

# Marko Jak Tadjer

## 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.

95  
papers

3,471  
citations

26  
h-index

57  
g-index

96  
ext. papers

4,385  
ext. citations

3.3  
avg, IF

5.85  
L-index

#	Paper	IF	Citations
95	A review of band structure and material properties of transparent conducting and semiconducting oxides: Ga <sub>2</sub> O <sub>3</sub> , Al <sub>2</sub> O <sub>3</sub> , In <sub>2</sub> O <sub>3</sub> , ZnO, SnO <sub>2</sub> , CdO, NiO, CuO, and Sc <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Reviews</i> , <b>2022</b> , 9, 011315	17.3	27
94	Thermal effects in Ga <sub>2</sub> O <sub>3</sub> rectifiers and MOSFETs borrowing from GaN <b>2022</b> , 441-467		
93	Reduced-stress nanocrystalline diamond films for heat spreading in electronic devices <b>2022</b> , 275-294		
92	A perspective on the electro-thermal co-design of ultra-wide bandgap lateral devices. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 170501	3.4	8
91	Characterization of $\Gamma$ -Ga <sub>2</sub> O <sub>3</sub> homoepitaxial films and MOSFETs grown by MOCVD at high growth rates. <i>Journal Physics D: Applied Physics</i> , <b>2021</b> , 54, 034005	3	15
90	Two-step growth of $\Gamma$ -Ga <sub>2</sub> O <sub>3</sub> films on (100) diamond via low pressure chemical vapor deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 023411	2.9	6
89	Multi-frequency coherent emission from superstructure thermal emitters. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 141102	3.4	2
88	Steady-state methods for measuring in-plane thermal conductivity of thin films for heat spreading applications. <i>Review of Scientific Instruments</i> , <b>2021</b> , 92, 044907	1.7	2
87	Vertical $\Gamma$ -Ga <sub>2</sub> O <sub>3</sub> Schottky rectifiers with 750 V reverse breakdown voltage at 600 K. <i>Journal Physics D: Applied Physics</i> , <b>2021</b> , 54, 305103	3	4
86	Influence of oxygen partial pressure on properties of monoclinic Ga <sub>2</sub> O <sub>3</sub> deposited on sapphire substrates. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 033414	2.9	
85	Delta-doped $\Gamma$ -(Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> /Ga <sub>2</sub> O <sub>3</sub> heterostructure field-effect transistors by ozone molecular beam epitaxy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 033402	2.9	2
84	Engineering the Spectral and Spatial Dispersion of Thermal Emission via Polariton-Phonon Strong Coupling. <i>Nano Letters</i> , <b>2021</b> , 21, 1831-1838	11.5	16
83	Design of Ga <sub>2</sub> O <sub>3</sub> modulation doped field effect transistors. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 023412	2.9	4
82	Temperature dependent performance of ITO Schottky contacts on $\Gamma$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 053405	2.9	6
81	Assessment of the (010) $\Gamma$ -Ga <sub>2</sub> O <sub>3</sub> surface and substrate specification. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 013408	2.9	2
80	Effect of probe geometry during measurement of >100 A Ga <sub>2</sub> O <sub>3</sub> vertical rectifiers. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2021</b> , 39, 013406	2.9	11
79	Collective Phonon-Polaritonic Modes in Silicon Carbide Subarrays.. <i>ACS Nano</i> , <b>2021</b> ,	16.7	4

