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High-voltage field effect transistors with wide-bandgap  $\alpha$ -Ga<sub>2</sub>O<sub>3</sub> nanomembranes

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Applied Physics Letters, 2014, 104, 203111.

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#	Paper	IF	Citations
264	Carbon as a Shallow Donor in Transparent Conducting Oxides. <b>2014</b> , 2,		42
263	On the bulk $\beta$ -Ga <sub>2</sub> O <sub>3</sub> single crystals grown by the Czochralski method. <b>2014</b> , 404, 184-191		415
262	(In <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> alloys for transparent electronics. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	68
261	MgGa <sub>2</sub> O <sub>4</sub> as a new wide bandgap transparent semiconducting oxide: growth and properties of bulk single crystals. <b>2015</b> , 212, 1455-1460		37
260	Brillouin zone and band structure of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <b>2015</b> , 252, 828-832		176
259	Anisotropic thermal conductivity in single crystal $\beta$ -gallium oxide. <i>Applied Physics Letters</i> , <b>2015</b> , 106, 111909	3.4	234
258	Spectroscopic and electrical calculation of band alignment between atomic layer deposited SiO <sub>2</sub> and $\beta$ -Ga <sub>2</sub> O <sub>3</sub> (201). <i>Applied Physics Letters</i> , <b>2015</b> , 106, 102107	3.4	64
257	Growth Measures to Achieve Bulk Single Crystals of Transparent Semiconducting and Conducting Oxides. <b>2015</b> , 209-240		3
256	A Gallium Oxide-Graphene Oxide Hybrid Composite for Enhanced Photocatalytic Reaction. <i>Nanomaterials</i> , <b>2016</b> , 6,	5.4	8
255	Variation of Band Gap and Lattice Parameters of (Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> Powder Produced by Solution Combustion Synthesis. <i>Journal of the American Ceramic Society</i> , <b>2016</b> , 99, 2467-2473	3.8	73
254	Surface termination structure of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> film grown by mist chemical vapor deposition. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 251602	3.4	20
253	Evolution of planar defects during homoepitaxial growth of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> layers on (100) substrates: a quantitative model. <i>Journal of Applied Physics</i> , <b>2016</b> , 120, 225308	2.5	51
252	Intrinsic electron mobility limits in $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2016</b> , 109, 212101	3.4	223
251	First-principles calculations of the near-edge optical properties of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2016</b> , 109, 212104	3.4	51
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248	Characterization of channel temperature in Ga <sub>2</sub> O <sub>3</sub> metal-oxide-semiconductor field-effect transistors by electrical measurements and thermal modeling. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 193503	3.4	61

247	Deuterium incorporation and diffusivity in plasma-exposed bulk Ga <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Letters</i> , <b>2016</b> , 109, 242108	3-4	14
246	Editors' Choice Communication (001) E-Ga <sub>2</sub> O <sub>3</sub> MOSFET with +2.9 V Threshold Voltage and HfO <sub>2</sub> Gate Dielectric. <i>ECS Journal of Solid State Science and Technology</i> , <b>2016</b> , 5, P468-P470	2	106
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242	MgZnO High Voltage Thin Film Transistors on Glass for Inverters in Building Integrated Photovoltaics. <b>2016</b> , 6, 34169		21
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231	1.5 MeV electron irradiation damage in E-Ga <sub>2</sub> O <sub>3</sub> vertical rectifiers. <b>2017</b> , 35, 031208		41
230	Band alignment of Al <sub>2</sub> O <sub>3</sub> with (001) E-Ga <sub>2</sub> O <sub>3</sub> . <b>2017</b> , 142, 52-57		47

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225	Transferrable single crystalline 4H-SiC nanomembranes. <b>2017</b> , 5, 264-268		26
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223	Delta-doped $\beta$ -gallium oxide field-effect transistor. <i>Applied Physics Express</i> , <b>2017</b> , 10, 051102	2.4	94
222	High responsivity in molecular beam epitaxy grown EGa <sub>2</sub> O <sub>3</sub> metal semiconductor metal solar blind deep-UV photodetector. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 221107	3.4	124
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175	Formation of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> nanofibers of sub-50 nm diameter synthesized by electrospinning method. <b>2018</b> , 645, 358-362		14
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140	Controlling the threshold voltage of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> field-effect transistors via remote fluorine plasma treatment. <b>2019</b> , 7, 8855-8860	13



