Ultrawide-Bandgap Semiconductors: Research Opportunities and Challenges

DOI: 10.1002/aelm.201600501
Advanced Electronic Materials, 2018, 4, 1600501.

Source: https://exaly.com/paper-pdf/69697604/citation-report.pdf
Version: 2024-04-27

#	Paper	IF	Citations
663	A survey of acceptor dopants for βGa2O3. **2018**, 33, 05LT02		93
662	On compensation in Si-doped AlN. **2018**, 112, 152101		71
661	A review of Ga2O3 materials, processing, and devices. **2018**, 5, 011301		1114
660	Progress Toward Diamond Power Field-Effect Transistors. **2018**, 215, 1800681		32
659	Evaluation and Selection of Materials for Particulate Matter MEMS Sensors by Using Hybrid MCDM Methods. **2018**, 10, 3451		9
658	Phonon mode contributions to thermal conductivity of pristine and defective βGaO. **2018**, 20, 29236-29242		11
657	Thermal characterization of gallium oxide Schottky barrier diodes. **2018**, 89, 114903		29
656	High resistivity halide vapor phase homoepitaxial βGa2O3 films co-doped by silicon and nitrogen. **2018**, 113, 192102		27
655	A Decade of Nonpolar and Semipolar III-Nitrides: A Review of Successes and Challenges. **2018**, 216, 1800628		32
654	Perspective: Ga2O3 for ultra-high power rectifiers and MOSFETS. **2018**, 124, 220901		245
653	Visible Light-Responsive Photocatalytic Activity of Boron Nitride Incorporated Composites. **2018**, 6, 440		27
652	at]Hard-switching reliability studies of 1200 V vertical GaN PiN diodes. **2018**, 8, 1413-1417		3
651	Acceptor doping of βGa2O3 by Mg and N ion implantations. **2018**, 113, 102103		93
650	βGa2O3 for wide-bandgap electronics and optoelectronics. **2018**, 33, 113001		169
649	Thermal conductivity of GaN single crystals: Influence of impurities incorporated in different growth processes. **2018**, 124, 105106		20
648	Defects responsible for charge carrier removal and correlation with deep level introduction in irradiated βGa2O3. **2018**, 113, 092102		46
647	AlInN for Vertical Power Electronic Devices. **2018**, 65, 4276-4281		9

646	Quantified hole concentration in AlGaN nanowires for high-performance ultraviolet emitters. **2018**, 10, 15980-15988	14
645	The influence of point defects on the thermal conductivity of AlN crystals. **2018**, 123, 185107	12
644	2300V Reverse Breakdown Voltage Ga2O3Schottky Rectifiers. **2018**, 7, Q92-Q96	116
643	Ultrahigh-yield growth of GaN via halogen-free vapor-phase epitaxy. **2018**, 11, 065502	7
642	Fundamental materials nature of diamond. **2018**, 191-217	
641	Assessment of phonon scattering-related mobility in Ga2O3. **2018**, 33, 105008	17
640	Temperature and Stress Metrology of Ultra-Wide Bandgap Ga2O3 Thin Films. **2018**,	0
639	An exploratory study of acidic ammonothermal growth in a TZM autoclave at high temperatures. **2018**, 499, 85-89	2
638	Self-powered ultraviolet photodetection realized by GaN/Si nanoheterostructure based on silicon nanoporous pillar array. **2018**, 767, 368-373	11
637	Diffusion length of non-equilibrium minority charge carriers in Ga2O3 measured by electron beam induced current. **2018**, 123, 185704	37
636	Eighteen mega-electron-volt alpha-particle damage in homoepitaxial Ga2O3 Schottky rectifiers. **2018**, 36, 031205	13
635	Doped Barrier Al0.65Ga0.35N/Al0.40Ga0.60N MOSHFET With SiO2 Gate-Insulator and Zr-Based Ohmic Contacts. **2018**, 39, 1568-1571	28
634	Properties of AlN single crystals doped with Beryllium via high temperature diffusion. **2018**, 113, 082104	10
633	Porosity-controlled multilayer TaC coatings prepared via wet powder process for multi-functional reactor components in GaN crystal growth system. **2018**, 44, 21284-21288	5
632	Ga2O3 Schottky rectifiers with 1 ampere forward current, 650 V reverse breakdown and 26.5 MW.cm-2 figure-of-merit. **2018**, 8, 055026	51
631	Thermal conductivity of single-crystalline AlN. **2018**, 11, 071001	27
630	Structure and vibrational properties of the dominant O-H center in Ga2O3. **2018**, 112, 232104	60
629	Twin-induced phase transition from Ga2O3 to Ga2O3 in Ga2O3 thin films. **2018**, 11, 061105	7

628	The electrification of energy: Long-term trends and opportunities. **2018**, 5, 1	14
627	Energetics and electronic structure of native point defects in □Ga2O3. **2019**, 12, 091001	12
626	Optimal Semiconductors for H and Ni Betavoltaics. **2019**, 9, 10892	21
625	Device-Level Thermal Management of Gallium Oxide Field-Effect Transistors. **2019**, 9, 2352-2365	47
624	Crystal Quality Improvement of □Ga2O3 Growth on Stripe Patterned Template via Epitaxial Lateral Overgrowth. **2019**, 19, 5105-5110	18
623	Progress in semiconductor □Ga2O3. **2019**, 263-345	0
622	Electrothermal performance limit of □Ga2O3 field-effect transistors. **2019**, 115, 173508	15
621	Mechanism of Si doping in plasma assisted MBE growth of □Ga2O3. **2019**, 115, 152106	26
620	Electric dipole effect in PdCoO/□GaO Schottky diodes for high-temperature operation. **2019**, 5, eaax5733	27
619	High Lateral Breakdown Voltage in Thin Channel AlGaN/GaN High Electron Mobility Transistors on AlN/Sapphire Templates. **2019**, 10,	16
618	Giant bulk photovoltaic effect in solar cell architectures with ultra-wide bandgap Ga2O3 transparent conducting electrodes. **2019**, 14, 100350	11
617	Ultra-wide bandgap AlGaN metal oxide semiconductor heterostructure field effect transistors with high-k ALD ZrO2 dielectric. **2019**, 34, 125001	10
616	Catalyst-Free Vapor□Solid Deposition Growth of □Ga2O3 Nanowires for DUV Photodetector and Image Sensor Application. **2019**, 7, 1901257	21
615	III-Nitride ultra-wide-bandgap electronic devices. **2019**, 102, 397-416	3
614	Deep acceptors and their diffusion in Ga2O3. **2019**, 7, 022519	84
613	Effects of nanoepitaxial lateral overgrowth on growth of □Ga2O3 by halide vapor phase epitaxy. **2019**, 115, 091605	12
612	Halides-Assisted Low-Temperature Synthesis of Hexagonal Boron Nitride Nanosheets. **2019**, 36, 1900278	1
611	Stable Operation of AlGaN/GaN HEMTs for 25 h at 400□C in air. **2019**, 7, 931-935	14

