Hirohisa Hirai

List of Publications by Year
in descending order

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20	190	9	13
papers	citations	h-index	g-index

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20	20	20	129
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dipole scattering at the interface: The origin of low mobility observed in SiC MOSFETs. Journal of Applied Physics, 2022, 131, .	2.5	3
2	Wafer-scale Fabrication of Vertical GaN p-n Diodes with Graded JTE Structures Using Multiple-zone Boron Implantation. , 2022, , .		2
3	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
4	A New JTE Technique for Vertical GaN Power Devices by Conductivity Control Using Boron Implantation into p-Type Layer. , 2021, , .		3
5	Crystal-orientation-dependent flatband voltage of non-polar GaN MOS interfaces investigated using trench sidewall capacitors. Applied Physics Letters, 2021, 119, .	3.3	3
6	1.2 kV GaN/SiC-based Hybrid High Electron Mobility Transistor with Non-destructive Breakdown. , 2021, , .		2
7	Difference in electron mobility at 4Hâ€“SiC/SiO2 interfaces with various crystal faces originating from effective-field-dependent scattering. Applied Physics Letters, 2020, 117, .	3.3	11
8	Electrically detected magnetic resonance study on interface defects at nitrided Si-face, <i>a</i>-face, and <i>m</i>-face 4H-SiC/SiO2 interfaces. Applied Physics Letters, 2020, 116, .	3.3	10
9	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
10	Mobility-limiting Coulomb scattering in nitrided 4H-SiC inversion channel on 1 1 Â¯ 00 m-face and 11 2 Â¯ 0 a-face characterized by Hall effect measurements. Applied Physics Letters, 2019, 115, 132106.	3.3	7
11	Low temperature wet-O2 annealing process for enhancement of inversion channel mobility and suppression of <i>V</i>fb instability on 4H-SiC (0001) Si-face. Applied Physics Letters, 2018, 113, .	3.3	18
12	Difference of near-interface strain in SiO2 between thermal oxides grown on 4H-SiC by dry-O2 oxidation and H2O oxidation characterized by infrared spectroscopy. Applied Physics Letters, 2017, 110, .	3.3	27
13	Investigation of origins of the critically different MOS interface characteristics between dry-oxidized and wet-oxidized silicon carbide. Microelectronic Engineering, 2017, 178, 186-189.	2.4	10
14	Difference of Near-Interface SiO2Structures between O2-Oxidation and H2O-Oxidation of 4H-SiC (0001) and Its Impact on MOS Interface Characteristics. ECS Transactions, 2017, 80, 123-128.	0.5	3
15	Effects of high-temperature diluted-H₂ annealing on effective mobility of SiC MOSFETs estimated by split capacitanceâ€“voltage technique. Japanese Journal of Applied Physics, 2017, 56, 111302.	1.5	7
16	Effects of high-temperature diluted-H2annealing on effective mobility of 4H-SiC MOSFETs with thermally-grown SiO2. Japanese Journal of Applied Physics, 2016, 55, 04ER16.	1.5	3
17	Suppression of byproduct generation at 4H-SiC/SiO₂interface by the control of oxidation conditions characterized by infrared spectroscopy. Applied Physics Express, 2015, 8, 021401.	2.4	16
18	(Invited) Understanding of Growth Kinetics of Thermal Oxides on 4H-SiC (0001) for Control of MOS Characteristics. ECS Transactions, 2014, 61, 135-142.	0.5	14

#	Article	IF	Citations
19	FTIR-ATR Study on Near-Interface Structure of Thermal Oxides on 4H-SiC Substrates. ECS Transactions, 2013, 58, 317-323.	0.5	0
20	Structural difference between near interface oxides grown on Si and C faces of 4H-SiC characterized by infrared spectroscopy. Applied Physics Letters, 2013, 103, .	3.3	27