Marko Jak Tadjer

List of Publications by Year
in descending order

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96 papers	5,468 citations	136740 32 h-index	82410 72 g-index
96 all docs	96 docs citations	96 times ranked	3413 citing authors

#	Article	IF	Citations
1	A review of Ga2O3 materials, processing, and devices. Applied Physics Reviews, 2018, 5, .	5.5	1,816
2	Perspective: Ga2O3 for ultra-high power rectifiers and MOSFETS. Journal of Applied Physics, 2018, 124, .	1.1	416
3	Homoepitaxial growth of Î²-Ga2O3 thin films by low pressure chemical vapor deposition. Applied Physics Letters, 2016, 108, .	1.5	181
4	2300V Reverse Breakdown Voltage Ga₂O₃Schottky Rectifiers. ECS Journal of Solid State Science and Technology, 2018, 7, Q92-Q96.	0.9	169
5	Editors' Choiceâ€"Reviewâ€"Theory and Characterization of Doping and Defects in Î²-Ga₂O₃. ECS Journal of Solid State Science and Technology, 2019, 8, Q3187-Q3194.	0.9	148
6	Vertical Ga₂O₃Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baligaâ€™s Figure-of-Merit of 0.6 GW/cm². IEEE Electron Device Letters, 2019, 40, 1399-1402.	2.2	139
7	Vertical GaN Junction Barrier Schottky Rectifiers by Selective Ion Implantation. IEEE Electron Device Letters, 2017, 38, 1097-1100.	2.2	136
8	Editors' Choice Communicationâ€"A (001) Î²-Ga₂O₃MOSFET with +2.9 V Threshold Voltage and HfO₂Gate Dielectric. ECS Journal of Solid State Science and Technology, 2016, 5, P468-P470.	0.9	124
9	A review of band structure and material properties of transparent conducting and semiconducting oxides: Ga2O3, Al2O3, In2O3, ZnO, SnO2, CdO, NiO, CuO, and Sc2O3. Applied Physics Reviews, 2022, 9, .	5.5	124
10	Heteroepitaxy of N-type Î²-Ga2O3 thin films on sapphire substrate by low pressure chemical vapor deposition. Applied Physics Letters, 2016, 109, .	1.5	122
11	Structural, Optical, and Electrical Characterization of Monoclinic Î²-Ga2O3 Grown by MOVPE on Sapphire Substrates. Journal of Electronic Materials, 2016, 45, 2031-2037.	1.0	111
12	Reduced Self-Heating in AlGaN/GaN HEMTs Using Nanocrystalline Diamond Heat-Spreading Films. IEEE Electron Device Letters, 2012, 33, 23-25.	2.2	100
13	Quasi-Two-Dimensional h-BN/Î²-Ga₂O₃ Heterostructure Metalâ€“Insulatorâ€“Semiconductor Field-Effect Transistor. ACS Applied Materials & Interfaces, 2017, 9, 21322-21327.	4.0	92
14	Heterostructure WSe₂â^'Ga₂O₃ Junction Field-Effect Transistor for Low-Dimensional High-Power Electronics. ACS Applied Materials & Interfaces, 2018, 10, 29724-29729.	4.0	88
15	Thermal conductance across Î²-Ga2O3-diamond van der Waals heterogeneous interfaces. APL Materials, 2019, 7, .	2.2	87
16	Ga2O3 Schottky rectifiers with 1 ampere forward current, 650 V reverse breakdown and 26.5 MW.cm-2 figure-of-merit. AIP Advances, 2018, 8, .	0.6	73
17	Integration of polycrystalline Ga2O3 on diamond for thermal management. Applied Physics Letters, 2020, 116, .	1.5	68
18	Band Alignments of Atomic Layer Deposited ZrO₂and HfO₂High-k Dielectrics with (-201) Î²-Ga₂O₃. ECS Journal of Solid State Science and Technology, 2017, 6, Q3052-Q3055.	0.9	65

