

Xavier Perpiñán

List of Publications by Year in descending order

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90
papers

3,067
citations

394421

19
h-index

161849

54
g-index

90
all docs

90
docs citations

90
times ranked

2916
citing authors

#	ARTICLE	IF	CITATIONS
1	A Survey of Wide Bandgap Power Semiconductor Devices. IEEE Transactions on Power Electronics, 2014, 29, 2155-2163.	7.9	1,700
2	Gate Oxide Degradation of SiC MOSFET in Switching Conditions. IEEE Electron Device Letters, 2014, 35, 1284-1286.	3.9	96
3	Temperature measurement on series resistance and devices in power packs based on on-state voltage drop monitoring at high current. Microelectronics Reliability, 2006, 46, 1834-1839.	1.7	87
4	Thermomechanical Assessment of Die-Attach Materials for Wide Bandgap Semiconductor Devices and Harsh Environment Applications. IEEE Transactions on Power Electronics, 2014, 29, 2261-2271.	7.9	87
5	SiC Schottky Diodes for Harsh Environment Space Applications. IEEE Transactions on Industrial Electronics, 2011, 58, 2582-2590.	7.9	83
6	Short-Circuit Study in Medium-Voltage GaN Cascodes, p-GaN HEMTs, and GaN MISHEMTs. IEEE Transactions on Industrial Electronics, 2017, 64, 9012-9022.	7.9	59
7	Long-Term Reliability of Railway Power Inverters Cooled by Heat-Pipe-Based Systems. IEEE Transactions on Industrial Electronics, 2011, 58, 2662-2672.	7.9	49
8	Irradiance-based emissivity correction in infrared thermography for electronic applications. Review of Scientific Instruments, 2011, 82, 114901.	1.3	48
9	P-GaN HEMTs Drain and Gate Current Analysis Under Short-Circuit. IEEE Electron Device Letters, 2017, 38, 505-508.	3.9	47
10	Analysis of Clamped Inductive Turnoff Failure in Railway Traction IGBT Power Modules Under Overload Conditions. IEEE Transactions on Industrial Electronics, 2011, 58, 2706-2714.	7.9	45
11	GaN metal-oxide-semiconductor field-effect transistor inversion channel mobility modeling. Journal of Applied Physics, 2009, 105, .	2.5	40
12	Origin of large negative electrocaloric effect in antiferroelectric PbZrO_3 . Physical Review B, 2021, 103, .	3.2	34
13	Internal infrared laser deflection system: a tool for power device characterization. Measurement Science and Technology, 2004, 15, 1011-1018.	2.6	27
14	Revisiting power cycling test for better life-time prediction in traction. Microelectronics Reliability, 2007, 47, 1690-1695.	1.7	27
15	IGBT module failure analysis in railway applications. Microelectronics Reliability, 2008, 48, 1427-1431.	1.7	26
16	Thermal resistance investigations on new leadframe-based LED packages and boards. Microelectronics Reliability, 2013, 53, 1084-1094.	1.7	26
17	Layout Role in Failure Physics of IGBTs Under Overloading Clamped Inductive Turnoff. IEEE Transactions on Electron Devices, 2013, 60, 598-605.	3.0	25
18	Power-Substrate Static Thermal Characterization Based on a Test Chip. IEEE Transactions on Device and Materials Reliability, 2008, 8, 671-679.	2.0	20