610	Solar-Blind Self-Powered Photodetector Using Solution-Processed Amorphous Core-Shell Gallium Oxide Nanoparticles. **2019**, 11, 38921-38928	16
609	Amorphous gallium oxide sulfide: A highly mismatched alloy. **2019**, 126, 105708	3
608	Stability and degradation of isolation and surface in Ga2O3 devices. **2019**, 100-101, 113453	4
607	Radiation damage effects in Ga2O3 materials and devices. **2019**, 7, 10-24	90
606	Highly Narrow-Band Polarization-Sensitive Solar-Blind Photodetectors Based on □GaO Single Crystals. **2019**, 11, 7131-7137	38
605	Influence of Post-Annealing on Properties of □Ga2O3 Epilayer Grown by Halide Vapor Phase Epitaxy. **2019**, 8, Q3024-Q3027	11
604	High quality 10.6 □m AlN grown on pyramidal patterned sapphire substrate by MOCVD. **2019**, 114, 042101	28
603	Review of the Recent Progress on GaN-Based Vertical Power Schottky Barrier Diodes (SBDs). **2019**, 8, 575	40
602	Resistive heater element made of highly durable TaC-coated graphite for high-temperature and highly corrosive processes: application to MOCVD GaN epitaxial growth. **2019**, 58, 075509	4
601	Fast growth of high quality AlN films on sapphire using a dislocation filtering layer for ultraviolet light-emitting diodes. **2019**, 21, 4072-4078	12
600	Will surface effects dominate in quasi-two-dimensional gallium oxide for electronic and photonic devices?. **2019**, 4, 1251-1255	8
599	High temperature performance of coaxial h-BN/CNT wires above 1,000 □C: Thermionic electron emission and thermally activated conductivity. **2019**, 12, 1855-1861	6
598	Atomic structure and band alignment at Al2O3/GaN, Sc2O3/GaN and La2O3/GaN interfaces: A first-principles study. **2019**, 216, 111039	9
597	Breakdown Characteristics of $beta$ -(Al0.22Ga0.78)2O3/Ga2O3 Field-Plated Modulation-Doped Field-Effect Transistors. **2019**, 40, 1241-1244	51
596	Donor□cceptor pair emission via defects with strong electron□honon coupling in heavily doped AlxGa1□N:Si layers with Al contentx> 0.5. **2019**, 58, SCCB27	3
595	Growth and thermal annealing for acceptor activation of p-type (Al)GaN epitaxial structures: Technological challenges and risks. **2019**, 488, 688-695	6
594	Bipolar charge transport in intrinsic SiC on p- and n-Si heterostructures prepared by a room temperature aerosol deposition process. **2019**, 45, 17556-17561	2
593	Normally-Off Ga2O3 MOSFETs With Unintentionally Nitrogen-Doped Channel Layer Grown by Plasma-Assisted Molecular Beam Epitaxy. **2019**, 40, 1064-1067	30

592	Electronic Properties of Ga2O3 Polymorphs. **2019**, 8, Q3226-Q3228		16
591	Demonstration of mechanically exfoliated Ga2O3/GaN p-n heterojunction. **2019**, 114, 162103		23
590	Band alignments of Ga2O3 with MgO, Al2O3 and MgAl2O4 measured by x-ray photoelectron spectroscopy. **2019**, 52, 295104		18
589	Effect of thermal annealing on properties of amorphous GaN/p-Si heterojunctions. **2019**, 6, 085904		1
588	Chemical bonding and band alignment at X2O3/GaN (X = Al, Sc) interfaces. **2019**, 114, 161601		20
587	Editors' ChoiceHydrogen Centers in Ga2O3: Infrared Spectroscopy and Density Functional Theory. **2019**, 8, Q3103-Q3110		43
586	Electrical Properties of Thermally Annealed Ga2O3Metal-Semiconductor Field-Effect Transistors with Pt/Au Schottky Contacts. **2019**, 8, Q3122-Q3125		3
585	Enhancement-mode AlGaN channel high electron mobility transistor enabled by p-AlGaN gate. **2019**, 37, 021208		12
584	Reverse Breakdown in Large Area, Field-Plated, Vertical Ga2O3Rectifiers. **2019**, 8, Q3159-Q3164		16
583	Static Dielectric Constant of Ga2O3 Perpendicular to the Principal Planes (100), (010), and (001). **2019**, 8, Q3083-Q3085		30
582	Wide band gap semiconductor technology: State-of-the-art. **2019**, 155, 65-75		16
581	All-carbon devices based on sp2-on-sp3 configuration. **2019**, 7, 030901		11
580	Structural analysis of cubic boron nitride (111) films heteroepitaxially grown on diamond (111) substrates. **2019**, 125, 115303		4
579	Energy-Efficient MetalInsulatorMetal-Semiconductor Field-Effect Transistors Based on 2D Carrier Gases. *Advanced Electronic Materials*, **2019**, 5, 1800832	6.4	26
578	Electronic transport properties in metal doped beta-Ga2O3: A first principles study. **2019**, 562, 124-130		14
577	Numerical simulation of UV LEDs with GaN and BGaN single quantum well. **2019**, 40, 032802		2
576	Review of gallium oxide based field-effect transistors and Schottky barrier diodes. **2019**, 28, 017105		39
575	Rutile GeO2: An ultrawide-band-gap semiconductor with ambipolar doping. **2019**, 114, 102104		18

574	Si and Sn doping of βGa2O3 layers. **2019**, 7, 031114	30
573	Growth and fundamentals of bulk βGa2O3 single crystals. **2019**, 40, 011801	20
572	Editors' Choice—Review—Theory and Characterization of Doping and Defects in βGa2O3. **2019**, 8, Q3187-Q3194	89
571	Thermal Simulations of High Current βGa2O3 Schottky Rectifiers. **2019**, 8, Q3195-Q3201	17
570	Achieving high transparent βGa2O3 through AlGa-InGa-VO. **2019**, 792, 405-410	3
569	Recent Progress in Solar-Blind Deep-Ultraviolet Photodetectors Based on Inorganic Ultrawide Bandgap Semiconductors. **2019**, 29, 1806006	189
568	Deep elastic strain engineering of bandgap through machine learning. **2019**, 116, 4117-4122	50
567	Valence- and Conduction-Band Offsets for Atomic-Layer-Deposited Al2O3 on (010) (Al0.14Ga0.86)2O3. **2019**, 48, 1568-1573	19
566	Surface/structural characteristics and band alignments of thin Ga2O3 films grown on sapphire by pulse laser deposition. **2019**, 479, 1246-1253	37
565	Impact of Electron Injection and Temperature on Minority Carrier Transport in Alpha-Irradiated βGa2O3 Schottky Rectifiers. **2019**, 8, Q3050-Q3053	8
564	Thermal Conductivity of Power Semiconductors—When Does It Matter?. **2019**,	1
563	Formation of Low-Resistivity Au/Mo/Ti Ohmic Contacts to p-Diamond Epitaxial Layers. **2019**, 64, 1827-1836	3
562	Growth of AlGaN:Si Heterostructures with Bragg Reflectors for the Blue-Green Spectral Range. **2019**, 55, 501-507	
561	Threshold Voltage Instability of Diamond Metal–Oxide–Semiconductor Field-Effect Transistors Based on 2D Hole Gas. **2019**, 216, 1900538	1
560	Trap characterization in ultra-wide bandgap Al0.65Ga0.4N/Al0.4Ga0.6N MOSHFET's with ZrO2 gate dielectric using optical response and cathodoluminescence. **2019**, 115, 213502	1
559	Recent Progress in Gallium Oxide and Diamond Based High Power and High-Frequency Electronics. **2019**, 28, 1940004	6
558	Role of plasma properties in controlling crystallinity and phase in oxide films grown by plasma-enhanced atomic layer epitaxy. **2019**, 37, 060909	8
557	Annealing of Proton and Alpha Particle Damage in Au-W/βGa2O3 Rectifiers. **2019**, 8, P799-P804	1