78	Band Alignment of ScAlN/GaN Heterojunctions. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 52192-52200	5.3	2009
77	Band offset determination for amorphous Al <sub>2</sub> O <sub>3</sub> deposited on bulk AlN and atomic-layer epitaxial AlN on sapphire. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 182103	3.4	1
76	High-Resolution Thermoreflectance Imaging Investigation of Self-Heating in AlGaIn/GaN HEMTs on Si, SiC, and Diamond Substrates. <i>IEEE Transactions on Electron Devices</i> , <b>2020</b> , 67, 5415-5420	2.9	8
75	Narrowband Polaritonic Thermal Emitters Driven by Waste Heat. <i>ACS Omega</i> , <b>2020</b> , 5, 10900-10908	3.9	16
74	In Situ Transmission Electron Microscopy Observations of Forward Bias Degradation of Vertical Geometry $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> , <b>2020</b> , 9, 055008	2	3
73	Annealing Effects on the Band Alignment of ALD SiO <sub>2</sub> on (In <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> for x = 0.25-0.74. <i>ECS Journal of Solid State Science and Technology</i> , <b>2020</b> , 9, 045001	2	
72	Asymmetrical Contact Geometry to Reduce Forward-Bias Degradation in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> , <b>2020</b> , 9, 035007	2	5
71	Changes in band alignment during annealing at 600 °C of ALD Al <sub>2</sub> O <sub>3</sub> on (In <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> for x = 0.25-0.74. <i>Journal of Applied Physics</i> , <b>2020</b> , 127, 105701	2.5	3
70	In Situ Observation of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Schottky Diode Failure Under Forward Biasing Condition. <i>IEEE Transactions on Electron Devices</i> , <b>2020</b> , 67, 3056-3061	2.9	7
69	Integration of polycrystalline Ga <sub>2</sub> O <sub>3</sub> on diamond for thermal management. <i>Applied Physics Letters</i> , <b>2020</b> , 116, 062105	3.4	42
68	Phonon Properties. <i>Springer Series in Materials Science</i> , <b>2020</b> , 501-534	0.9	1
67	Design and implementation of floating field ring edge termination on vertical geometry $\beta$ -Ga <sub>2</sub> O <sub>3</sub> rectifiers. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2020</b> , 38, 063414	2.9	1
66	Long-wavelength dielectric properties and infrared active optical phonon modes of molecular beam epitaxy Sc <sub>x</sub> Al <sub>1-x</sub> N determined by infrared spectroscopic ellipsometry. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 232107	3.4	6
65	Structural and electronic properties of Si- and Sn-doped (001) $\beta$ -Ga <sub>2</sub> O <sub>3</sub> annealed in nitrogen and oxygen atmospheres. <i>Journal Physics D: Applied Physics</i> , <b>2020</b> , 53, 504002	3	10
64	Structural transition and recovery of Ge implanted $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2020</b> , 117, 152101	3.4	18
63	Forward bias degradation and thermal simulations of vertical geometry $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Schottky rectifiers. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2019</b> , 37, 061205	1.3	11
62	Band Offsets of Insulating & Semiconducting Oxides on (Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> . <i>ECS Transactions</i> , <b>2019</b> , 92, 79-88	1	5
61	High Performance $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Nano-Membrane Field Effect Transistors on a High Thermal Conductivity Diamond Substrate. <i>IEEE Journal of the Electron Devices Society</i> , <b>2019</b> , 7, 914-918	2.3	24

60	Diffusion of implanted Ge and Sn in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2019</b> , 37, 051204	1.3	16
59	Effect of thermal annealing for W/ $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Schottky diodes up to 600 °C. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2019</b> , 37, 061201	1.3	10
58	Switching Behavior and Forward Bias Degradation of 700V, 0.2A, $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Vertical Geometry Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3028-Q3033	2	12
57	Implementation of a 900V Switching Circuit for High Breakdown Voltage $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Schottky Diodes. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3229-Q3234	2	7
56	Vertical geometry 33.2 A, 4.8 MW cm <sup>2</sup> Ga <sub>2</sub> O <sub>3</sub> field-plated Schottky rectifier arrays. <i>Applied Physics Letters</i> , <b>2019</b> , 114, 232106	3.4	26
55	Thermoreflectance Temperature Mapping of Ga <sub>2</sub> O <sub>3</sub> Schottky Barrier Diodes. <i>ECS Transactions</i> , <b>2019</b> , 89, 3-7	1	3
54	GaN-On-Diamond HEMT Technology With TAVG = 176 °C at PDC, max = 56 W/mm Measured by Transient Thermoreflectance Imaging. <i>IEEE Electron Device Letters</i> , <b>2019</b> , 40, 881-884	4.4	28
53	Tunable Thermal Energy Transport across Diamond Membranes and Diamond-Si Interfaces by Nanoscale Graphoepitaxy. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 18517-18527	9.5	30
52	Damage Recovery and Dopant Diffusion in Si and Sn Ion Implanted $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3133-Q3139	2	20
51	Reverse Breakdown in Large Area, Field-Plated, Vertical $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3159-Q3164	2	16
50	Longitudinal phonon plasmon mode coupling in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2019</b> , 114, 102102	3.4	16
49	Valence and Conduction Band Offsets for InN and III-Nitride Ternary Alloys on (001) Bulk $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3154-Q3158	2	9
48	Thermal conductance across $\beta$ -Ga <sub>2</sub> O <sub>3</sub> -diamond van der Waals heterogeneous interfaces. <i>APL Materials</i> , <b>2019</b> , 7, 031118	5.7	63
47	Editors' Choice Review Theory and Characterization of Doping and Defects in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3187-Q3194	2	89
46	Vertical Ga <sub>2</sub> O <sub>3</sub> Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baliga Figure-of-Merit of 0.6 GW/cm <sup>2</sup> . <i>IEEE Electron Device Letters</i> , <b>2019</b> , 40, 1399-1402	4.4	84
45	The role of annealing ambient on diffusion of implanted Si in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>AIP Advances</i> , <b>2019</b> , 9, 085111	1.5	18
44	Band Alignment of Atomic Layer Deposited SiO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub> on (Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> for x = 0.2-0.65. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, P351-P356	2	8
43	Demonstration of CuI as a p-n heterojunction to $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Express</i> , <b>2019</b> , 12, 104005	2.4	4

