials Science Forum, 2017, 897, 155-158.	0.3	2
22	High-Temperature Electrical and Thermal Aging Performance and Application Considerations for SiC Power DMOSFETs. IEEE Transactions on Power Electronics, 2017, 32, 7967-7979.	5.4	26
23	P-type β -gallium oxide: A new perspective for power and optoelectronic devices. Materials Today Physics, 2017, 3, 118-126.	2.9	166
24	Above-Bandgap Photovoltages in Antiferroelectrics. Advanced Materials, 2016, 28, 9644-9647.	11.1	39
25	Performance and stability of mixed FAPbI ₃ (0.85)MAPbBr ₃ (0.15) halide perovskite solar cells under outdoor conditions and the effect of low light irradiation. Nano Energy, 2016, 30, 570-579.	8.2	110
26	3C-SiC Transistor With Ohmic Contacts Defined at Room Temperature. IEEE Electron Device Letters, 2016, 37, 1189-1192.	2.2	13
27	Nanoscale conductive pattern of the homoepitaxial AlGaIn/GaN transistor. Nanotechnology, 2015, 26, 115203.	1.3	14
28	Multiwavelength excitation Raman scattering analysis of bulk and two-dimensional MoS ₂ : vibrational properties of atomically thin MoS ₂ layers. 2D Materials, 2015, 2, 035006.	2.0	97
29	Electrical activation of nitrogen heavily implanted 3C-SiC(1 0 0). Applied Surface Science, 2015, 353, 958-963.	3.1	14
30	High-Temperature (1200-1400°C) Dry Oxidation of 3C-SiC on Silicon. Journal of Electronic Materials, 2015, 44, 4167-4174.	1.0	17
31	Improved Performance of 4H-SiC PiN Diodes Using a Novel Combined High Temperature Oxidation and Annealing Process. IEEE Transactions on Semiconductor Manufacturing, 2014, 27, 443-451.	1.4	12
32	Enhanced Forward Bias Operation of 4H-SiC PiN Diodes Using High Temperature Oxidation. Materials Research Society Symposia Proceedings, 2014, 1693, 193.	0.1	1
33	A Survey of Wide Bandgap Power Semiconductor Devices. IEEE Transactions on Power Electronics, 2014, 29, 2155-2163.	5.4	1,700
34	On the application of novel high temperature oxidation processes to enhance the performance of high voltage silicon carbide PiN diodes. , 2014, , .		0
35	Enhanced Field Effect Mobility on 4H-SiC by Oxidation at 1500°C. IEEE Journal of the Electron Devices Society, 2014, 2, 114-117.	1.2	24
36	Modeling the effect of thin gate insulators (SiO ₂ , SiN, Al ₂ O ₃ and HfO ₂) on AlGaIn/GaN HEMT forward characteristics grown on Si, sapphire and SiC. Materials Science in Semiconductor Processing, 2013, 16, 1336-1345.	1.9	23

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37	Modelling the metal-semiconductor band structure in implanted ohmic contacts to GaN and SiC. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 035004.	0.8	12
38	Molecular beam epitaxial AlGaIn/GaN high electron mobility transistors leakage thermal activation on silicon and sapphire. Applied Physics Letters, 2013, 102, .	1.5	4
39	Analysis of the AlGaIn/GaN vertical bulk current on Si, sapphire, and free-standing GaN substrates. Journal of Applied Physics, 2013, 113, .	1.1	57
40	Inhibiting the absorber/Mo-back contact decomposition reaction in Cu ₂ ZnSnSe ₄ solar cells: the role of a ZnO intermediate nanolayer. Journal of Materials Chemistry A, 2013, 1, 8338.	5.2	151
41	Modelling the inhomogeneous SiC Schottky interface. Journal of Applied Physics, 2013, 114, .	1.1	78
42	Innovative 3C-SiC on SiC via Direct Wafer Bonding. Materials Science Forum, 2013, 740-742, 271-274.	0.3	1
43	Gate traps inducing band-bending fluctuations on AlGaIn/GaN heterojunction transistors. Applied Physics Letters, 2013, 102, 023511.	1.5	15
44	Physical Modelling of 4H-SiC PiN Diodes. Materials Science Forum, 2012, 717-720, 993-996.	0.3	3
45	A study of temperature-related non-linearity at the metal-silicon interface. Journal of Applied Physics, 2012, 112, .	1.1	10