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19	Thermal fatigue effects on the temperature distribution inside IGBT modules for zone engine aeronautical applications. <i>Microelectronics Reliability</i> , 2007, 47, 1779-1783.	1.7	19
20	Reduced-Order Thermal Behavioral Model Based on Diffusive Representation. <i>IEEE Transactions on Power Electronics</i> , 2009, 24, 2833-2846.	7.9	19
21	Efficiency determination of RF linear power amplifiers by steady-state temperature monitoring using built-in sensors. <i>Sensors and Actuators A: Physical</i> , 2013, 192, 49-57.	4.1	19
22	Failure-relevant abnormal events in power inverters considering measured IGBT module temperature inhomogeneities. <i>Microelectronics Reliability</i> , 2007, 47, 1784-1789.	1.7	18
23	Enhanced power cycling capability of SiC Schottky diodes using press pack contacts. <i>Microelectronics Reliability</i> , 2012, 52, 2250-2255.	1.7	18
24	Thermal Analysis of LED Lamps for Optimal Driver Integration. <i>IEEE Transactions on Power Electronics</i> , 2015, 30, 3876-3891.	7.9	18
25	Hot-Spot Detection in Integrated Circuits by Substrate Heat-Flux Sensing. <i>IEEE Electron Device Letters</i> , 2008, 29, 1142-1144.	3.9	17
26	Solid-State Relay Solutions for Induction Cooking Applications Based on Advanced Power Semiconductor Devices. <i>IEEE Transactions on Industrial Electronics</i> , 2019, 66, 1832-1841.	7.9	17
27	A heterodyne method for the thermal observation of the electrical behavior of high-frequency integrated circuits. <i>Measurement Science and Technology</i> , 2008, 19, 115704.	2.6	16
28	Spatially and frequency-resolved monitoring of intradie capacitive coupling by heterodyne excitation infrared lock-in thermography. <i>Applied Physics Letters</i> , 2013, 102, .	3.3	16
29	Steady-state sinusoidal thermal characterization at chip level by internal infrared-laser deflection. <i>Journal Physics D: Applied Physics</i> , 2008, 41, 155508.	2.8	14
30	Low-cost and versatile thermal test chip for power assemblies assessment and thermometric calibration purposes. <i>Applied Thermal Engineering</i> , 2011, 31, 1664-1672.	6.0	14
31	Thermal cycling analysis of high temperature die-attach materials. <i>Microelectronics Reliability</i> , 2012, 52, 2314-2320.	1.7	14
32	Power Losses and Current Distribution Studies by Infrared Thermal Imaging in Soft- and Hard-Switched IGBTs Under Resonant Load. <i>IEEE Transactions on Power Electronics</i> , 2020, 35, 5221-5237.	7.9	14
33	Transmission Fabry-Pérot interference thermometry for thermal characterization of microelectronic devices. <i>Semiconductor Science and Technology</i> , 2006, 21, 1537-1542.	2.0	12
34	Development of an analog processing circuit for IR-radiation power and noncontact position measurements. <i>Review of Scientific Instruments</i> , 2005, 76, 025106.	1.3	11
35	Hot spot analysis in integrated circuit substrates by laser mirage effect. <i>Applied Physics Letters</i> , 2011, 98, 164104.	3.3	11
36	DC temperature measurements for power gain monitoring in RF power amplifiers. , 2012, , .		11

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37	Wireless pad-free integrated circuit debugging by powering modulation and lock-in infrared sensing. Applied Physics Letters, 2013, 102, .	3.3	11
38	Local thermal cycles determination in thermosyphon-cooled traction IGBT modules reproducing mission profiles. Microelectronics Reliability, 2007, 47, 1701-1706.	1.7	10
39	Thermal characterization of Insulated Metal Substrates with a power test chip. Power Semiconductor Devices & IC's, 2009 ISPSD 2009 21st International Symposium on, 2009, , .	0.0	10
40	Analysis of Excess Carrier Concentration Control in Fast-Recovery High Power Bipolar Diodes at Low Current Densities. Journal of the Electrochemical Society, 2010, 157, H711.	2.9	10
41	Design for reliability of solid state lighting systems. Microelectronics Reliability, 2012, 52, 2294-2300.	1.7	10
42	MOSFET dynamic thermal sensor for IC testing applications. Sensors and Actuators A: Physical, 2016, 242, 195-202.	4.1	10
43	Functional and Consumption Analysis of Integrated Circuits Supplied by Inductive Power Transfer by Powering Modulation and Lock-In Infrared Imaging. IEEE Transactions on Industrial Electronics, 2015, 62, 7774-7785.	7.9	9
44	A New Vertical JFET Power Device for Harsh Radiation Environments. Energies, 2017, 10, 256.	3.1	9
45	Output Power and Gain Monitoring in RF CMOS Class A Power Amplifiers by Thermal Imaging. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 2861-2870.	4.7	9
46	Thermal Management Strategies for Low- and High-Voltage Retrofit LED Lamp Drivers. IEEE Transactions on Power Electronics, 2019, 34, 3677-3688.	7.9	8
47	Low-cost trench isolation technique for reverse blocking IGBT using boron nitride doping wafers. Microelectronic Engineering, 2010, 87, 2323-2327.	2.4	7
48	Location of hot spots in integrated circuits by monitoring the substrate thermal-phase lag with the mirage effect. Optics Letters, 2010, 35, 2657.	3.3	7
49	Influence of different characterization parameters on the accuracy of LED board thermal models for retrofit bulbs. , 2013, , .		7
50	Comparison of temperature limits for Trench silicon IGBT technologies for medium power applications. Microelectronics Reliability, 2014, 54, 1839-1844.	1.7	7
51	Local Thermal Resistance Extraction in Monolithic Microwave Integrated Circuits. IEEE Transactions on Industrial Electronics, 2021, 68, 12840-12849.	7.9	7
52	Thermal calibration procedure for internal infrared laser deflection apparatus. Review of Scientific Instruments, 2005, 76, 094905.	1.3	6
53	Experimental analysis of temperature distribution within traction IGBT modules. , 2007, , .		6
54	Edge termination impact on clamped inductive turn-off failure in high-voltage IGBTs under overcurrent conditions. , 2011, , .		6