42	Defect Characterization of Multicycle Rapid Thermal Annealing Processed p-GaN for Vertical Power Devices. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, P70-P76	2	6
41	Effect of Annealing on the Band Alignment of ALD SiO <sub>2</sub> on (Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> for x = 0.2 - 0.65. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, P751-P756	2	4
40	Lateral GaN JFET Devices on Large Area Engineered Substrates. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q226-Q229	2	2
39	Dynamic Switching Characteristics of 1 A Forward Current $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Rectifiers. <i>IEEE Journal of the Electron Devices Society</i> , <b>2019</b> , 7, 57-61	2.3	20
38	Ohmic contacts to gallium oxide <b>2019</b> , 211-230		4
37	Electrical characterization of ALD HfO <sub>2</sub> high-k dielectrics on (2001) Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2018</b> , 112, 042107	3.4	38
36	A review of Ga <sub>2</sub> O <sub>3</sub> materials, processing, and devices. <i>Applied Physics Reviews</i> , <b>2018</b> , 5, 011301	17.3	1114
35	(Invited) Fabrication and Characterization of Ga <sub>2</sub> O <sub>3</sub> Heterojunction Rectifiers. <i>ECS Transactions</i> , <b>2018</b> , 85, 21-26	1	9
34	Electrothermal Evaluation of AlGa <sub>N</sub> /Ga <sub>N</sub> Membrane High Electron Mobility Transistors by Transient Thermoreflectance. <i>IEEE Journal of the Electron Devices Society</i> , <b>2018</b> , 6, 922-930	2.3	7
33	Heterostructure WSe-GaO Junction Field-Effect Transistor for Low-Dimensional High-Power Electronics. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 29724-29729	9.5	60
32	Ga <sub>2</sub> O <sub>3</sub> Schottky rectifiers with 1 ampere forward current, 650 V reverse breakdown and 26.5 MW.cm <sup>-2</sup> figure-of-merit. <i>AIP Advances</i> , <b>2018</b> , 8, 055026	1.5	51
31	Ga <sub>2</sub> O <sub>3</sub> Schottky barrier and heterojunction diodes for power electronics applications <b>2018</b> ,		17
30	Full 3D Thermal Simulation of Ga <sub>N</sub> HEMT using Ultra-Fast Self-Adaptive Computations Driven by Experimentally Determined Thermal Maps <b>2018</b> ,		2
29	High resistivity halide vapor phase homoepitaxial Ga <sub>2</sub> O <sub>3</sub> films co-doped by silicon and nitrogen. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 192102	3.4	27
28	Cheap Ultra-Wide Bandgap Power Electronics? Gallium Oxide May Hold the Answer. <i>Electrochemical Society Interface</i> , <b>2018</b> , 27, 49-52	3.6	18
27	Perspective: Ga <sub>2</sub> O <sub>3</sub> for ultra-high power rectifiers and MOSFETS. <i>Journal of Applied Physics</i> , <b>2018</b> , 124, 220901	2.5	245
26	Lateral GaN JFET Devices on 200 mm Engineered Substrates for Power Switching Applications <b>2018</b> ,		3
25	Effect of surface treatments on electrical properties of Ga <sub>2</sub> O <sub>3</sub> . <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2018</b> , 36, 061201	1.3	30

