

# Mitsuru Sometani

## List of Publications by Year in descending order

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59  
papers

802  
citations

623734

14  
h-index

580821

25  
g-index

59  
all docs

59  
docs citations

59  
times ranked

479  
citing authors

#	ARTICLE	IF	CITATIONS
1	Improved Channel Mobility in 4H-SiC MOSFETs by Boron Passivation. IEEE Electron Device Letters, 2014, 35, 1176-1178.	3.9	98
2	Characterization of traps at nitrated SiO <sub>2</sub> /SiC interfaces near the conduction band edge by using Hall effect measurements. Applied Physics Express, 2017, 10, 046601.	2.4	96
3	Temperature-dependent analysis of conduction mechanism of leakage current in thermally grown oxide on 4H-SiC. Journal of Applied Physics, 2015, 117, .	2.5	48
4	Ultrahigh-temperature rapid thermal oxidation of 4H-SiC(0001) surfaces and oxidation temperature dependence of SiO <sub>2</sub> /SiC interface properties. Applied Physics Letters, 2016, 109, .	3.3	39
5	Interface carbon defects at 4H-SiC(0001)/SiO <sub>2</sub> interfaces studied by electron-spin-resonance spectroscopy. Applied Physics Letters, 2018, 113, .	3.3	38
6	Threshold-voltage instability in 4H-SiC MOSFETs with nitrated gate oxide revealed by non-relaxation method. Japanese Journal of Applied Physics, 2016, 55, 04ER11.	1.5	28
7	Ideal phonon-scattering-limited mobility in inversion channels of 4H-SiC(0001) MOSFETs with ultralow net doping concentrations. Applied Physics Letters, 2019, 115, .	3.3	22
8	Impact of crystal faces of 4H-SiC in SiO <sub>2</sub> /4H-SiC structures on interface trap densities and mobilities. Applied Physics Express, 2019, 12, 021003.	2.4	21
9	Energy distribution of Al <sub>2</sub> O <sub>3</sub> /diamond interface states characterized by high temperature capacitance-voltage method. Carbon, 2020, 168, 659-664.	10.3	20
10	Carbon dangling-bond center (carbon <i>P</i> center) at 4H-SiC(0001)/SiO <sub>2</sub> interface. Applied Physics Letters, 2020, 116, .	3.3	20
11	Characterization of near-interface traps at 4H-SiC metal-oxide-semiconductor interfaces using modified distributed circuit model. Applied Physics Express, 2017, 10, 064101.	2.4	19
12	Passive- <i>active</i> oxidation boundary for thermal oxidation of 4H-SiC(0001) surface in O <sub>2</sub> /Ar gas mixture and its impact on SiO <sub>2</sub> /SiC interface quality. Applied Physics Express, 2018, 11, 091301.	2.4	19
13	Electron-spin-resonance and electrically detected-magnetic-resonance characterization on <i>P</i> center in various 4H-SiC(0001)/SiO <sub>2</sub> interfaces. Journal of Applied Physics, 2020, 127, .	2.5	18
14	Self-aligned formation of the trench bottom shielding region in 4H-SiC trench gate MOSFET. Japanese Journal of Applied Physics, 2016, 55, 04ER02.	1.5	17
15	Sub-nanometer-scale depth profiling of nitrogen atoms in SiO <sub>2</sub> /4H-SiC structures treated with NO annealing. Applied Physics Express, 2018, 11, 101303.	2.4	17
16	Effect of boron incorporation on slow interface traps in SiO <sub>2</sub> /4H-SiC structures. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	2.3	16
17	Insight into enhanced field-effect mobility of 4H-SiC MOSFET with Ba incorporation studied by Hall effect measurements. AIP Advances, 2018, 8, .	1.3	16
18	Dynamic characteristics of large current capacity module using 16-kV ultrahigh voltage SiC flip-type n-channel IE-IGBT. , 2014, , .		13