46	Temperature impact and analytical modeling of the AlGaIn/GaN-on-Si saturation drain current and transconductance. Semiconductor Science and Technology, 2012, 27, 125010.	1.0	18
47	Bow Free 4" Diameter 3C-SiC Epilayers Formed upon Wafer-Bonded Si/SiC Substrates. ECS Solid State Letters, 2012, 1, P85-P88.	1.4	5
48	Bulk Temperature Impact on the AlGaIn/GaN HEMT Forward Current on Si, Sapphire and Free-Standing GaN. ECS Solid State Letters, 2012, 2, P4-P7.	1.4	10
49	A HfO ₂ /AlGaIn based 800V/300A Au-free AlGaIn/GaN-on-Si HEMT technology. , 2012, , .		9
50	High voltage low Ron in-situ SiN/Al _{0.35} Ga _{0.65} /GaN-on-Si power HEMTs operation up to 300°C. , 2012, , .		0
51	Gate current analysis of AlGaIn/GaN on silicon heterojunction transistors at the nanoscale. Applied Physics Letters, 2012, 101, 093505.	1.5	18
52	Nanoscale investigation of AlGaIn/GaN-on-Si high electron mobility transistors. Nanotechnology, 2012, 23, 395204.	1.3	13
53	Reverse current thermal activation of AlGaIn/GaN HEMTs on Si(111). Microelectronics Reliability, 2012, 52, 2547-2550.	0.9	3
54	Wafer scale and reliability investigation of thin HfO ₂ /AlGaIn/GaN MIS-HEMTs. Microelectronics Reliability, 2012, 52, 2220-2223.	0.9	11

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55	Wide Band Gap Semiconductor Devices for Power Electronics. <i>Automatika</i> , 2012, 53, 107-116.	1.2	22
56	Micro and nano analysis of 0.2 μ m Ti/Al/Ni/Au ohmic contact to AlGaIn/GaN. <i>Applied Physics Letters</i> , 2011, 99, 213504.	1.5	47
57	GaN Ohmic contact resistance vs temperature. , 2011, , .		3
58	Temperature dependence of Al/Ti-based Ohmic contact to GaN devices: HEMT and MOSFET. <i>Microelectronic Engineering</i> , 2011, 88, 3140-3144.	1.1	24
59	AlGaIn/GaN hybrid MOS-HEMT analytical mobility model. <i>Solid-State Electronics</i> , 2011, 56, 201-206.	0.8	22
60	Temperature behavior and modeling of ohmic contacts to Si ⁺ implanted n-type GaN. <i>Microelectronics Reliability</i> , 2011, 51, 1325-1329.	0.9	7
61	Interfacial properties of AlN and oxidized AlN on Si. <i>Surface Science</i> , 2010, 604, 63-67.	0.8	11
62	Deposited Thin SiO ₂ for Gate Oxide on n-Type and p-Type GaN. <i>Journal of the Electrochemical Society</i> , 2010, 157, H1008.	1.3	20
63	Germanium δ -Silicon Carbide Heterojunction Diodes δ A Study in Device Characteristics with Increasing Layer Thickness and Deposition Temperature. <i>Materials Science Forum</i> , 2010, 645-648, 889-892.	0.3	0
64	Silicon-on-SiC, a Novel Semiconductor Structure for Power Devices. <i>Materials Science Forum</i> , 2010, 645-648, 1243-1246.	0.3	1
65	SiC on SOI Resonators: A Route for Electrically Driven MEMS in Harsh Environment. <i>Materials Science Forum</i> , 2010, 645-648, 845-848.	0.3	1
66	Integration of HfO ₂ on Si/SiC heterojunctions for the gate architecture of SiC power devices. <i>Applied Physics Letters</i> , 2010, 97, 013506.	1.5	8
67	Effects of Photons on 4H-SiC Rapid Thermal Oxidation Using Nitrous Oxide Gas. <i>Journal of the Electrochemical Society</i> , 2010, 157, G136.	1.3	19
68	3C-SiC films on insulated substrates for high-temperature electrostatic-based resonators. <i>Journal of Micromechanics and Microengineering</i> , 2010, 20, 115007.	1.5	5
69	Interface characteristics of n-n and p-n Ge/SiC heterojunction diodes formed by molecular beam epitaxy deposition. <i>Journal of Applied Physics</i> , 2010, 107, .	1.1	16
70	GaN transistor characteristics at elevated temperatures. <i>Journal of Applied Physics</i> , 2009, 106, .	1.1	67