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19	GaN-On-Diamond HEMT Technology With T_{AVG} = 176Â°C at P_{DC,max} = 56 W/mm Measured by Transient Thermoreflectance Imaging. IEEE Electron Device Letters, 2019, 40, 881-884.	2.2	52
20	Vertical geometry 33.2 A, 4.8 MWâ€‰cm2 Ga2O3 field-plated Schottky rectifier arrays. Applied Physics Letters, 2019, 114, .	1.5	50
21	Effect of surface treatments on electrical properties of Î²-Ga2O3. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2018, 36, .	0.6	49
22	Tunable Thermal Energy Transport across Diamond Membranes and Diamondâ€“Si Interfaces by Nanoscale Graphoepitaxy. ACS Applied Materials & Interfaces, 2019, 11, 18517-18527.	4.0	49
23	Electrical characterization of ALD HfO2 high-k dielectrics on (2Â¯01) Î²-Ga2O3. Applied Physics Letters, 2018, 112, .	1.5	47
24	Atomic Layer Epitaxy AlN for Enhanced AlGaN/GaN HEMT Passivation. IEEE Electron Device Letters, 2013, 34, 1115-1117.	2.2	45
25	Engineering the Spectral and Spatial Dispersion of Thermal Emission via Polaritonâ€“Phonon Strong Coupling. Nano Letters, 2021, 21, 1831-1838.	4.5	44
26	Selective p-type Doping of GaN:Si by Mg Ion Implantation and Multicycle Rapid Thermal Annealing. ECS Journal of Solid State Science and Technology, 2016, 5, P124-P127.	0.9	43
27	High Performance ${eta}$ -Ga₂O₃ Nano-Membrane Field Effect Transistors on a High Thermal Conductivity Diamond Substrate. IEEE Journal of the Electron Devices Society, 2019, 7, 914-918.	1.2	42
28	Reverse Breakdown in Large Area, Field-Plated, Vertical Î²-Ga₂O₃Rectifiers. ECS Journal of Solid State Science and Technology, 2019, 8, Q3159-Q3164.	0.9	36
29	Dynamic Switching Characteristics of 1 A Forward Current $oldsymbol{eta}$ -Ga₂O₃ Rectifiers. IEEE Journal of the Electron Devices Society, 2019, 7, 57-61.	1.2	36
30	Thermionic Emission Analysis of TiN and Pt Schottky Contacts to Î²-Ga₂O₃. ECS Journal of Solid State Science and Technology, 2017, 6, P165-P168.	0.9	35
31	Structural transition and recovery of Ge implanted Î² -Ga2O3. Applied Physics Letters, 2020, 117, .	1.5	35
32	Narrowband Polaritonic Thermal Emitters Driven by Waste Heat. ACS Omega, 2020, 5, 10900-10908.	1.6	34
33	Vertical GaN Junction Barrier Schottky Diodes. ECS Journal of Solid State Science and Technology, 2017, 6, Q10-Q12.	0.9	33
34	High resistivity halide vapor phase homoepitaxial Î²-Ga2O3 films co-doped by silicon and nitrogen. Applied Physics Letters, 2018, 113, .	1.5	30
35	Effect of probe geometry during measurement of >100â€‰A Ga2O3 vertical rectifiers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	30
36	Damage Recovery and Dopant Diffusion in Si and Sn Ion Implanted Î²-Ga₂O₃. ECS Journal of Solid State Science and Technology, 2019, 8, Q3133-Q3139.	0.9	29