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19	Characterization of traps in SiC/SiO <sub>2</sub> interfaces close to the conduction band by deep-level transient spectroscopy. Japanese Journal of Applied Physics, 2015, 54, 111301.	1.5	12
20	Impact of oxide thickness on the density distribution of near-interface traps in 4H-SiC MOS capacitors. Japanese Journal of Applied Physics, 2018, 57, 06KA04.	1.5	12
21	3.3 kV-Class 4H-SiC UMOSFET by Double-Trench with Tilt Angle Ion Implantation. Materials Science Forum, 2016, 858, 974-977.	0.3	11
22	Difference in electron mobility at 4H-SiC/SiO <sub>2</sub> interfaces with various crystal faces originating from effective-field-dependent scattering. Applied Physics Letters, 2020, 117, .	3.3	11
23	Insight into Channel Conduction Mechanisms of 4H-SiC(0001) MOSFET Based on Temperature-Dependent Hall Effect Measurement. Materials Science Forum, 0, 1004, 620-626.	0.3	11
24	Insight into Al <sub>2</sub> O <sub>3</sub> /B-doped diamond interface states with high-temperature conductance method. Applied Physics Letters, 2020, 117, .	3.3	11
25	Exact Characterization of Threshold Voltage Instability in 4H-SiC MOSFETs by Non-Relaxation Method. Materials Science Forum, 0, 821-823, 685-688.	0.3	10
26	Accurate evaluation of fast threshold voltage shift for SiC MOS devices under various gate bias stress conditions. Japanese Journal of Applied Physics, 2018, 57, 04FA07.	1.5	10
27	Electrically detected magnetic resonance study on interface defects at nitrated Si-face, a-face, and m-face 4H-SiC/SiO <sub>2</sub> interfaces. Applied Physics Letters, 2020, 116, .	3.3	10
28	Improvement of Dielectric Properties on Deposited SiO <sub>2</sub> Caused by Stress Relaxation with Thermal Annealing. Japanese Journal of Applied Physics, 2009, 48, 05DB03.	1.5	9
29	Variation of Chemical Vapor Deposited SiO <sub>2</sub> Density Due to Generation and Shrinkage of Open Space During Thermal Annealing. Japanese Journal of Applied Physics, 2012, 51, 021101.	1.5	9
30	20 kV-Class Ultra-High Voltage 4H-SiC n-IE-IGBTs. Materials Science Forum, 0, 1004, 899-904.	0.3	9
31	Suppression of Leakage Current of Deposited SiO <sub>2</sub> with Bandgap Increasing by High Temperature Annealing. ECS Transactions, 2009, 19, 403-413.	0.5	8
32	Impact of rapid cooling process in ultrahigh-temperature oxidation of 4H-SiC(0001). Japanese Journal of Applied Physics, 2017, 56, 04CR04.	1.5	8
33	Hole trapping in SiC-MOS devices evaluated by fast-capacitance-voltage method. Japanese Journal of Applied Physics, 2018, 57, 04FR15.	1.5	8
34	Electrically detected-magnetic-resonance identifications of defects at 4H-SiC(0001)/SiO <sub>2</sub> interfaces with wet oxidation. Applied Physics Letters, 2019, 115, 151602.	3.3	8
35	Dynamic Characterization of the Threshold Voltage Instability under the Pulsed Gate Bias Stress in 4H-SiC MOSFET. Materials Science Forum, 0, 897, 549-552.	0.3	7
36	Analysis of fast and slow responses in AC conductance curves for p-type SiC MOS capacitors. Japanese Journal of Applied Physics, 2018, 57, 06KA06.	1.5	7