24	Valence band offsets for CuI on (-201) bulk Ga <sub>2</sub> O <sub>3</sub> and epitaxial (010) (Al <sub>0.14</sub> Ga <sub>0.86</sub> ) <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2018</b> , 113, 182101	3.4	12
23	2300V Reverse Breakdown Voltage Ga <sub>2</sub> O <sub>3</sub> Schottky Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> , <b>2018</b> , 7, Q92-Q96	2	116
22	A Tri-Layer PECVD SiN Passivation Process for Improved AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT Performance. <i>ECS Journal of Solid State Science and Technology</i> , <b>2017</b> , 6, P58-P61	2	9
21	Thermionic Emission Analysis of TiN and Pt Schottky Contacts to $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2017</b> , 6, P165-P168	2	31
20	Hexagonal boron nitride particles for determining the thermal conductivity of diamond films based on near-ultraviolet micro-Raman mapping. <i>Journal Physics D: Applied Physics</i> , <b>2017</b> , 50, 24LT01	3	3
19	Quasi-Two-Dimensional h-BN/ $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Heterostructure Metal-Insulator-Semiconductor Field-Effect Transistor. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 21322-21327	9.5	71
18	Vertical Ga <sub>N</sub> Junction Barrier Schottky Diodes. <i>ECS Journal of Solid State Science and Technology</i> , <b>2017</b> , 6, Q10-Q12	2	18
17	Band Alignments of Atomic Layer Deposited ZrO <sub>2</sub> and HfO <sub>2</sub> High-k Dielectrics with (-201) $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2017</b> , 6, Q3052-Q3055	2	57
16	Quantifying substrate removal induced electrothermal degradation in AlGa <sub>N</sub> /Ga <sub>N</sub> HEMTs <b>2017</b> ,		3
15	Electrothermal evaluation of thick Ga <sub>N</sub> epitaxial layers and AlGa <sub>N</sub> /Ga <sub>N</sub> high-electron-mobility transistors on large-area engineered substrates. <i>Applied Physics Express</i> , <b>2017</b> , 10, 126501	2.4	10
14	Optical characterization and thermal properties of CVD diamond films for integration with power electronics. <i>Solid-State Electronics</i> , <b>2017</b> , 136, 12-17	1.7	13
13	Temperature and electric field induced metal-insulator transition in atomic layer deposited VO <sub>2</sub> thin films. <i>Solid-State Electronics</i> , <b>2017</b> , 136, 30-35	1.7	13
12	Vertical Ga <sub>N</sub> Junction Barrier Schottky Rectifiers by Selective Ion Implantation. <i>IEEE Electron Device Letters</i> , <b>2017</b> , 38, 1097-1100	4.4	96
11	Nanocrystalline diamond capped AlGa <sub>N</sub> /Ga <sub>N</sub> high electron mobility transistors via a sacrificial gate process. <i>Physica Status Solidi (A) Applications and Materials Science</i> , <b>2016</b> , 213, 893-897	1.6	17
10	Selective p-type Doping of Ga <sub>N</sub> :Si by Mg Ion Implantation and Multicycle Rapid Thermal Annealing. <i>ECS Journal of Solid State Science and Technology</i> , <b>2016</b> , 5, P124-P127	2	32
9	Structural, Optical, and Electrical Characterization of Monoclinic $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Grown by MOVPE on Sapphire Substrates. <i>Journal of Electronic Materials</i> , <b>2016</b> , 45, 2031-2037	1.9	92
8	Homoepitaxial growth of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> thin films by low pressure chemical vapor deposition. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 182105	3.4	145
7	Heteroepitaxy of N-type $\beta$ -Ga <sub>2</sub> O <sub>3</sub> thin films on sapphire substrate by low pressure chemical vapor deposition. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 132103	3.4	96

6	Editors' Choice Communication (001) $\text{AlGaIn}/\text{GaInAs}$ MOSFET with +2.9 V Threshold Voltage and $\text{HfO}_2$ Gate Dielectric. <i>ECS Journal of Solid State Science and Technology</i> , <b>2016</b> , 5, P468-P470	2	106
5	Atomic Layer Epitaxy AlN for Enhanced AlGaIn/GaN HEMT Passivation. <i>IEEE Electron Device Letters</i> , <b>2013</b> , 34, 1115-1117	4.4	39
4	Degradation of dynamic ON-resistance of AlGaIn/GaN HEMTs under proton irradiation <b>2013</b> ,		12
3	. <i>IEEE Electron Device Letters</i> , <b>2012</b> , 33, 23-25	4.4	83
2	Simultaneous Evaluation of Heat Capacity and In-plane Thermal Conductivity of Nanocrystalline Diamond Thin Films. <i>Nanoscale and Microscale Thermophysical Engineering</i> , 1-13	3.7	1
1	Effects of Downstream Plasma Exposure on $\text{AlGaIn}$ Rectifiers. <i>ECS Journal of Solid State Science and Technology</i> ,	2	1