556	Tuning the Electronic Properties of Hexagonal Two-Dimensional GaN Monolayers via Doping for Enhanced Optoelectronic Applications. **2019**, 2, 202-213		29
555	Halide vapor phase epitaxial growth of Ga2O3 and Ga2O3 films. **2019**, 7, 022504		44
554	A universal method for large-yield and high-concentration exfoliation of two-dimensional hexagonal boron nitride nanosheets. **2019**, 27, 33-42		76
553	Influence of quartz on silicon incorporation in HVPE grown AlN. **2019**, 507, 295-298		3
552	Structural and optical properties of pulsed-laser deposited crystalline Ga2O3 thin films on silicon. **2019**, 34, 035001		25
551	High-Voltage Regrown Nonpolar ${m}$ -Plane Vertical p-n Diodes: A Step Toward Future Selective-Area-Doped Power Switches. **2019**, 40, 387-390		20
550	Hydrogen in Ga2O3. **2019**, 191-210		6
549	Effect of Proton Radiation on Ultrawide Bandgap AlN Schottky Barrier Diodes. **2019**, 66, 91-96		2
548	Repeatable Room Temperature Negative Differential Resistance in AlN/GaN Resonant Tunneling Diodes Grown on Sapphire. *Advanced Electronic Materials*, **2019**, 5, 1800651	6.4	23
547	Schottky Junction Vertical Channel GaN Static Induction Transistor with a Sub-Micrometer Fin Width. *Advanced Electronic Materials*, **2019**, 5, 1800689	6.4	4
546	Neutron radiation hardness testing of 650V / 7.5 A GaN power HEMT. **2020**, 166, 108456		2
545	Hydrogen evolution reaction electrocatalysis trends of confined gallium phosphide with substitutional defects. **2020**, 45, 23928-23936		5
544	Jet Nebulizer Sprayed WO3-Nanoplate Arrays for High-Photoresponsivity Based MetalInsulatorSemiconductor Structured Schottky Barrier Diodes. **2020**, 30, 731-748		19
543	Bulk Ga2O3 single crystals doped with Ce, Ce+Si, Ce+Al, and Ce+Al+Si for detection of nuclear radiation. **2020**, 818, 152842		18
542	Study of the Optoelectronic Properties of Ultraviolet Photodetectors Based on Zn-Doped CuGaO2 Nanoplate/ZnO Nanowire Heterojunctions. **2020**, 257, 1900684		4
541	Edge Termination for III-Nitride Vertical Power Devices Using Polarization Engineering. **2020**, 67, 571-575		0
540	On the thermal stability of nearly lattice-matched AlInN films grown on GaN via MOVPE. **2020**, 533, 125469		6
539	A Study on the First-Derivative Output Properties of GaN Static Induction Transistor with Submicrometer Fin Width. **2020**, 257, 1900545		

538	Reliable anatase-titania nanoclusters functionalized GaN sensor devices for UV assisted NO gas-sensing in ppb level. **2020**, 31, 155504	15
537	Enhancement of Hot Spot Cooling by Capped Diamond Layer Deposition for Multifinger AlGaN/GaN HEMTs. **2020**, 67, 47-52	13
536	Ultra-stable phosphor of h-BN white graphene-loaded all-inorganic perovskite nanocrystals for white LEDs. **2020**, 219, 116941	8
535	Gallium oxide-based solar-blind ultraviolet photodetectors. **2020**, 35, 023001	40
534	Impact of the interface vacancy on Schottky barrier height for Au/AlN polar interfaces. **2020**, 505, 144650	10
533	The Bright X-Ray Stimulated Luminescence of HfO2 Nanocrystals Activated by Ti Ions. **2020**, 8, 1901348	3
532	Graphene-like h-BN/CdS 2D/3D heterostructure composite as an efficient photocatalyst for rapid removing rhodamine B and Cr(VI) in water. **2020**, 46, 24674-24681	11
531	Electronic band structure of phosphorus-doped single crystal diamond: Dynamic Jahn-Teller distortion of the tetrahedral donor ground state. **2020**, 102,	2
530	Cause and Effects of OFF-State Degradation in Hydrogen-Terminated Diamond MESFETs. **2020**, 67, 4021-4026	2
529	Nanoflower ZnO thin-film grown by hydrothermal technique based Schottky diode. **2020**, 41, 102103	1
528	Low background doping in AlInN grown on GaN via metalorganic vapor phase epitaxy. **2020**, 548, 125847	3
527	Polarization engineering via InAlN/AlGaN heterostructures for demonstration of normally-off AlGaN channel field effect transistors. **2020**, 117, 152108	2
526	Phonon-limited electronic transport of two-dimensional ultrawide bandgap material h-BeO. **2020**, 117, 123101	6
525	Swift heavy ion irradiation-induced modifications in the electrical and surface properties of □Ga2O3. **2020**, 117, 142105	7
524	Hierarchical Nylon-6/reduced graphene oxide/polyaniline nanocomposites with enhanced dielectric properties for energy storage applications. **2020**, 32, 101821	10
523	Metallization of diamond. **2020**, 117, 24634-24639	13
522	Two-dimensional CaFCl: ultra-wide bandgap, strong interlayer quantum confinement, and n-type doping. **2020**, 22, 17213-17220	5
521	Guiding Principles for Trench Schottky Barrier Diodes Based on Ultrawide Bandgap Semiconductors: A Case Study in Ga□□**2020**, 67, 3938-3947	26