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37	Mobility-limiting Coulomb scattering in nitrated 4H-SiC inversion channel on 111̄00 m-face and 112̄00 a-face characterized by Hall effect measurements. Applied Physics Letters, 2019, 115, 132106.	3.3	7
38	Comprehensive physical and electrical characterizations of NO nitrated SiO <sub>2</sub> /4H-SiC(112̄,0) interfaces. Japanese Journal of Applied Physics, 2022, 61, SC1065.	1.5	7
39	Improved channel mobility of 4H-SiC n-MOSFETs by ultrahigh-temperature gate oxidation with low-oxygen partial-pressure cooling. Japanese Journal of Applied Physics, 2018, 57, 120304.	1.5	6
40	Impact of nitridation on the reliability of 4H-SiC(112̄,0) MOS devices. Applied Physics Express, 2022, 15, 041002.	2.4	6
41	Annealing properties of open volumes in strained SiN films studied by monoenergetic positron beams. Journal of Applied Physics, 2007, 102, 064513.	2.5	5
42	Electrical detection of TV2a-type silicon vacancy spin defect in 4H-SiC MOSFETs. Applied Physics Letters, 2022, 120, 064001.	3.3	5
43	Conduction mechanisms of oxide leakage current in p-channel 4H-SiC MOSFETs. Japanese Journal of Applied Physics, 2020, 59, 044003.	1.5	4
44	Long TDDDB Lifetime of SiO <sub>2</sub> Film by Controlling Degradation Rate and SiO <sub>2</sub> /Si Micro-roughness. ECS Transactions, 2009, 25, 371-378.	0.5	3
45	Low R <sub>ons</sub> in 3kV 4H-SiC LDMOSFET with MeV Implanted Buried P-Base Region. Materials Science Forum, 2015, 821-823, 769-772.	0.3	3
46	Ultrahigh-Temperature Oxidation of 4H-SiC(0001) and an Impact of Cooling Process on SiO <sub>2</sub> /SiC Interface Properties. Materials Science Forum, 2017, 897, 323-326.	0.3	3
47	Dipole scattering at the interface: The origin of low mobility observed in SiC MOSFETs. Journal of Applied Physics, 2022, 131, .	2.5	3
48	Sub-nm-Scale Depth Profiling of Nitrogen in NO- and N <sub>2</sub> -Annealed SiO <sub>2</sub> /4H-SiC(0001) Structures. Materials Science Forum, 0, 963, 226-229.	0.3	2
49	Free carrier density enhancement of 4H-SiC Si-face MOSFET by Ba diffusion process and NO passivation. Japanese Journal of Applied Physics, 2021, 60, SBBD08.	1.5	2
50	Accurate determination of threshold voltage shift during negative gate bias stress in 4H-SiC MOSFETs by fast on-the-fly method. Japanese Journal of Applied Physics, 2021, 60, 060901.	1.5	2
51	Evaluation of drain current decrease by AC gate bias stress in commercially available SiC MOSFETs. , 2017, , .		2
52	Impact of post-nitridation annealing in CO <sub>2</sub> ambient on threshold voltage stability in 4H-SiC metal-oxide-semiconductor field-effect transistors. Applied Physics Express, 2022, 15, 061003.	2.4	2
53	Comparative Study of Performance of SiC SJ-MOSFETs Formed by Multi-epitaxial Growth and Trench-filling Epitaxial Growth. , 2022, , .		2
54	Conduction Mechanism of Leakage Current in Thermal Oxide on 4H-SiC. Materials Science Forum, 2014, 778-780, 579-582.	0.3	1

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55	Investigation of reliability of NO nitrided SiC(1100) MOS devices. , 2022, , .		1
56	Deep-Level Transient Spectroscopy Characterization of Interface States in SiO <sub>2</sub> /4H-SiC Structures Close to the Conduction Band Edge. Materials Science Forum, 0, 778-780, 424-427.	0.3	0
57	Low <i>V<sub>F</sub></i> 4H-SiC N-i-P diodes using newly developed low-resistivity p-type substrates. Japanese Journal of Applied Physics, 2020, 59, SGGD14.	1.5	0
58	Variation of Chemical Vapor Deposited SiO <sub>2</sub> Density Due to Generation and Shrinkage of Open Space During Thermal Annealing. Japanese Journal of Applied Physics, 2012, 51, 021101.	1.5	0
59	Negative Bias Temperature Instability in 4H-SiC MOSFETs Investigated by On-the-fly Methods. , 2021, , .		0