

Tobias Erlbacher

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

103
papers

530
citations

11
h-index

17
g-index

120
ext. papers

682
ext. citations

1.4
avg, IF

3.94
L-index

#	Paper	IF	Citations
103	Tunneling atomic-force microscopy as a highly sensitive mapping tool for the characterization of film morphology in thin high-k dielectrics. <i>Applied Physics Letters</i> , 2008 , 92, 252910	3.4	68
102	Reduced On Resistance in LDMOS Devices by Integrating Trench Gates Into Planar Technology. <i>IEEE Electron Device Letters</i> , 2010 , 31, 464-466	4.4	27
101	Analytical Model and Design of 4H-SiC Planar and Trenched JBS Diodes. <i>IEEE Transactions on Electron Devices</i> , 2016 , 63, 2474-2481	2.9	22
100	Methodology for the investigation of threading dislocations as a source of vertical leakage in AlGaN/GaN-HEMT heterostructures for power devices. <i>Journal of Applied Physics</i> , 2019 , 125, 095704	2.5	21
99	A Model of Electric Field Distribution in Gate Oxide and JFET-Region of 4H-SiC DMOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2016 , 63, 3795-3799	2.9	17
98	Lateral Power Transistors in Integrated Circuits. <i>Power Systems</i> , 2014 ,	0.4	15
97	Vertical breakdown of GaN on Si due to V-pits. <i>Journal of Applied Physics</i> , 2020 , 127, 015701	2.5	15
96	Optimization of 4H-SiC UV Photodiode Performance Using Numerical Process and Device Simulation. <i>IEEE Sensors Journal</i> , 2016 , 16, 4246-4252	4	12
95	Optimized Design for 4H-SiC Power DMOSFET. <i>IEEE Electron Device Letters</i> , 2016 , 37, 1454-1457	4.4	12
94	4.5 kV SiC Junction Barrier Schottky Diodes with Low Leakage Current and High Forward Current Density. <i>Materials Science Forum</i> , 2017 , 897, 427-430	0.4	11
93	A trade-off between nominal forward current density and surge current capability for 4.5kV SiC MPS diodes 2016 ,		11
92	Analysis of Compensation Effects in Aluminum-Implanted 4H-SiC Devices. <i>Materials Science Forum</i> , 2018 , 924, 184-187	0.4	11
91	Impact of temperature increments on tunneling barrier height and effective electron mass for plasma nitrided thin SiO ₂ layer on a large wafer area. <i>Journal of Applied Physics</i> , 2010 , 108, 073304	2.5	11
90	Comparative Study of Electrical and Microstructural Properties of 4H-SiC MOSFETs. <i>Materials Science Forum</i> , 2012 , 717-720, 437-440	0.4	11
89	Advanced 4H-SiC p-i-n Diode as Highly Sensitive High-Temperature Sensor Up To 460 °C. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 3399-3404	2.9	10
88	Comparative study between conventional macroscopic IV techniques and advanced AFM based methods for electrical characterization of dielectrics at the nanoscale. <i>Microelectronic Engineering</i> , 2009 , 86, 1911-1914	2.5	10
87	A highly sensitive evaluation method for the determination of different current conduction mechanisms through dielectric layers. <i>Journal of Applied Physics</i> , 2011 , 110, 054104	2.5	9