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37	Cheap Ultra-Wide Bandgap Power Electronics? Gallium Oxide May Hold the Answer. Electrochemical Society Interface, 2018, 27, 49-52.	0.3	28
38	A perspective on the electro-thermal co-design of ultra-wide bandgap lateral devices. Applied Physics Letters, 2021, 119, .	1.5	28
39	The role of annealing ambient on diffusion of implanted Si in Î²-Ga2O3. AIP Advances, 2019, 9, .	0.6	27
40	High-Resolution Thermoreflectance Imaging Investigation of Self-Heating in AlGaN/GaN HEMTs on Si, SiC, and Diamond Substrates. IEEE Transactions on Electron Devices, 2020, 67, 5415-5420.	1.6	24
41	Nanocrystalline diamond capped AlGaN/GaN high electron mobility transistors via a sacrificial gate process. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 893-897.	0.8	22
42	Diffusion of implanted Ge and Sn in Î²-Ga2O3. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	0.6	22
43	Band Alignment of Sc_xAl_{1â€“x}N/GaN Heterojunctions. ACS Applied Materials & Interfaces, 2020, 12, 52192-52200.	4.0	22
44	Characterization of Î²-Ga₂O₃ homoepitaxial films and MOSFETs grown by MOCVD at high growth rates. Journal Physics D: Applied Physics, 2021, 54, 034005.	1.3	22
45	Temperature and electric field induced metal-insulator transition in atomic layer deposited VO2 thin films. Solid-State Electronics, 2017, 136, 30-35.	0.8	21
46	Longitudinal phonon plasmon mode coupling in Î² -Ga2O3. Applied Physics Letters, 2019, 114, .	1.5	21
47	Electrothermal evaluation of thick GaN epitaxial layers and AlGaN/GaN high-electron-mobility transistors on large-area engineered substrates. Applied Physics Express, 2017, 10, 126501.	1.1	20
48	Switching Behavior and Forward Bias Degradation of 700V, 0.2A, Î²-Ga₂O₃Vertical Geometry Rectifiers. ECS Journal of Solid State Science and Technology, 2019, 8, Q3028-Q3033.	0.9	18
49	Implementation of a 900ÂV Switching Circuit for High Breakdown Voltage Î²-Ga₂O₃ Schottky Diodes. ECS Journal of Solid State Science and Technology, 2019, 8, Q3229-Q3234.	0.9	18
50	Structural and electronic properties of Si- and Sn-doped (âˆ’201) Î²-Ga₂O₃ annealed in nitrogen and oxygen atmospheres. Journal Physics D: Applied Physics, 2020, 53, 504002.	1.3	18
51	Ga2O3 Schottky barrier and heterojunction diodes for power electronics applications. , 2018, , .		18
52	Valence band offsets for CuI on (-201) bulk Ga2O3 and epitaxial (010) (Al0.14Ga0.86)2O3. Applied Physics Letters, 2018, 113, .	1.5	17
53	Forward bias degradation and thermal simulations of vertical geometry Î²-Ga2O3 Schottky rectifiers. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	0.6	17
54	Effect of thermal annealing for W/Î²-Ga2O3 Schottky diodes up to 600â€‰Â°C. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	0.6	17

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55	Two-step growth of Î²-Ga2O3 films on (100) diamond via low pressure chemical vapor deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	17
56	In Situ Observation of Î²-Ga₂O₃ Schottky Diode Failure Under Forward Biasing Condition. IEEE Transactions on Electron Devices, 2020, 67, 3056-3061.	1.6	16
57	Optical characterization and thermal properties of CVD diamond films for integration with power electronics. Solid-State Electronics, 2017, 136, 12-17.	0.8	15
58	(Invited) Fabrication and Characterization of Î²-Ga₂O₃Heterojunction Rectifiers. ECS Transactions, 2018, 85, 21-26.	0.3	15
59	Valence and Conduction Band Offsets for InN and III-Nitride Ternary Alloys on (â^'201) Bulk Î²-Ga₂O₃. ECS Journal of Solid State Science and Technology, 2019, 8, Q3154-Q3158.	0.9	15
60	Degradation of dynamic ON-resistance of AlGaN/GaN HEMTs under proton irradiation. , 2013, , .		14
61	Electrothermal Evaluation of AlGaN/GaN Membrane High Electron Mobility Transistors by Transient Thermoreflectance. IEEE Journal of the Electron Devices Society, 2018, 6, 922-930.	1.2	14
62	Design of Ga2O3 modulation doped field effect transistors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	13
63	Vertical Î²-Ga₂O₃Schottky rectifiers with 750 V reverse breakdown voltage at 600 K. Journal Physics D: Applied Physics, 2021, 54, 305103.	1.3	13
64	Band Alignment of Atomic Layer Deposited SiO2 and Al2O3 on (AlxGa1-x)2O3 for x = 0.2-0.65. ECS Journal of Solid State Science and Technology, 2019, 8, P351-P356.	0.9	12
65	Temperature dependent performance of ITO Schottky contacts on Î²-Ga2O3. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	12
66	Demonstration of CuI as a Pâ€“N heterojunction toÎ²-Ga₂O₃. Applied Physics Express, 2019, 12, 104005.	1.1	11
67	A Tri-Layer PECVD SiN Passivation Process for Improved AlGaN/GaN HEMT Performance. ECS Journal of Solid State Science and Technology, 2017, 6, P58-P61.	0.9	10
68	Asymmetrical Contact Geometry to Reduce Forward-Bias Degradation in Î²-Ga2O3 Rectifiers. ECS Journal of Solid State Science and Technology, 2020, 9, 035007.	0.9	10
69	Delta-doped Î²-(AlxGa1â^'x)2O3/Ga2O3 heterostructure field-effect transistors by ozone molecular beam epitaxy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	10
70	Defect Characterization of Multicycle Rapid Thermal Annealing Processed p-GaN for Vertical Power Devices. ECS Journal of Solid State Science and Technology, 2019, 8, P70-P76.	0.9	9
71	Long-wavelength dielectric properties and infrared active optical phonon modes of molecular beam epitaxy ScxAl1â^'xN determined by infrared spectroscopic ellipsometry. Applied Physics Letters, 2020, 117, 232107.	1.5	8
72	Thermoreflectance Temperature Mapping of Ga2O3 Schottky Barrier Diodes. ECS Transactions, 2019, 89, 3-7.	0.3	7