520	Low field transport calculation of 2-dimensional electron gas in □(AlxGa1□x)2O3/Ga2O3 heterostructures. **2020**, 128, 105703	14
519	Defect suppression in wet-treated etched-and-regrown nonpolar m-plane GaN vertical Schottky diodes: A deep-level optical spectroscopy analysis. **2020**, 128, 185703	2
518	Large-area vertically stacked MoTe2/□Ga2O3 p-n heterojunction realized by PVP/PVA assisted transfer. **2020**, 530, 147276	7
517	Investigation of Wide- and Ultrawide-Bandgap Semiconductors From Impact-Ionization Coefficients. **2020**, 67, 3999-4005	5
516	GaN Vertical-Channel Junction Field-Effect Transistors With Regrown p-GaN by MOCVD. **2020**, 67, 3972-3977	12
515	X-Ray Topography Characterization of Large Diameter AlN Single Crystal Substrates. **2020**, 1004, 63-68	3
514	Ultraviolet optoelectronic devices based on AlGaN-SiC platform: Towards monolithic photonics integration system. **2020**, 77, 105149	50
513	Phase-Selective Solution Synthesis of Perovskite-Related Cesium Cadmium Chloride Nanoparticles. **2020**, 59, 11688-11694	9
512	First formed dislocations in microcompressed c-oriented GaN micropillars and their subsequent interactions. **2020**, 128, 045107	1
511	Ultra-Wide Bandgap Copper Oxide: High Performance Solar-Blind Photo-detection. **2020**, 41, 1790-1793	7
510	Structural and electronic properties of 2D (graphene, hBN)/H-terminated diamond (100) heterostructures. **2020**, 117, 121901	8
509	The impact of ultraviolet laser excitation during Raman spectroscopy of hexagonal boron nitride thin films. **2020**, 51, 2468-2477	1
508	Heteroepitaxial growth of □Ga2O3 films on SiC via molecular beam epitaxy. **2020**, 38, 063406	13
507	Cathodoluminescence of silicon doped aluminum nitride with scanning transmission electron microscopy. **2020**, 8, 091110	1
506	Deep-Recessed □Ga□O□Delta-Doped Field-Effect Transistors With In Situ Epitaxial Passivation. **2020**, 67, 4813-4819	14
505	Evaluation of Point of Load Converters for Space Computational Loads. **2020**,	
504	A Study on the Impact of Mid-Gap Defects on Vertical GaN Diodes. **2020**, 33, 546-551	3
503	Atomic layer deposition of high-□layers on polycrystalline diamond for MOS devices: a review. **2020**, 8, 13127-13153	5

(2020-2020)

502	Thermal Conductivity of □Ga2O3 Thin Films Grown by Molecular Beam Epitaxy. **2020**,	1
501	Impact of electron injection on carrier transport and recombination in unintentionally doped GaN. **2020**, 128, 085702	5
500	2D Materials for Universal Thermal Imaging of Micro- and Nanodevices: An Application to Gallium Oxide Electronics. **2020**, 2, 2945-2953	14
499	Impact of impurity-based phonon resonant scattering on thermal conductivity of single crystalline GaN. **2020**, 117, 082101	5
498	Observation of carrier concentration dependent spintronic terahertz emission from n-GaN/NiFe heterostructures. **2020**, 117, 093502	8
497	Vertical □Ga□O□ Power Transistors: A Review. **2020**, 67, 3925-3937	38
496	Thermal conductivity of rutile germanium dioxide. **2020**, 117, 102106	10
495	Thermal Transport across Ion-Cut Monocrystalline □GaO Thin Films and Bonded □GaO-SiC Interfaces. **2020**, 12, 44943-44951	36
494	Below bandgap photoluminescence of an AlN crystal: Co-existence of two different charging states of a defect center. **2020**, 8, 081107	6
493	Epitaxial stabilization of rutile germanium oxide thin film by molecular beam epitaxy. **2020**, 117, 072105	6
492	Interface improvement of epitaxial 4H-SiC based Schottky didoes by selective heavy ion irradiation. **2020**, 1	3
491	Two-dimensional BaFCl monolayer: tunable bandgap and pronounced deep ultraviolet absorption. **2020**, 526, 012016	
490	Overview of Power Electronic Switches: A Summary of the Past, State-of-the-Art and Illumination of the Future. **2020**, 11,	5
489	Temperature characteristics of high-current UWBG enhancement and depletion mode AlGaN-channel MOSHFETs. **2020**, 117, 232105	2
488	Band Alignment of ScAlN/GaN Heterojunctions. **2020**, 12, 52192-52200	9
487	Band offset determination for amorphous Al2O3 deposited on bulk AlN and atomic-layer epitaxial AlN on sapphire. **2020**, 117, 182103	1
486	Electron and hole mobility of rutile GeO2 from first principles: An ultrawide-bandgap semiconductor for power electronics. **2020**, 117, 182104	10
485	Accelerated Stress Tests and Statistical Reliability Analysis of Metal-Oxide/GaN Nanostructured Sensor Devices. **2020**, 20, 742-747	4

484	Reliability of H-terminated diamond MESFETs in high power dissipation operating condition. **2020**, 114, 113898	0
483	Effect of Electron Injection on Minority Carrier Transport in 10 MeV Proton Irradiated □Ga2O3 Schottky Rectifiers. **2020**, 9, 045018	6
482	Control of Schottky barrier height in metal/□Ga2O3 junctions by insertion of PdCoO2 layers. **2020**, 8, 041109	7
481	Hydride vapor phase epitaxy of Si-doped AlN layers using SiCl4 as a doping gas. **2020**, 545, 125730	2
480	Influence of GaN layer to AlGaN layer width Ratio on Analog Performance of an Underlapped DG AlGaN/GaN based MOS-HEMT. **2020**,	
479	Scalable metal oxide functionalized GaN nanowire for precise SO2 detection. **2020**, 318, 128223	13
478	Lattice vibrations and optical properties of □Ga2O3 films grown by halide vapor phase epitaxy. **2020**, 35, 095001	3
477	Effect of the Beryllium Acceptor Impurity upon the Optical Properties of Single-Crystal AlN. **2020**, 54, 278-281	3
476	Frequency-Agile Low-Temperature Solution-Processed Alumina Dielectrics for Inorganic and Organic Electronics Enhanced by Fluoride Doping. **2020**, 142, 12440-12452	14
475	High performance solar-blind UV detector based on Hf0.38Sn0.62O2 epitaxial film. **2020**, 116, 242101	4
474	Thin film transistors based on ultra-wide bandgap spinel ZnGa2O4. **2020**, 116, 202104	14
473	Performance analysis of planar Schottky photodiode based on nanostructured ZnO thin film grown by three different techniques. **2020**, 831, 154859	5
472	Ultrawide-bandgap AlGaN-based HEMTs for high-power switching. **2020**, 19, 1100-1106	1
471	Interfacial integrity enhancement of atomic layer deposited alumina on boron doped diamond by surface plasma functionalization. **2020**, 397, 125991	2
470	The nature of the DX state in Ge-doped AlGaN. **2020**, 116, 222102	12
469	Tuning the high-□oxide (HfO2, ZrO2)/4H-SiC interface properties with a SiO2 interlayer for power device applications. **2020**, 527, 146843	4
468	Correlation of Pulsed Gas Flow on Si-doped □Ga2O3 Epilayer Grown by Halide Vapor Phase Epitaxy. **2020**, 9, 055005	4
467	Optical Phonon Scattering Dominated Transport in Individual Suspended Carbon Nanotubes. **2020**, 257, 2000103	