71	GaN metal-oxide-semiconductor field-effect transistor inversion channel mobility modeling. <i>Journal of Applied Physics</i> , 2009, 105, .	1.1	40
72	Si/SiC bonded wafer: A route to carbon free SiO ₂ on SiC. <i>Applied Physics Letters</i> , 2009, 94, .	1.5	26

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73	Physical modelling of large area 4H-SiC PiN diodes. , 2009, , .		3
74	Low loss, large area 4.5 kV 4H-SiC PIN diodes with reduced forward voltage drift. Semiconductor Science and Technology, 2009, 24, 095004.	1.0	16
75	Investigation of Si/4H-SiC Hetero-Junction Growth and Electrical Properties. Materials Science Forum, 2009, 615-617, 443-446.	0.3	5
76	Effects of cap layer on ohmic Ti/Al contacts to Si+ implanted GaN. Applied Surface Science, 2009, 255, 6057-6060.	3.1	30
77	Recent progress in 3.3kV SiC diodes. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2009, 165, 15-17.	1.7	5
78	Characterization of 4H-SiC Junction Barrier Schottky Diodes by Admittance vs Temperature Analyses. Materials Science Forum, 2009, 615-617, 671-674.	0.3	0
79	Ohmic Contacts to implanted GaN. , 2009, , .		1
80	Analysis of inhomogeneous Ge/SiC heterojunction diodes. Journal of Applied Physics, 2009, 106, .	1.1	26
81	Interfacial properties of thermally oxidized Ta2Si on Si. Surface and Interface Analysis, 2008, 40, 1164-1167.	0.8	2
82	SiC MOSFETs with thermally oxidized Ta2Si stacked on SiO2 as high-k gate insulator. Microelectronic Engineering, 2008, 85, 704-709.	1.1	10
83	The effect of the temperature on the Bipolar Degradation of 3.3 kV 4H-SiC PiN diodes. , 2008, , .		9
84	Characterization of MOS interfaces on protected and un-protected 4H-SiC surfaces. , 2008, , .		1
85	Electrical performance at high temperature and surge current of 1.2 kV power rectifiers: Comparison between Si PiN, 4H-SiC Schottky and JBS diodes. , 2008, , .		7
86	Schottky versus bipolar 3.3 kV SiC diodes. Semiconductor Science and Technology, 2008, 23, 125004.	1.0	26
87	Si ⁺ -SiC Heterojunctions Fabricated by Direct Wafer Bonding. Electrochemical and Solid-State Letters, 2008, 11, H306.	2.2	31
88	Silicon carbide Schottky diodes and MOSFETs: Solutions to performance problems. , 2008, , .		9
89	Characterization of n-n Ge/SiC heterojunction diodes. Applied Physics Letters, 2008, 93, 112104.	1.5	9
90	Investigation on split-gate RSO MOSFET for 30 V breakdown. , 2008, , .		5

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91	Layered metal and highly doped MBE Si contacts for 4H-SiC power devices. , 2008, , .		0
92	Development of Low Resistance Al/Ti Stacked Metal Contacts to p-Type 4H-SiC. Materials Science Forum, 2007, 556-557, 697-700.	0.3	2
93	1.2 kV Rectifiers Thermal Behaviour: comparison between Si PiN, 4H-SiC Schottky and JBS diodes. , 2007, , .		10
94	SiC MOSFET Channel Mobility Dependence on Substrate Doping and Temperature Considering High Density of Interface Traps. Materials Science Forum, 2007, 556-557, 835-838.	0.3	6
95	Characterization and modeling of n-nâ€ˆSiâ€ˆSiC heterojunction diodes. Journal of Applied Physics, 2007, 102, .	1.1	58
96	Molecular beam epitaxy Si/4H-SiC heterojunction diodes. , 2007, , .		0
97	Analysis of Al/Ti, Al/Ni multiple and triple layer contacts to p-type 4H-SiC. Solid-State Electronics, 2007, 51, 797-801.	0.8	35
98	High doped MBE Si pâ€ˆn and nâ€ˆn heterojunction diodes on 4H-SiC. Microelectronics Journal, 2007, 38, 1233-1237.	1.1	26
99	Field-effect mobility temperature modeling of 4H-SiC metal-oxide-semiconductor transistors. Journal of Applied Physics, 2006, 100, 114508.	1.1	105
100	A field-effect electron mobility model for SiC MOSFETs including high density of traps at the interface. Microelectronic Engineering, 2006, 83, 440-445.	1.1	58
