

Tobias Erlbacher

List of Publications by Year in Descending Order

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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 | 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 |
| 102 | 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 |
| 101 | A Monolithically Integrated SiC Circuit Breaker. <i>IEEE Electron Device Letters</i> , 2021 , 42, 1516-1519 | 4.4 | 0 |
| 100 | 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 |
| 99 | 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 |
| 98 | 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 |
| 97 | 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 | |
| 96 | 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 |
| 95 | 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 | |
| 94 | 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 |
| 93 | 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 |
| 92 | Vertical breakdown of GaN on Si due to V-pits. <i>Journal of Applied Physics</i> , 2020 , 127, 015701 | 2.5 | 15 |
| 91 | 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 |
| 90 | 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 |
| 89 | 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 | |
| 88 | The impact of dislocations on AlGaN/GaN Schottky diodes and on gate failure of high electron mobility transistors. <i>Scientific Reports</i> , 2020 , 10, 17252 | 4.9 | 9 |
| 87 | 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 |

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| 86 | 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 |
| 85 | 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 |
| 84 | 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 |
| 83 | Aluminum acceptor activation and charge compensation in implanted p-type 4H-SiC. <i>AIP Advances</i> , 2019 , 9, 055308 | 1.5 | 6 |
| 82 | Technological Advances Towards 4H-SiC JBS Diodes for Wind Power Applications. <i>Lecture Notes in Electrical Engineering</i> , 2019 , 83-89 | 0.2 | |
| 81 | Methodology for the investigation of threading dislocations as a source of vertical leakage in AlGaIn/GaN-HEMT heterostructures for power devices. <i>Journal of Applied Physics</i> , 2019 , 125, 095704 | 2.5 | 21 |
| 80 | Deeper insight into lifetime-engineering in 4H-SiC by ion implantation. <i>Journal of Applied Physics</i> , 2019 , 126, 045701 | 2.5 | 5 |
| 79 | 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 | |
| 78 | 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 |
| 77 | 1700V 34m ² 4H-SiC MOSFET With Retrograde Doping in Junction Field-Effect Transistor Region 2019 , | | 1 |
| 76 | 2019 , | | 5 |
| 75 | Design and Fabrication of 3300V 100m ² 4H-SiC MOSFET with Stepped p-body Structure 2019 , | | 1 |
| 74 | Performance of 4H-SiC Bipolar Diodes as Temperature Sensor at Low Temperatures. <i>Materials Science Forum</i> , 2019 , 963, 572-575 | 0.4 | |
| 73 | Channeling in 4H-SiC from an Application Point of View. <i>Materials Science Forum</i> , 2019 , 963, 386-389 | 0.4 | 4 |
| 72 | 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 | |
| 71 | 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 | |
| 70 | 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 |
| 69 | 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 | |

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| 68 | 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 |
| 67 | 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 | |
| 66 | Ohmic Contact Mechanism for Ni/C-Faced 4H-n-SiC Substrate. <i>Journal of Nanomaterials</i> , 2019 , 2019, 1-5 | 3.2 | 1 |
| 65 | Wavelength-selective 4H-SiC UV-sensor array. <i>Materials Science in Semiconductor Processing</i> , 2019 , 90, 205-211 | 4.3 | 8 |
| 64 | 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 |
| 63 | 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 |
| 62 | 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 |
| 61 | Influence of Triangular Defects on the Electrical Characteristics of 4H-SiC Devices. <i>Materials Science Forum</i> , 2018 , 924, 164-167 | 0.4 | 5 |
| 60 | Analysis of Compensation Effects in Aluminum-Implanted 4H-SiC Devices. <i>Materials Science Forum</i> , 2018 , 924, 184-187 | 0.4 | 11 |
| 59 | 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 |
| 58 | 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 |
| 57 | Electrical Properties of Schottky-Diodes Based on B Doped Diamond. <i>Materials Science Forum</i> , 2018 , 924, 931-934 | 0.4 | 1 |
| 56 | Future technology trends 2018 , 3-53 | | 1 |
| 55 | Comparative Study of 4H-SiC UV-Sensors with Ion Implanted and Epitaxially Grown p-Emitter 2018 , | | 1 |
| 54 | 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 |
| 53 | 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 |
| 52 | 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 |
| 51 | Monolithically Integrated Solid-State-Circuit-Breaker for High Power Applications. <i>Materials Science Forum</i> , 2017 , 897, 661-664 | 0.4 | 1 |