466	Tunable Properties of Novel GaO Monolayer for Electronic and Optoelectronic Applications. **2020**, 12, 30659-30669	37
465	Sputtered SrNbO as a UV-Transparent Conducting Film. **2020**, 12, 30520-30529	14
464	Vacuum-Ultraviolet Photon Detections. **2020**, 23, 101145	54
463	Dielectric dispersion and superior thermal characteristics in isotope-enriched hexagonal boron nitride thin films: evaluation as thermally self-dissipating dielectrics for GaN transistors. **2020**, 8, 9558-9568	2
462	III-nitrides based resonant tunneling diodes. **2020**, 53, 253002	2
461	Single-Photon Emission from Point Defects in Aluminum Nitride Films. **2020**, 11, 2689-2694	18
460	Metal oxide semiconductor-based Schottky diodes: a review of recent advances. **2020**, 7, 032001	22
459	p-Type Ultrawide-Band-Gap Spinel ZnGa2O4: New Perspectives for Energy Electronics. **2020**, 20, 2535-2546	31
458	Ultrabroad acoustical limiting in nonlinear metamaterials due to adaptive-broadening band-gap effect. **2020**, 101,	10
457	Point defects in Ga2O3. **2020**, 127, 101101	81
456	Stable, low-resistance, 1.5 to 3.5 k□sq□, diamond surface conduction with a mixed metal-oxide protective film. **2020**, 106, 107819	11
455	Plasmon-induced Ag decorated CeO nanorod array for photodetector application. **2020**, 31, 225203	9
454	Tungsten carbide layers deposited on graphite substrates via a wet powder process as anti-parasitic-reaction coatings for reactor components in GaN growth. **2020**, 22, 2632-2641	1
453	. **2020**, 67, 3960-3971	32
452	Quasi-2D Growth of Aluminum Nitride Film on Graphene for Boosting Deep Ultraviolet Light-Emitting Diodes. **2020**, 7, 2001272	18
451	Dynamic characteristics of PdCoO2/□Ga2O3 Schottky junctions. **2020**, 116, 232104	6
450	Construction of a □Ga2O3-based metal□oxide□semiconductor-structured photodiode for high-performance dual-mode solar-blind detector applications. **2020**, 8, 5071-5081	31
449	High performance hydrogen/oxygen terminated CVD single crystal diamond radiation detector. **2020**, 116, 092104	7

448	Recent progress on the electronic structure, defect, and doping properties of Ga2O3. **2020**, 8, 020906		132
447	High-Breakdown-Voltage AlGaN Channel High-Electron-Mobility Transistors with Reduced Surface Field Technique. **2020**, 217, 1900793		2
446	Al-rich AlGaN based transistors. **2020**, 38, 020803		18
445	Benchmarking Ga2O3 Schottky Diodes by Nanoscale Ballistic Electron Emission Microscopy. *Advanced Electronic Materials*, **2020**, 6, 1901151	6.4	5
444	Thermal transport properties of GaN with biaxial strain and electron-phonon coupling. **2020**, 127, 035102		29
443	Phase Control of Crystalline Ga2O3 Films by Plasma-Enhanced Atomic Layer Deposition. **2020**, 32, 1140-1152		22
442	Plasma etching of wide bandgap and ultrawide bandgap semiconductors. **2020**, 38, 020802		13
441	High-Temperature Operation of AlxGa1N (x > 0.4) Channel Metal Oxide Semiconductor Heterostructure Field Effect Transistors with High-k Atomic Layer Deposited Gate Oxides. **2020**, 217, 1900802		5
440	Normally-Off Hydrogen-Terminated Diamond Field Effect Transistor With Ferroelectric HfZrOx/Al2O3 Gate Dielectrics. **2020**, 8, 20043-20050		4
439	Progress in narrowband high-power microwave sources. **2020**, 27, 010501		24
438	Demonstration of a 2 kV Al0.85Ga0.15N Schottky Barrier Diode With Improved On-Current and Ideality Factor. **2020**, 41, 457-460		7
437	Gallium Oxide for High-Power Optical Applications. **2020**, 8, 1901522		8
436	Kilo-Voltage Thin-Film Transistors for Driving Nanowire Field Emitters. **2020**, 41, 405-408		12
435	Performance projection of high-voltage, quasi-lateral diamond MOSFET for power electronics applications. **2020**, 104, 107741		1
434	Designing sapphire surface patterns to promote AlGaN overgrowth in hydride vapor phase epitaxy. **2020**, 35, 035028		1
433	Strain-tunable III-nitride/ZnO heterostructures for photocatalytic water-splitting: A hybrid functional calculation. **2020**, 8, 041114		23
432	Shallow Si donor in ion-implanted homoepitaxial AlN. **2020**, 116, 172103		13
431	Determination of dielectric axes and transition moment directions in Ga2O3 from the polarization dependence of vibrational spectra. **2020**, 127, 055702		8

430	Ultrawide-Bandgap p-n Heterojunction of Diamond/□Ga2O3 for a Solar-Blind Photodiode. **2020**, 9, 045004		20
429	Advanced and in situ transmission electron microscopy of diamond: A review. **2021**, 31-104		1
428	Detoxification of GaAs Bearing Waste LED and Recovery of Metal Values Through Understanding the Thermodynamics and Chemistry: A Perspective. **2021**, 12, 2769-2778		
427	BeCaZnO quaternary alloy: thin films and ultraviolet photodetectors. **2021**, 857, 157567		4
426	Patterned growth of □Ga2O3 thin films for solar-blind deep-ultraviolet photodetectors array and optical imaging application. **2021**, 72, 189-196		28
425	Investigation of Nano-Gaps in Fractured □Ga2O3 Nanomembranes Formed by Uniaxial Strain. *Advanced Electronic Materials*, **2021**, 7, 2000763	6.4	2
424	Low-strain sensor based on the flexible boron-doped diamond-polymer structures. **2021**, 173, 832-841		2
423	Detection of acceptor-bound exciton peak at 300 K in boron□phosphorus co-doped ZnMgO thin films for room-temperature optoelectronics applications. **2021**, 111, 110591		0
422	The dependence of indium incorporation on specified temperatures in growing InGaN/GaN heterostructure using MOCVD technique. **2021**, 137, 111176		2
421	. **2021**, 68, 288-293		3
420	Ohmic contact formation to GaN by Si+ implantation doping: Retarding layer, implantation fluence, encapsulation, and activation annealing temperature studies. **2021**, 122, 105491		2
419	Heterostructural phase diagram of Ga2O3□based solid solution with Al2O3. **2021**, 41, 611-616		6
418	A Scalable, General Purpose Circuit Model for Vanadium Compensated, Semi-Insulating, Vertical 6H-SiC PCSS. **2021**, 68, 988-992		3
417	Fundamental technologies for gallium oxide transistors. **2021**, 107, 1-22		0
416	Probing structural and chemical evolution in (AlxGa1□)2O3 using atom probe tomography: A review. **2021**, 36, 52-69		4
415	Achieving large uniform tensile elasticity in microfabricated diamond. **2021**, 371, 76-78		29
414	High-current recessed gate enhancement-mode ultrawide bandgap Al x Ga1□ N channel MOSHFET with drain current 0.48 A mm□ and threshold voltage +3.6 V. **2021**, 14, 014003		6
413	Crystal orientation dictated epitaxy of ultrawide-bandgap 5.4- to 8.6-eV □(AlGa)O on m-plane sapphire. **2021**, 7,		35