86	The impact of dislocations on AlGaIn/GaN Schottky diodes and on gate failure of high electron mobility transistors. <i>Scientific Reports</i> , 2020 , 10, 17252	4.9	9
85	Analytical Model for the Influence of the Gate-Voltage on the Forward Conduction Properties of the Body-Diode in SiC-MOSFETs. <i>Materials Science Forum</i> , 2018 , 924, 901-904	0.4	8
84	Bimodal CAFM TDDDB distributions in polycrystalline HfO ₂ gate stacks: The role of the interfacial layer and grain boundaries. <i>Microelectronic Engineering</i> , 2013 , 109, 129-132	2.5	8
83	Wavelength-selective 4H-SiC UV-sensor array. <i>Materials Science in Semiconductor Processing</i> , 2019 , 90, 205-211	4.3	8
82	Feasibility of 4H-SiC p-i-n Diode for Sensitive Temperature Measurements Between 20.5 K and 802 K. <i>IEEE Sensors Journal</i> , 2019 , 19, 2871-2878	4	8
81	Significant On-Resistance Reduction of LDMOS Devices by Intermittent Trench Gates Integration. <i>IEEE Transactions on Electron Devices</i> , 2012 , 59, 3470-3476	2.9	7
80	ATHENIS_3D: Automotive tested high-voltage and embedded non-volatile integrated SoC platform with 3D technology 2016 ,		7
79	Potential of 4H-SiC CMOS for High Temperature Applications Using Advanced Lateral p-MOSFETs. <i>Materials Science Forum</i> , 2016 , 858, 821-824	0.4	7
78	Implementation of 4H-SiC Pin-Diodes as Nearly Linear Temperature Sensors up to 800 K towards SiC Multi-Sensor Integration. <i>Materials Science Forum</i> , 2017 , 897, 618-621	0.4	6
77	Aluminum acceptor activation and charge compensation in implanted p-type 4H-SiC. <i>AIP Advances</i> , 2019 , 9, 055308	1.5	6
76	Influence of Al Doping Concentration and Annealing Parameters on TiAl Based Ohmic Contacts on 4H-SiC. <i>Materials Science Forum</i> , 2018 , 924, 393-396	0.4	6
75	Gate oxide reliability at the nanoscale evaluated by combining conductive atomic force microscopy and constant voltage stress. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2011 , 29, 01AB08	1.3	6
74	Self-Aligned Growth of Organometallic Layers for Nonvolatile Memories: Comparison of Liquid-Phase and Vapor-Phase Deposition. <i>Journal of the Electrochemical Society</i> , 2008 , 155, H693	3.9	6
73	A 4H-SiC UV Phototransistor With Excellent Optical Gain Based on Controlled Potential Barrier. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 154-159	2.9	6
72	Interplay between C-doping, threading dislocations, breakdown, and leakage in GaN on Si HEMT structures. <i>AIP Advances</i> , 2020 , 10, 045028	1.5	6
71	Improving 5V Digital 4H-SiC CMOS ICs for Operating at 400°C Using PMOS Channel Implantation. <i>Materials Science Forum</i> , 2019 , 963, 827-831	0.4	5
70	Influence of Triangular Defects on the Electrical Characteristics of 4H-SiC Devices. <i>Materials Science Forum</i> , 2018 , 924, 164-167	0.4	5
69	Deeper insight into lifetime-engineering in 4H-SiC by ion implantation. <i>Journal of Applied Physics</i> , 2019 , 126, 045701	2.5	5

68	Silicon nitride, a high potential dielectric for 600 V integrated RC-snubber applications. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2015 , 33, 01A112	1.3	5
67	Ohmic and rectifying contacts on bulk AlN for radiation detector applications. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2012 , 9, 968-971		5
66	Influence of Ion Implantation in SiC on the Channel Mobility in Lateral N-Channel MOSFETs. <i>ECS Transactions</i> , 2013 , 58, 71-80	1	5
65	High-K: Latest Developments and Perspectives. <i>Materials Science Forum</i> , 2008 , 573-574, 165-180	0.4	5
64	HfSiO/SiO ₂ - and SiO ₂ /HfSiO/SiO ₂ -gate stacks for non-volatile memories. <i>Thin Solid Films</i> , 2008 , 516, 7727-7731	2.2	5
63	RESURF n-LDMOS Transistor for Advanced Integrated Circuits in 4H-SiC. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 3278-3284	2.9	5
62	Post-trench processing of silicon deep trench capacitors for power electronic applications 2016 ,		5
61	2019 ,		5
60	Reducing On-Resistance for SiC Diodes by Thin Wafer and Laser Anneal Technology. <i>Materials Science Forum</i> , 2020 , 1004, 155-160	0.4	4
59	Systematic Analysis of the High- and Low-Field Channel Mobility in Lateral 4H-SiC MOSFETs. <i>Materials Science Forum</i> , 2014 , 778-780, 583-586	0.4	4
58	Dielectric layers suitable for high voltage integrated trench capacitors. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2011 , 29, 01AB04	1.3	4
57	Hafnium silicate as control oxide in non-volatile memories. <i>Microelectronic Engineering</i> , 2007 , 84, 2239-2242		4
56	Ion Implanted 4H-SiC UV Pin-Diodes for Solar Radiation Detection Simulation and Characterization. <i>Materials Science Forum</i> , 2016 , 858, 1032-1035	0.4	4
55	Channeling in 4H-SiC from an Application Point of View. <i>Materials Science Forum</i> , 2019 , 963, 386-389	0.4	4
54	Optimization of 4H-SiC Photodiodes as Selective UV Sensors. <i>Materials Science Forum</i> , 2017 , 897, 622-625.4		3
53	Experimental analysis of bipolar SiC-devices for future energy distribution systems 2014 ,		3
52	(Invited) Electrical Scanning Probe Microscopy Techniques for the Detailed Characterization of High-k Dielectric Layers. <i>ECS Transactions</i> , 2010 , 28, 139-156	1	3
51	Suppression of parasitic electron injection in silicon-oxide-nitride-oxide-silicon-type memory cells using high-k capping layers. <i>Journal of Vacuum Science & Technology B</i> , 2009 , 27, 482		3