101	Ta 2 Si short time thermal oxidized layers in N 2 O and O 2 to form high- k gate dielectric on SiC. Applied Surface Science, 2006, 253, 1741-1744.	3.1	2
102	A study of the influence of the annealing processes and interfaces with deposited SiO2 from tetra-ethoxy-silane for reducing the thermal budget in the gate definition of 4Hâ€ˆSiC devices. Thin Solid Films, 2006, 513, 248-252.	0.8	12
103	Modelling of the Anomalous Field-Effect Mobility Peak of O-Ta<sub>2</sub>Si/4H-SiC High-k MOSFETs Measured in Strong Inversion. Materials Science Forum, 2006, 527-529, 1059-1062.	0.3	0
104	PECVD Deposited TEOS for Field-Effect Mobility Improvement in 4H-SiC MOSFETs on the (0001) and (11-20) Faces. Materials Science Forum, 2006, 527-529, 1047-1050.	0.3	5
105	Optimization of a very cost-effective high voltage p-channel transistor implemented in a standard twin-tub CMOS technology. Microelectronic Engineering, 2005, 77, 158-167.	1.1	0
106	A cost-effective high-voltage p-channel MOSFET implemented in a standard twin-tub technology: integrated IGBT gate driver. , 2005, , .		2
107	Planar Edge Termination Design and Technology Considerations for 1.7-kV 4H-SiC PiN Diodes. IEEE Transactions on Electron Devices, 2005, 52, 2309-2316.	1.6	77
108	4H-SiC MOS Structures Fabricated from RTCVD Si Layers Oxidized in Diluted N<sub>2</sub>O. Materials Science Forum, 2005, 483-485, 673-676.	0.3	2

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109	4H-SiC MOSFETs Using Thermal Oxidized Ta ₂ Si Films as High-k Gate Dielectric. Materials Science Forum, 2005, 483-485, 713-716.	0.3	3
110	Characterization of High-k Ta ₂ Si Oxidized Films on 4H-SiC and Si Substrates as Gate Insulator. Journal of the Electrochemical Society, 2005, 152, G259.	1.3	27
111	Ta ₂ Si Thermal Oxidation: A Simple Route to a High-k Gate Dielectric on 4H-SiC. Electrochemical and Solid-State Letters, 2004, 7, F93.	2.2	6
112	IGBT gate driver IC with full-bridge output stage using a modified standard CMOS process. Microelectronics Journal, 2004, 35, 659-666.	1.1	5
113	A study of the thermal oxidation of TaSi ₂ and Ta ₂ Si silicides to form dielectric layers for mis structures on 4H-SiC. , 0, , .		1
114	A study of the influence of N ₂ O and N ₂ annealing processes on 4H-SiC MOS structures with deposited TEOS SiO ₂ as gate oxide. , 0, , .		0
115	2DEG HEMT Mobility vs Inversion Channel MOSFET Mobility. Materials Science Forum, 0, 645-648, 1207-1210.	0.3	3
116	Characterisation of HfO ₂ /Si ₃ N ₄ /Si ₃ N ₄ /Si ₃ N ₄ MOS Capacitors. Materials Science Forum, 0, 679-680, 674-677.	0.3	0
117	Ohmic Contact Resistance to GaN Devices Dependence with on Temperature for GaN Devices T. Materials Science Forum, 0, 679-680, 816-819.	0.3	3
118	Bipolar Conduction across a Wafer Bonded p-n Si/SiC Heterojunction. Materials Science Forum, 0, 740-742, 1006-1009.	0.3	4
119	The Cryogenic Testing and Characterisation of SiC Diodes. Materials Science Forum, 0, 778-780, 863-866.	0.3	4
120	On the Ti ₃ Si ₂ ; Metallic Phase Formation for Robust p-Type 4H-SiC Ohmic Contacts. Materials Science Forum, 0, 778-780, 693-696.	0.3	18
121	Fabrication of 3C-SiC MOS Capacitors Using High-Temperature Oxidation. Materials Science Forum, 0, 821-823, 464-467.	0.3	4
122	Simulations of a Lateral PiN Diode on Si/SiC Substrate for High Temperature Applications. Materials Science Forum, 0, 821-823, 624-627.	0.3	3
123	Improved Channel Mobility by Oxide Nitridation for N-Channel MOSFET on 3C-SiC(100)/Si. Materials Science Forum, 0, 858, 667-670.	0.3	7
124	Cryogenic Characterisation and Modelling of Commercial SiC MOSFETs. Materials Science Forum, 0, 897, 557-560.	0.3	3