412	. **2021**, 9, 46664-46673	3
411	Microstructures and electronic characters of GaO on different substrates: exploring the role of surface chemistry and structures. **2021**, 23, 21874-21882	2
410	Equation of States and Ammonia Decomposition in Ammonothermal Systems. **2021**, 253-273	
409	Ultrawide-bandgap semiconductor AlN crystals: growth and applications. **2021**, 9, 1852-1873	13
408	Ultrahigh Deep-Ultraviolet Responsivity of a Ga2O3/MgO Heterostructure-Based Phototransistor. **2021**, 8, 557-566	20
407	High Mg activation in implanted GaN by high temperature and ultrahigh pressure annealing. **2021**, 118, 022101	16
406	High-Al-content heterostructures and devices. **2021**, 191-222	
405	Weak localization and dimensional crossover in compositionally graded AlxGa1N. **2021**, 118, 082101	4
404	Surface transfer doping of diamond: A review. **2021**, 96, 100613	22
403	Thermal stability of (Al x Ga1)2O3 films grown on c-plane sapphire substrates with an Al composition up to 90%. **2021**, 60, SBBD13	6
402	Structure Investigations of Islands with Atomic-Scale Boron-Carbon Bilayers in Heavily Boron-Doped Diamond Single Crystal: Origin of Stepwise Tensile Stress. **2021**, 16, 25	2
401	Morphology of GaO Nanowires and Their Sensitivity to Volatile Organic Compounds. **2021**, 11,	2
400	Low-Temperature As-Grown Crystalline GaO Films via Plasma-Enhanced Atomic Layer Deposition. **2021**, 13, 8538-8551	5
399	Ultralow Voltage GaN Vacuum Nanodiodes in Air. **2021**, 21, 1928-1934	6
398	Preparation of Ga2O3/ZnO/WO3 double S-scheme heterojunction composite nanofibers by electrospinning method for enhancing photocatalytic activity. **2021**, 32, 7307-7318	6
397	Two dimensional hexagonal GaOOH: A promising ultrawide bandgap semiconductor for smart optoelectronic applications. **2021**, 765, 138310	1
396	Topological effects of phonons in GaN and AlGaN: A potential perspective for tuning phonon transport. **2021**, 129, 085102	4
395	A first-principles understanding of point defects and impurities in GaN. **2021**, 129, 111101	19

394	Approach to achieving a p-type transparent conducting oxide: Doping of bismuth-alloyed Ga2O3 with a strongly correlated band edge state. **2021**, 103,	7
393	Role of Wide Bandgap Materials in Power Electronics for Smart Grids Applications. **2021**, 10, 677	15
392	oI20-carbon: A new superhard carbon allotrope. **2021**, 113, 108284	5
391	Highly sensitive solar-blind deep ultraviolet photodetector based on graphene/PtSe2/□Ga2O3 2D/3D Schottky junction with ultrafast speed. **2021**, 14, 1973-1979	52
390	Recent progress in deep-depletion diamond metal□oxide□semiconductor field-effect transistors. **2021**, 54, 233002	11
389	Computational approaches to point defect simulations for semiconductor solid solution alloys. **2021**, 154, 094705	1
388	Compositionally Graded III-Nitride Alloys: Building Blocks for Efficient Ultraviolet Optoelectronics and Power Electronics. **2021**,	44
387	On the Raman Scattering, Infrared Absorption, and Luminescence Spectroscopy of Aluminum Nitride Doped with Beryllium. **2021**, 55, 328-332	
386	AlGaN Channel High Electron Mobility Transistors with Regrown Ohmic Contacts. **2021**, 10, 635	8
385	Role of Interface Induced Gap States in Polar AlxGa1□N (0 □x □1) Schottky Diodes. **2021**, 50, 3731-3738	3
384	Electric field effect on the thermal conductivity of wurtzite GaN. **2021**, 118, 162110	3
383	Steady-state methods for measuring in-plane thermal conductivity of thin films for heat spreading applications. **2021**, 92, 044907	2
382	Fundamental Properties and Power Electronic Device Progress of Gallium Oxide. **2021**, 235-352	
381	Single-Crystal Diamond Needle Fabrication Using Hot-Filament Chemical Vapor Deposition. **2021**, 14,	5
380	Optimizing Ohmic contacts to Nd-doped n-type SrSnO3. **2021**, 118, 142104	4
379	Eco-Friendly Electronics□A Comprehensive Review. 2001263	11
378	Recent progress of integrated circuits and optoelectronic chips. **2021**, 64, 1	14
377	Creation of Negatively Charged Boron Vacancies in Hexagonal Boron Nitride Crystal by Electron Irradiation and Mechanism of Inhomogeneous Broadening of Boron Vacancy-Related Spin Resonance Lines. **2021**, 11,	7