139	Influence of annealing on the structural and optical properties of gallium oxide films deposited on c-sapphire substrate. <b>2019</b> , 167, 6-9		16
138	High Performance Ga <sub>2</sub> O <sub>3</sub> Metal-Oxide-Semiconductor Field-Effect Transistors on an AlN/Si Substrate. <b>2019</b> , 7, 596-600		7
137	Demonstration of mechanically exfoliated EGa <sub>2</sub> O <sub>3</sub> /GaN p-n heterojunction. <i>Applied Physics Letters</i> , <b>2019</b> , 114, 162103	3-4	23
136	Surface depletion effect on negative bias stress instability of EGa <sub>2</sub> O <sub>3</sub> (100) nanomembrane FETs. <b>2019</b> , 58, SBBD01		4
135	Effect of Al <sub>2</sub> O <sub>3</sub> Passivation on Electrical Properties of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Field-Effect Transistor. <b>2019</b> , 7, 512-516		8
134	Electrical Properties of Thermally Annealed EGa <sub>2</sub> O <sub>3</sub> Metal-Semiconductor Field-Effect Transistors with Pt/Au Schottky Contacts. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3122-Q3125	<sup>2</sup>	3
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132	Near unity ideality factor for sidewall Schottky contacts on un-intentionally doped EGa <sub>2</sub> O <sub>3</sub> . <i>Applied Physics Express</i> , <b>2019</b> , 12, 044005	2-4	17
131	The Structural and Photoelectrical Properties of Gallium Oxide Thin Film Grown by Radio Frequency Magnetron Sputtering. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3086-Q3090	2	32
130	Nanowire-Seeded Growth of Single-Crystalline (010) EGa <sub>2</sub> O Nanosheets with High Field-Effect Electron Mobility and On/Off Current Ratio. <b>2019</b> , 15, e1900580		20
129	Review of gallium oxide based field-effect transistors and Schottky barrier diodes. <i>Chinese Physics B</i> , <b>2019</b> , 28, 017105	1-2	39
128	Thermal conductance across EGa <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
127	Field-plate engineering for high breakdown voltage EGaO nanolayer field-effect transistors.. <b>2019</b> , 9, 9678-9683		17
126	Recent advances in Ga-based solar-blind photodetectors. <i>Chinese Physics B</i> , <b>2019</b> , 28, 028502	1-2	3
125	Beta gallium oxide (EGa <sub>2</sub> O <sub>3</sub> ) nanoelectromechanical transducer for dual-modality solar-blind ultraviolet light detection. <i>APL Materials</i> , <b>2019</b> , 7, 022523	5-7	17
124	Review RF Sputtered Films of Ga <sub>2</sub> O <sub>3</sub> . <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3064-Q3078		41
123	Recent Progress in Gallium Oxide and Diamond Based High Power and High-Frequency Electronics. <b>2019</b> , 28, 1940004		6
122	First-Principles Exploration of Two-Dimensional Transition Metal Dichalcogenides Based on Fe, Co, Ni, and Cu Groups and Their van der Waals Heterostructures. <b>2019</b> , 2, 8491-8501		12