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| 50 | 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 |
| 49 | Optimization of 4H-SiC Photodiodes as Selective UV Sensors. <i>Materials Science Forum</i> , 2017 , 897, 622-625. | 4 | 3 |
| 48 | Novel Advanced Analytical Design Tool for 4H-SiC VDMOSFET Devices. <i>Materials Science Forum</i> , 2017 , 897, 529-532 | 0.4 | 1 |
| 47 | 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 |
| 46 | 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 |
| 45 | A trade-off between nominal forward current density and surge current capability for 4.5kV SiC MPS diodes 2016 , | | 11 |
| 44 | Monolithic 3D TSV-based high-voltage, high-temperature capacitors. <i>Microelectronic Engineering</i> , 2016 , 156, 19-23 | 2.5 | 2 |
| 43 | Optimization of 4H-SiC UV Photodiode Performance Using Numerical Process and Device Simulation. <i>IEEE Sensors Journal</i> , 2016 , 16, 4246-4252 | 4 | 12 |
| 42 | ATHENIS_3D: Automotive tested high-voltage and embedded non-volatile integrated SoC platform with 3D technology 2016 , | | 7 |
| 41 | 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 |
| 40 | Conduction Loss Reduction for Bipolar Injection Field-Effect-Transistors (BIFET). <i>Materials Science Forum</i> , 2016 , 858, 917-920 | 0.4 | 1 |
| 39 | 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 |
| 38 | 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 |
| 37 | Post-trench processing of silicon deep trench capacitors for power electronic applications 2016 , | | 5 |
| 36 | Optimized Design for 4H-SiC Power DMOSFET. <i>IEEE Electron Device Letters</i> , 2016 , 37, 1454-1457 | 4.4 | 12 |
| 35 | 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 | |
| 34 | 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 |
| 33 | 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 |

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| 32 | 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 | |
| 31 | Lateral Power Transistors in Integrated Circuits. <i>Power Systems</i> , 2014 , | 0.4 | 15 |
| 30 | 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 | |
| 29 | Experimental analysis of bipolar SiC-devices for future energy distribution systems 2014 , | | 3 |
| 28 | 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 |
| 27 | Lateral Power Transistors on Wide Bandgap Semiconductors. <i>Power Systems</i> , 2014 , 177-208 | 0.4 | 1 |
| 26 | Lateral Power Transistors with Trench Patterns. <i>Power Systems</i> , 2014 , 133-151 | 0.4 | |
| 25 | Modern MOS-Based Power Device Technologies in Integrated Circuits. <i>Power Systems</i> , 2014 , 75-103 | 0.4 | |
| 24 | Lateral Power Transistors Combining Planar and Trench Gate Topologies. <i>Power Systems</i> , 2014 , 153-175 | 0.4 | |
| 23 | Bimodal CAFM TDDB 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 |
| 22 | 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 |
| 21 | 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 | |
| 20 | 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 |
| 19 | 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 |
| 18 | Comparative Study of Electrical and Microstructural Properties of 4H-SiC MOSFETs. <i>Materials Science Forum</i> , 2012 , 717-720, 437-440 | 0.4 | 11 |
| 17 | 2011 , | | 2 |
| 16 | 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 |
| 15 | 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 |

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| 14 | 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 |
| 13 | 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 |
| 12 | (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 |
| 11 | 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 |
| 10 | 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 |
| 9 | 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 |
| 8 | 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 |
| 7 | 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 |
| 6 | High-K: Latest Developments and Perspectives. <i>Materials Science Forum</i> , 2008 , 573-574, 165-180 | 0.4 | 5 |
| 5 | 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 |
| 4 | Hafnium silicate as control oxide in non-volatile memories. <i>Microelectronic Engineering</i> , 2007 , 84, 2239-2242 | 3.5 | 4 |
| 3 | Design and Fabrication of 4H-SiC Mosfets with Optimized JFET and p-Body Design. <i>Materials Science Forum</i> , 2007 , 1014, 93-101 | 0.4 | 1 |
| 2 | Defect Reduction in Epilayers for SiC Trench MOSFETs by Enhanced Epitaxial Growth. <i>Materials Science Forum</i> , 2007 , 1062, 13-17 | 0.4 | |
| 1 | Via Size-Dependent Properties of TiAl Ohmic Contacts on 4H-SiC. <i>Materials Science Forum</i> , 2007 , 1062, 185-189 | 0.4 | 0 |