376	First Experimental Demonstration of Robust HZO/GaO Ferroelectric Field-Effect Transistors as Synaptic Devices for Artificial Intelligence Applications in a High-Temperature Environment. **2021**, 68, 2515-2521		3
375	Reroute green synthesis of hexagonal and triclinic nanostructured cerium oxide: morphology and optical properties. **2021**, 32, 16324-16334		1
374	ReviewRadiation Damage in Wide and Ultra-Wide Bandgap Semiconductors. **2021**, 10, 055008		19
373	Electron beam probing of non-equilibrium carrier dynamics in 18 MeV alpha particle- and 10 MeV proton-irradiated Si-doped Ga2O3 Schottky rectifiers. **2021**, 118, 202105		5
372	Analytical electron microscopy of (2 01) Ga2O3/SiO2 and (2 01) Ga2O3/Al2O3 interface structures in MOS capacitors. **2021**, 129, 195705		1
371	Selective area regrowth and doping for vertical gallium nitride power devices: Materials challenges and recent progress. **2021**, 49, 296-296		6
370	Study on the Size Effect of Single Crystal Gallium Oxide During the Nanoindentation Process. **2021**, 20, 575-587		
369	Toward the predictive discovery of ambipolarly dopable ultra-wide-band-gap semiconductors: The case of rutile GeO2. **2021**, 118, 260501		7
368	First-principles study of structural, electronic, and thermal conductivity properties of monolayer SrFBr. **2021**, 153, 109956		1
367	Thermal Visualization of Buried Interfaces Enabled by Ratio Signal and Steady-State Heating of Time-Domain Thermoreflectance. **2021**, 13, 31843-31851		9
366	Improved light output from thick GaO scintillation crystals via graded-refractive-index photonic crystals. **2021**, 29, 18646-18653		3
365	Lattice Location Studies of the Amphoteric Nature of Implanted Mg in GaN. *Advanced Electronic Materials*, **2021**, 7, 2100345	6.4	1
364	(Al0.18Ga0.82)2O3/Ga2O3 Double Heterojunction Transistor With Average Field of 5.5 MV/cm. **2021**, 42, 899-902		23
363	Device topological thermal management of Ga2O3 Schottky barrier diodes*. **2021**, 30, 067302		4
362	Efficient p-type doping in ultra-wide band-gap nitrides using non-equilibrium doping method. **2021**, 42, 060402		3
361	The effectiveness of heat extraction by the drain metal contact of Ga2O3 MOSFETs. **2021**,		0
360	High Radiative Recombination Rate of AlGaN-Based Deep Ultraviolet Light-Emitting Diodes with AlInGaN/AlInN/AlInGaN Tunnel Electron Blocking Layer. **2021**, 50, 5612-5617		1
359	Simulation Comparative Study on Ga2O3 and SiC Schottky Diodes. **2021**,		

358	Temperature dependence of electronic bands in Al/GaN by utilization of invariant deep defect transition energies. **2021**, 119, 022101	
357	Characterization of m-GaN and a-GaN Crystallographic Planes after Being Chemically Etched in TMAH Solution. **2021**, 14, 4241	4
356	Band offsets and electronical properties of the Ga2O3/FTO heterojunction via transferring free-standing Ga2O3 onto FTO/glass.	0
355	Nb-doped ZrxSn1□O2: Experimental and first-principles study. **2021**, 130, 015702	
354	Performance and reliability of □Ga2O3 Schottky barrier diodes at high temperature. **2021**, 39, 040402	4
353	EML webinar overview: Elastic Strain Engineering for unprecedented properties. **2021**, 101430	1
352	Vertical GaN Power Devices: Device Principles and Fabrication Technologies□Part II. **2021**, 68, 3212-3222	6
351	Quantification of Trace-Level Silicon Doping in Al GaN Films Using Wavelength-Dispersive X-Ray Microanalysis. **2021**, 27, 696-704	1
350	Surface Photovoltage Spectroscopy over Wide Time Domains for Semiconductors with Ultrawide Bandgap: Example of Gallium Oxide. **2021**, 218, 2100167	1
349	Reduced thermal boundary conductance in GaN-based electronic devices introduced by metal bonding layer. **2021**, 14, 3616-3620	1
348	Vertical GaN Power Devices: Device Principles and Fabrication Technologies□Part I. **2021**, 68, 3200-3211	8
347	Aluminium Oxide Thin-Film Based In Vitro Cell-Substrate Sensing Device for Monitoring Proliferation of Myoblast Cells. **2021**, 20, 331-337	2
346	Perspective on the band structure engineering and doping control of transparent conducting materials. **2021**, 119, 070502	1
345	Thermal Management of □Ga□□Current Aperture Vertical Electron Transistors. **2021**, 11, 1171-1176	1
344	Power electronics figure-of-merit of ScAlN. **2021**, 119, 072101	1
343	On the Ge shallow-to-deep level transition in Al-rich AlGaN. **2021**, 130, 055702	3
342	Thermal application of composites of iron and magnesium in thermosyphon solar water heating system.	1
341	Low Thermal Resistance (0.5 K/W) Ga□□Schottky Rectifiers With Double-Side Packaging. **2021**, 42, 1132-1135	10

340	Phonon- and defect-limited electron and hole mobility of diamond and cubic boron nitride: A critical comparison. **2021**, 119, 062101	4
339	Phase transition of two-dimensional ferroelectric and paraelectric Ga2O3 monolayers: A density functional theory and machine learning study. **2021**, 104,	1
338	Diamond-Incorporated Flip-Chip Integration for Thermal Management of GaN and Ultra-Wide Bandgap RF Power Amplifiers. **2021**, 11, 1177-1186	6
337	Establishment of a growth route of crystallized rutile GeO2 thin film (?1 □m/h) and its structural properties. **2021**, 119, 062104	3
336	Boron Nitride doped Chitosan Functionalized Graphene for an Efficient Dye Degradation. **2021**, 6, 7956-7963	1
335	Valveless microliter combustion for densely packed arrays of powerful soft actuators. **2021**, 118,	4
334	Growth evolution of high-quality MOCVD aluminum nitride using nitrogen as carrier gas on the sapphire substrate. 1	2
333	Comparative Modelling and Thermal Analysis of AlGaN/GaN Power Devices. **2021**, 11, 33	
332	Growth of highly conductive Al-rich AlGaN:Si with low group-III vacancy concentration. **2021**, 11, 095119	4
331	Fabrication and field emission properties of vertical, tapered GaN nanowires etched via phosphoric acid. **2021**, 33,	2
330	Large contribution of quasi-acoustic shear phonon modes to thermal conductivity in novel monolayer Ga2O3. **2021**, 130, 105106	3
329	Substantial P-Type Conductivity of AlN Achieved via Beryllium Doping. **2021**, 33, e2104497	12
328	Bipolar self-doping in ultra-wide bandgap spinel ZnGa2O4. **2021**, 20, 100466	6
327	Self-powered ultraviolet photodiode based on lateral polarity structure GaN films. **2021**, 39, 052206	1
326	Quasi-ballistic thermal conduction in 6H□SiC. **2021**, 20, 100462	2
325	Designing of luminescent complexes of europium(III) ion with hydroxyl ketone and nitrogen donor secondary ligands for improving the luminescence performance and biological actions. **2021**, 525, 120463	8
324	Atomic-Layer-Ti-Doped Ga2O3 Thin Films with Tunable Optical Properties and Wide Ultraviolet Optoelectronic Responses. **2021**, 15, 2100411	2
323	Thin-film growth and application prospects of metallic delafossites. **2021**, 11, 100146	4