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73	Multi-frequency coherent emission from superstructure thermal emitters. Applied Physics Letters, 2021, 118, .	1.5	7
74	Band Offsets of Insulating & Semiconducting Oxides on (Al_xGa_{1-x})O₃. ECS Transactions, 2019, 92, 79-88.	0.3	6
75	Effect of Annealing on the Band Alignment of ALD SiO₂ on (Al_xGa_{1-x})₂O₃ for x = 0.2 - 0.65. ECS Journal of Solid State Science and Technology, 2019, 8, P751-P756.	0.9	6
76	In Situ Transmission Electron Microscopy Observations of Forward Bias Degradation of Vertical Geometry Î²-Ga₂O₃ Rectifiers. ECS Journal of Solid State Science and Technology, 2020, 9, 055008.	0.9	6
77	Changes in band alignment during annealing at 600â€‰Â°C of ALD Al2O3 on (InxGa1â€‰â^'â€‰x)2O3 for xâ€‰=â€‰0.25â€“0.7 Journal of Applied Physics, 2020, 127, 105701.	1.1	6
78	Steady-state methods for measuring in-plane thermal conductivity of thin films for heat spreading applications. Review of Scientific Instruments, 2021, 92, 044907.	0.6	6
79	Design and implementation of floating field ring edge termination on vertical geometry Î²-Ga2O3 rectifiers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 063414.	0.9	6
80	Collective Phononâ€“Polaritonic Modes in Silicon Carbide Subarrays. ACS Nano, 2022, 16, 963-973.	7.3	6
81	Band offset determination for amorphous Al2O3 deposited on bulk AlN and atomic-layer epitaxial AlN on sapphire. Applied Physics Letters, 2020, 117, 182103.	1.5	5
82	Simultaneous Evaluation of Heat Capacity and In-plane Thermal Conductivity of Nanocrystalline Diamond Thin Films. Nanoscale and Microscale Thermophysical Engineering, 2021, 25, 166-178.	1.4	5
83	Full 3D Thermal Simulation of GaN HEMT using Ultra-Fast Self-Adaptive Computations Driven by Experimentally Determined Thermal Maps. , 2018, , .		4
84	Lateral GaN JFET Devices on 200 mm Engineered Substrates for Power Switching Applications. , 2018, , .		4
85	Lateral GaN JFET Devices on Large Area Engineered Substrates. ECS Journal of Solid State Science and Technology, 2019, 8, Q226-Q229.	0.9	4
86	Ohmic contacts to gallium oxide. , 2019, , 211-230.		4
87	Effects of Downstream Plasma Exposure on Î²-Ga₂O₃ Rectifiers. ECS Journal of Solid State Science and Technology, 2021, 10, 065005.	0.9	4
88	Hexagonal boron nitride particles for determining the thermal conductivity of diamond films based on near-ultraviolet micro-Raman mapping. Journal Physics D: Applied Physics, 2017, 50, 24LT01.	1.3	3
89	Quantifying substrate removal induced electrothermal degradation in AlGaN/GaN HEMTs. , 2017, , .		3
90	Assessment of the (010) Î²-Ga2O3 surface and substrate specification. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, 013408.	0.9	3

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91	Phonon Properties. Springer Series in Materials Science, 2020, , 501-534.	0.4	1
92	Vertical GaN junction barrier schottky diodes by Mg implantation and activation annealing. , 2016, , .		0
93	Annealing Effects on the Band Alignment of ALD SiO₂ on (In_xGa_{1â^'x})₂O₃ for x = 0.25â€“0.74. ECS Journal of Solid State Science and Technology, 2020, 9, 045001.	0.9	0
94	Influence of oxygen partial pressure on properties of monoclinic Ga2O3 deposited on sapphire substrates. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, 033414.	0.9	0
95	Thermal effects in Ga2O3 rectifiers and MOSFETs borrowing from GaN. , 2022, , 441-467.		0
96	Reduced-stress nanocrystalline diamond films for heat spreading in electronic devices. , 2022, , 275-294.		0