121	Enhanced Photocatalytic Activity of Electrospun $\text{ZnGa}_2\text{O}_3$ Nanofibers via In-Situ Si Doping Using Tetraethyl Orthosilicate. <b>2019</b> , 9, 1005		7
120	Bulk and few-layer $\text{MnPS}_3$ : a new candidate for field effect transistors and UV photodetectors. <b>2019</b> , 7, 324-329		52
119	MOCVD grown epitaxial $\text{ZnGa}_2\text{O}_3$ thin film with an electron mobility of 176 $\text{cm}^2/\text{V s}$ at room temperature. <i>APL Materials</i> , <b>2019</b> , 7, 022506	5.7	115
118	Mechanism Behind the Easy Exfoliation of $\text{Ga}_2\text{O}_3$ Ultra-Thin Film Along (100) Surface. <b>2019</b> , 13, 1800554		25
117	A review of the most recent progresses of state-of-art gallium oxide power devices. <b>2019</b> , 40, 011803		38
116	Defect States Determining Dynamic Trapping-Detrapping in $\text{ZnGa}_2\text{O}_3$ Field-Effect Transistors. <i>ECS Journal of Solid State Science and Technology</i> , <b>2019</b> , 8, Q3013-Q3018	2	19
115	Structural and optical properties of pulsed-laser deposited crystalline $\text{ZnGa}_2\text{O}_3$ thin films on silicon. <i>Semiconductor Science and Technology</i> , <b>2019</b> , 34, 035001	1.8	25
114	Band alignments of dielectrics on (101) $\text{ZnGa}_2\text{O}_3$ . <b>2019</b> , 287-311		2
113	$\text{Ga}_2\text{O}_3$ nanobelt devices. <b>2019</b> , 331-368		1
112	Gallium oxide. <b>2019</b> , 487-521		3
111	Quasi-two-dimensional $\text{ZnGa}_2\text{O}_3$ field effect transistors with large drain current density and low contact resistance via controlled formation of interfacial oxygen vacancies. <b>2019</b> , 12, 143-148		18
110	Progress of Ultra-Wide Bandgap $\text{Ga}_2\text{O}_3$ Semiconductor Materials in Power MOSFETs. <b>2020</b> , 35, 5157-5179		59
109	Lateral $\text{ZnGa}_2\text{O}_3$ field effect transistors. <i>Semiconductor Science and Technology</i> , <b>2020</b> , 35, 013002	1.8	38
108	Dual-field plated $\text{ZnGa}_2\text{O}_3$ nano-FETs with an off-state breakdown voltage exceeding 400 V. <b>2020</b> , 8, 2687-2692		5
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106	Scintillation Properties of $\beta\text{-Ga}_2\text{O}_3$ Single Crystal Excited by $\alpha\text{-Ray}$ . <b>2020</b> , 67, 400-404		6
105	Gallium oxide-based solar-blind ultraviolet photodetectors. <i>Semiconductor Science and Technology</i> , <b>2020</b> , 35, 023001	1.8	40
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93	. <b>2020</b> , 67, 3954-3959		12
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79	Fully transparent field-effect transistor with high drain current and on-off ratio. <i>APL Materials</i> , <b>2020</b> , 8, 011110	5-7	16
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73	Investigation of Nano-Gaps in Fractured $\text{AlGaInO}_3$ Nanomembranes Formed by Uniaxial Strain. <b>2021</b> , 7, 2000763		2
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56	Flexible and Stretchable Liquid Metal Electrodes Working at Sub-Zero Temperature and Their Applications. <i>Materials</i> , <b>2021</b> , 14,	3.5	1
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42	Field-Effect Transistors 5. <i>Springer Series in Materials Science</i> , <b>2020</b> , 639-660	0.9	
41	Field-Effect Transistors 3. <i>Springer Series in Materials Science</i> , <b>2020</b> , 609-621	0.9	
40	Field-Effect Transistors 4. <i>Springer Series in Materials Science</i> , <b>2020</b> , 623-638	0.9	
39	Electrical Properties 5. <i>Springer Series in Materials Science</i> , <b>2020</b> , 461-473	0.9	
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22	Alloyed $\beta$ -(Al <sub>x</sub> Ga <sub>1-x</sub> ) <sub>2</sub> O <sub>3</sub> bulk Czochralski single $\beta$ -(Al <sub>0.1</sub> Ga <sub>0.9</sub> ) <sub>2</sub> O <sub>3</sub> and polycrystals $\beta$ -(Al <sub>0.33</sub> Ga <sub>0.66</sub> ) <sub>2</sub> O <sub>3</sub> , $\beta$ -(Al <sub>0.5</sub> Ga <sub>0.5</sub> ) <sub>2</sub> O <sub>3</sub> , and property trends. <i>Journal of Applied Physics</i> , <b>2022</b> , 131, 155702	2.5	2
21	$\beta$ -Ga <sub>2</sub> O <sub>3</sub> nanowires: controlled growth, characterization, and deep-ultraviolet photodetection application. <i>Journal Physics D: Applied Physics</i> ,	3	1
20	Single $\beta$ -Ga <sub>2</sub> O <sub>3</sub> nanowire based lateral FinFET on Si. <i>Applied Physics Letters</i> , <b>2022</b> , 120, 153501	3.4	1
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17	Sapphire substrate induced effects on $\beta$ -Ga <sub>2</sub> O <sub>3</sub> thin films. <i>Journal of Materials Science: Materials in Electronics</i> , 1	2.1	0
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15	A Comprehensive Review on Recent Developments in Ohmic and Schottky Contacts on Ga <sub>2</sub> O <sub>3</sub> for Device Applications. <i>ACS Applied Electronic Materials</i> ,	4	3
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11	Measurements and numerical calculations of thermal conductivity to evaluate the quality of Gallium oxide thin films grown on sapphire and silicon carbide by molecular beam epitaxy. <b>2022</b> , 121, 042107		3
10	Temperature Dependence of Anisotropic Complex Conductivity of $\text{Ga}_2\text{O}_3$ .		o
9	Alternative alloy to increase bandgap in gallium Oxide, $\text{Sc}_{1-x}\text{Ga}_x\text{O}_3$ , and rare earth Stark luminescence. <b>2022</b> , 596, 126823		
8	Crystallization, Phase Stability, Microstructure, and Chemical Bonding in Ga <sub>2</sub> O <sub>3</sub> Nanofibers Made by Electrospinning. <b>2022</b> , 7, 32816-32826		o
7	BOLTZMANN TRANSPORT EQUATION FOR THERMAL TRANSPORT IN ELECTRONIC MATERIALS AND DEVICES. <b>2022</b> , 24, 131-172		o
6	State-of-the-Art $\text{Ga}_2\text{O}_3$ Field-Effect Transistors for Power Electronics.		o
5	Band offsets at the interfaces between $\text{Ga}_2\text{O}_3$ and Al <sub>2</sub> O <sub>3</sub> . <b>2023</b> , 7,		o
4	Analysis of single event effects by heavy ion irradiation of Ga <sub>2</sub> O <sub>3</sub> metal-oxide-semiconductor field-effect transistors. <b>2023</b> , 133, 085701		o
3	Scintillation Properties of Ga <sub>2</sub> O <sub>3</sub> Translucent Ceramics Annealed at Different Temperatures. <b>2023</b> ,		o
2	High-Performance Solar-Blind UV Phototransistors Based on ZnO/Ga <sub>2</sub> O <sub>3</sub> Heterojunction Channels. <b>2023</b> , 15, 18372-18378		o
1	Near-room temperature synthesis of Zn <sup>2+</sup> -doped $\text{Ga}_2\text{O}_3$ nanoparticles via direct oxidation of ZnGa alloy by ultrasound. <b>2023</b> , 131, 100-105		o