50	Experimental Verification of a Self-Triggered Solid-State Circuit Breaker Based on a SiC BIFET. <i>Materials Science Forum</i> , 2017 , 897, 665-668	0.4	2
49	Design of a 4H-SiC RESURF n-LDMOS Transistor for High Voltage Integrated Circuits. <i>Materials Science Forum</i> , 2019 , 963, 629-632	0.4	2
48	Low-Resistance Ohmic Contact Formation by Laser Annealing of N-Implanted 4H-SiC. <i>Materials Science Forum</i> , 2020 , 1004, 718-724	0.4	2
47	An Iterative Surface Potential Algorithm Including Interface Traps for Compact Modeling of SiC-MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 855-862	2.9	2
46	Evidence of low injection efficiency for implanted p-emitters in bipolar 4H-SiC high-voltage diodes. <i>Solid-State Electronics</i> , 2018 , 144, 101-105	1.7	2
45	The GaN trench gate MOSFET with floating islands: High breakdown voltage and improved BFOM. <i>Superlattices and Microstructures</i> , 2018 , 114, 200-206	2.8	2
44	Monolithic 3D TSV-based high-voltage, high-temperature capacitors. <i>Microelectronic Engineering</i> , 2016 , 156, 19-23	2.5	2
43	On the Origin of Charge Compensation in Aluminum-Implanted n-Type 4H-SiC by Analysis of Hall Effect Measurements. <i>Materials Science Forum</i> , 2019 , 963, 433-436	0.4	2
42	2011 ,		2
41	Lifetime limiting defects in 4H-SiC epitaxial layers: The influence of substrate originated defects. <i>Journal of Crystal Growth</i> , 2021 , 560-561, 126033	1.6	2
40	Monolithically Integrated Solid-State-Circuit-Breaker for High Power Applications. <i>Materials Science Forum</i> , 2017 , 897, 661-664	0.4	1
39	Novel Advanced Analytical Design Tool for 4H-SiC VDMOSFET Devices. <i>Materials Science Forum</i> , 2017 , 897, 529-532	0.4	1
38	Switching SiC Devices Faster and More Efficient Using a DBC Mounted Terminal Decoupling Si-RC Element. <i>Materials Science Forum</i> , 2017 , 897, 689-692	0.4	1
37	Influence of Trench Design on the Electrical Properties of 650V 4H-SiC JBS Diodes. <i>Materials Science Forum</i> , 2019 , 963, 549-552	0.4	1
36	Robust Double-Ring Junction Termination Extension Design for High Voltage Power Semiconductor Devices Based on 4H-SiC. <i>Materials Science Forum</i> , 2015 , 821-823, 656-659	0.4	1
35	Electrical Properties of Schottky-Diodes Based on B Doped Diamond. <i>Materials Science Forum</i> , 2018 , 924, 931-934	0.4	1
34	Future technology trends 2018 , 3-53		1
33	1700V 34m ² 4H-SiC MOSFET With Retrograde Doping in Junction Field-Effect Transistor Region 2019 ,		1