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55	Design methodologies for reliability of SSL LED boards. <i>Microelectronics Reliability</i> , 2013, 53, 1076-1083.	1.7	6
56	Temperature effects on the ruggedness of SiC Schottky diodes under surge current. <i>Microelectronics Reliability</i> , 2014, 54, 2207-2212.	1.7	6
57	Local non invasive study of SiC diodes with abnormal electrical behavior. <i>Solid-State Electronics</i> , 2015, 113, 35-41.	1.4	6
58	Contribution to Silicon-Carbide-MESFET ESD Robustness Analysis. <i>IEEE Transactions on Device and Materials Reliability</i> , 2018, 18, 214-223.	2.0	6
59	Direct Visualization of Anti-Ferroelectric Switching Dynamics via Electrocaloric Imaging. <i>Advanced Electronic Materials</i> , 2021, 7, 2100380.	5.1	6
60	Temperature Distribution and Short Circuit Events in IGBT-Modules used in Traction Inverters. , 2007, , .		5
61	Validation of Dynamic Thermal Simulations of Power Assemblies Using a Thermal Test Chip. , 2007, , .		5
62	Analysis and optimization of safe-operating-area of LUDMOS transistors based on 0.18 Åµm SOI CMOS technology. <i>Semiconductor Science and Technology</i> , 2010, 25, 045013.	2.0	5
63	Structural analysis of SiC Schottky diodes failure mechanism under current overload. <i>Journal Physics D: Applied Physics</i> , 2014, 47, 055102.	2.8	5
64	Characterization of phase change material systems using a thermal test device. <i>Microelectronics Journal</i> , 2015, 46, 1195-1201.	2.0	5
65	Characterization of thermal interface materials for IGBT inverter applications. , 2016, , .		5
66	Laser beam deflection-based perimeter scanning of integrated circuits for local overheating location. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 012002.	2.8	4
67	Study of layout influence on ruggedness of NPT-IGBT devices by physical modelling. <i>Microelectronics Reliability</i> , 2012, 52, 2471-2476.	1.7	4
68	A Review of Si MOS-gated Power Switches and PiN Rectifiers. <i>Automatika</i> , 2012, 53, 117-127.	2.0	4
69	LED driver thermal design considerations for solid-state lighting technologies. , 2012, , .		4
70	Study of heat sources interacting in integrated circuits by laser mirage effect. <i>Applied Physics Letters</i> , 2014, 105, 084101.	3.3	4
71	Characterization of MOSFET Temperature Sensors for On-chip Dynamic Thermal Measurements. <i>Procedia Engineering</i> , 2015, 120, 836-839.	1.2	4
72	Carrier Concentration Analysis in 1.2 kV SiC Schottky Diodes Under Current Crowding. <i>IEEE Electron Device Letters</i> , 2022, 43, 938-941.	3.9	4

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73	Heterodyne lock-in thermal coupling measurements in integrated circuits: Applications to test and characterization. Review of Scientific Instruments, 2009, 80, 026101.	1.3	3
74	Thermal resistance investigations on new leadframe-based LED packages and boards. , 2012, , .		3
75	Physically based analysis of electrical frequency response of passive microelectronic circuits by heterodyne lock-in thermal means. Journal Physics D: Applied Physics, 2013, 46, 445501.	2.8	3
76	Remarkable Increase in Surge Current Capability of SiC Schottky Diodes Using Press Pack Contacts. Materials Science Forum, 0, 740-742, 873-876.	0.3	3
77	Electro-thermal characterization of a differential temperature sensor in a 65nm CMOS IC: Applications to gain monitoring in RF amplifiers. Microelectronics Journal, 2014, 45, 484-490.	2.0	3
78	Clamped inductive turn-off failure in high-voltage NPT-IGBTs under overloading conditions. , 2012, , .		2
79	Single-MOSFET DC thermal sensor for RF-amplifier central frequency extraction. Sensors and Actuators A: Physical, 2017, 264, 157-164.	4.1	2
80	BPF-Based Thermal Sensor Circuit for On-Chip Testing of RF Circuits. Sensors, 2021, 21, 805.	3.8	2
81	Heat power source controller circuit. Review of Scientific Instruments, 2004, 75, 5123-5125.	1.3	1
82	Self-heating experimental study of 600V PT-IGBTs under low dissipation energies. Microelectronics Journal, 2004, 35, 841-847.	2.0	1
83	Depth-Resolved Temperature Measurements on Power Devices under Transient Conditions. , 2007, , .		1
84	Review of temperature sensors as monitors for RF-MMW built-in testing and self-calibration schemes. , 2014, , .		1
85	Determination of Anand viscoplastic constitutive parameters for the AuGe solder alloy from experimental stress-strain curves for power systems integration FEA simulations. , 2021, , .		1
86	Nonlinearity characterization of temperature sensing systems for integrated circuit testing by intermodulation products monitoring. Review of Scientific Instruments, 2011, 82, 094902.	1.3	0
87	Thermo-mechanical evaluation and life time simulation of high power LED lamp boards. , 2012, , .		0
88	In-situ measurements of material thermal parameters for accurate LED lamp thermal modelling. , 2013, , .		0
89	Characterization of phase change material systems with a thermal test device. , 2014, , .		0
90	Study of surface weak spots on SiC Schottky Diodes under specific operating regimes by Infrared Lock-in sensing. , 2014, , .		0