32	Integrated Digital and Analog Circuit Blocks in a Scalable Silicon Carbide CMOS Technology. <i>IEEE Transactions on Electron Devices</i> , 2022 , 69, 4-10	2.9	1
31	Design and Fabrication of 4H-SiC Mosfets with Optimized JFET and p-Body Design. <i>Materials Science Forum</i> , 1014, 93-101	0.4	1
30	Lateral Power Transistors on Wide Bandgap Semiconductors. <i>Power Systems</i> , 2014 , 177-208	0.4	1
29	Conduction Loss Reduction for Bipolar Injection Field-Effect-Transistors (BIFET). <i>Materials Science Forum</i> , 2016 , 858, 917-920	0.4	1
28	Design and Fabrication of 3300V 100m μ m 4H-SiC MOSFET with Stepped p-body Structure 2019 ,		1
27	Determination of Compensation Ratios of Al-Implanted 4H-SiC by TCAD Modelling of TLM Measurements. <i>Materials Science Forum</i> , 2019 , 963, 445-448	0.4	1
26	Design Considerations for Robust Manufacturing and High Yield of 1.2 kV 4H-SiC VDMOS Transistors. <i>Materials Science Forum</i> , 2019 , 963, 763-767	0.4	1
25	Ohmic Contact Mechanism for Ni/C-Faced 4H-n-SiC Substrate. <i>Journal of Nanomaterials</i> , 2019 , 2019, 1-5	3.2	1
24	Comparative Study of 4H-SiC UV-Sensors with Ion Implanted and Epitaxially Grown p-Emitter 2018 ,		1
23	Impact of Channel Implantation on a 4H-SiC CMOS Operational Amplifier for High Temperature Applications. <i>Materials Science Forum</i> , 2020 , 1004, 1123-1128	0.4	0
22	Influence of Shallow Pits and Device Design of 4H-SiC VDMOS Transistors on In-Line Defect Analysis by Photoluminescence and Differential Interference Contrast Mapping. <i>Materials Science Forum</i> , 2020 , 1004, 299-305	0.4	0
21	Integrated Passive Devices and Switching Circuit Design for a 3D DC/DC Converter up to 60V. <i>Journal of Circuits, Systems and Computers</i> , 2020 , 29, 2050039	0.9	0
20	A Monolithically Integrated SiC Circuit Breaker. <i>IEEE Electron Device Letters</i> , 2021 , 42, 1516-1519	4.4	0
19	Via Size-Dependent Properties of TiAl Ohmic Contacts on 4H-SiC. <i>Materials Science Forum</i> , 1062, 185-189	0.4	0
18	Technological Advances Towards 4H-SiC JBS Diodes for Wind Power Applications. <i>Lecture Notes in Electrical Engineering</i> , 2019 , 83-89	0.2	
17	Temperature Dependent Characterization of Bipolar Injection Field-Effect-Transistors (BIFET) for Determining the Short-Circuit-Capability. <i>Materials Science Forum</i> , 2015 , 821-823, 806-809	0.4	
16	Influence of Aluminum Compensation Effects in 4H-SiC on the Performance of VDMOS Transistors. <i>Materials Science Forum</i> , 2020 , 1004, 843-849	0.4	
15	Pre-Deposition Interfacial Oxidation and Post-Deposition Interface Nitridation of LPCVD TEOS Used as Gate Dielectric on 4H-SiC. <i>Materials Science Forum</i> , 2020 , 1004, 535-540	0.4	

14	First Experimental Test on Bipolar Mode Field Effect Transistor Prototype in 4H-SiC: A Proof of Concept. <i>Materials Science Forum</i> , 2019 , 963, 697-700	0.4
13	Temperature and Electrical Field Dependence of the Ambipolar Mobility in N-Doped 4H-SiC. <i>Materials Science Forum</i> , 2014 , 778-780, 487-490	0.4
12	Modeling of ion drift in 4H-SiC-based chemical MOSFET sensors. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2015 , 33, 01A103	1.3
11	Feasibility and limitations of anti-fuses based on bistable non-volatile switches for power electronic applications. <i>Solid-State Electronics</i> , 2012 , 75, 33-36	1.7
10	Lateral Power Transistors with Trench Patterns. <i>Power Systems</i> , 2014 , 133-151	0.4
9	Modern MOS-Based Power Device Technologies in Integrated Circuits. <i>Power Systems</i> , 2014 , 75-103	0.4
8	Lateral Power Transistors Combining Planar and Trench Gate Topologies. <i>Power Systems</i> , 2014 , 153-175	0.4
7	SiC MOSFET with a Self-Aligned Channel Defined by Shallow Source-JFET Implantation: A Simulation Study. <i>Materials Science Forum</i> , 2020 , 1004, 850-855	0.4
6	Performance of 4H-SiC Bipolar Diodes as Temperature Sensor at Low Temperatures. <i>Materials Science Forum</i> , 2019 , 963, 572-575	0.4
5	Surface Characterization of Ion Implanted 4H-SiC Epitaxial Layers with Ion Energy and Concentration Variations. <i>Materials Science Forum</i> , 2019 , 963, 429-432	0.4
4	Decoration of Al Implantation Profiles in 4H-SiC by Bevel Grinding and Dry Oxidation. <i>Materials Science Forum</i> , 2019 , 963, 441-444	0.4
3	Comparison between Ni-SALICIDE and Self-Aligned Lift-Off Used in Fabrication of Ohmic Contacts for SiC Power MOSFET. <i>Materials Science Forum</i> , 2019 , 963, 490-493	0.4
2	On a Novel Source Technology for Deep Aluminum Diffusion for Silicon Power Electronics. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2019 , 216, 1900167	1.6
1	Defect Reduction in Epilayers for SiC Trench MOSFETs by Enhanced Epitaxial Growth. <i>Materials Science Forum</i> , 2012 , 1062, 13-17	0.4