322	Planar and three-dimensional damage-free etching of □Ga2O3 using atomic gallium flux. **2021**, 119, 123503	7
321	Impact of Carbon-Carbon Defects at the SiO2/4H-SiC (0001) Interface: A First-Principles Calculation.	2
320	Properties of Diamonds and Their Application in Photodetectors. **2021**, 1871-1896	
319	Nanoscale AlGaN and BN: Molecular beam epitaxy, properties, and device applications. **2021**, 153-189	1
318	Electric Field Mitigation in High Voltage High Power IGBT Modules using Nonlinear Conductivity Composites. **2021**, 1-1	4
317	Thermal science and engineering of □Ga2O3 materials and devices. **2021**, 77-99	4
316	Polarization-Engineered Quaternary Barrier InAlGaN/AlGaN Heterostructure Field-Effect Transistors Toward Robust High-Frequency Power Performance in AlGaN Channel Electronics. **2021** , 1-6	2
315	Introduction. **2020**, 1-12	5
314	Continuous and Time-Resolved Cathodoluminescence Studies of Electron Injection Induced Effects in Gallium Nitride. **2020**, 109-117	1
313	Ultrahigh Power Factors in Ultrawide-Band-Gap GaB3N4 and AlB3N4 for High-Temperature Thermoelectric Applications. **2021**, 3, 219-229	2
312	Dual-functional ultraviolet photodetector with graphene electrodes on AlGaN/GaN heterostructure. **2020**, 10, 22059	14
311	Mean multiplication gain and excess noise factor of GaN and Al0.45Ga0.55N avalanche photodiodes. **2020**, 92, 10301	1
310	Control of n-type electrical conductivity for cubic boron nitride (c-BN) epitaxial layers by Si doping. **2020**, 116, 162104	6
309	First principles study of thermoelectric properties of □gallium oxide. **2020**, 117, 262104	5
308	Electronic and optical properties of ultrawide bandgap perovskite semiconductors via first principles calculations. **2020**, 117, 232102	4
307	Carrier capture kinetics, deep levels, and isolation properties of □Ga2O3 Schottky-barrier diodes damaged by nitrogen implantation. **2020**, 117, 262108	8
306	Highly selective ozone-treated □Ga2O3 solar-blind deep-UV photodetectors. **2020**, 117, 261101	15
305	Electronic degeneracy conduction in highly Si-doped Al0.6Ga0.4N layers based on the carrier compensation effect. **2020**, 117, 262103	7

304	Phonon-boundary scattering and thermal transport in AlxGa1N: Effect of layer thickness. **2020**, 117, 252102	0
303	The anisotropic quasi-static permittivity of single-crystal Ga2O3 measured by terahertz spectroscopy. **2020**, 117, 252103	14
302	Growth and characterization of homoepitaxial Ga2O3 layers. **2020**, 53, 484002	3
301	Structural and electronic properties of Si- and Sn-doped (201) Ga2O3 annealed in nitrogen and oxygen atmospheres. **2020**, 53, 504002	10
300	Review of polymorphous Ga2O3 materials and their solar-blind photodetector applications. **2021**, 54, 043001	49
299	Deep-level defects in gallium oxide. **2021**, 54, 043002	25
298	Performance enhancement of Ga2O3 on Si (100) based Schottky barrier diodes using REduced SURFace Field. **2020**, 35, 085009	7
297	Importance of shallow hydrogenic dopants and material purity of ultra-wide bandgap semiconductors for vertical power electron devices. **2020**, 35, 125018	8
296	Oxygen and silicon point defects in Al0.65Ga0.35N. **2019**, 3,	13
295	Experimental observation of high intrinsic thermal conductivity of AlN. **2020**, 4,	20
294	Guidelines for Reduced-Order Thermal Modeling of Multifinger GaN HEMTs. **2020**, 142,	5
293	Review of nanophotonics approaches using nanostructures and nanofabrication for III-nitrides ultraviolet-photonic devices. **2018**, 12, 1	28
292	ReviewRecent Advances in Designing Gallium Oxide MOSFET for RF Application. **2020**, 9, 065010	8
291	EditorsChoiceVibrational Properties of Oxygen-Hydrogen Centers in H+- and D+-Implanted Ga2O3. **2020**, 9, 125006	6
290	Low-loss GaO-core/SiO-cladding planar waveguides on Si substrate. **2020**, 28, 12475-12486	4
289	Review of gallium-oxide-based solar-blind ultraviolet photodetectors. **2019**, 7, 381	203
288	AlInN/GaN diodes for power electronic devices. **2020**, 13, 091006	2
287	Ultrawide bandgap Al x Ga1 N channel heterostructure field transistors with drain currents exceeding 1.3 A mm1. **2020**, 13, 094002	4

286	Growth mechanism on graphene-regulated high-quality epitaxy of flexible AlN film. **2021**, 23, 7406-7411		3
285	Strain relaxation and dislocation annihilation in compositionally graded β(AlxGa1-x)2O3 layer for high voltage βGa2O3 power devices. **2021**, 221, 117423		3
284	MCdCl3 (M=CH3NH3, (CH3)2NH2): New Hybrid Perovskites with Large Dielectric Constants for Field-Effect Transistors. 2100485		0
283	Selective Effects of the Host Matrix in Hydrogenated InGaAsN Alloys: Toward an Integrated Matrix/Defect Engineering Paradigm. **2022**, 32, 2108862		
282	Ultrahigh Energy Storage Density and Efficiency in BiNaTiO-Based Ceramics via the Domain and Bandgap Engineering. **2021**, 13, 51218-51229		8
281	Comparative Study of High-Temperature Annealed and RTA Process βGa2O3 Thin Film by Sol–Gel Process. **2021**, 11, 1220		0
280	Prevalence of pretransition disordering in the rutile-to-CaCl2 phase transition of GeO2. **2021**, 104,		
279	The Effects of Polarization-Modulated Quaternary AlInGaN Barriers in Deep-UV-LED. 1		1
278	Prospects for n-type conductivity in cubic boron nitride. **2021**, 119, 162105		3
277	Non-Volatile Photo-Switch Using a Diamond pn Junction. *Advanced Electronic Materials*, 2100542	6.4	1
276	Analysis of the Grinding Characteristics of βGa2O3 Crystal on Different Planes. **2020**, 19, 235-248		1
275	Quantitative defect analysis in MOCVD GaN-on-GaN using cathodoluminescence. **2020**, 28, 26651-26660		0
274	Gallium Oxide: Material Properties and Devices. **2021**, 659-679		
273	Direct growth of hexagonal boron nitride on non-metallic substrates and its heterostructures with graphene. **2021**, 24, 103374		5
272	A perspective on the electro-thermal co-design of ultra-wide bandgap lateral devices. **2021**, 119, 170501		8
271	Corrosion of SiC-coated graphite susceptor by NH3 and Cl2. **2021**, 48, 4158-4158		2
270	The Features of Phase Stability of GaN and AlN Films at Nanolevel. **2020**, 11,		
269	Demonstration of a ~40 kV Si Vacuum Transistor as a Practical High Frequency and Power Device. **2020**,		0

268	Boron doping in gallium oxide from first principles. **2020**, 4, 125001	0
267	2D-GaN/AlN Monolayer-Thick Quantum Wells. 1-34	
266	Wide Bandgap Integrated Circuits for High Power Management in Extreme Environments. **2020**, 167-178	
265	Diodes 1. **2020**, 661-688	
264	Size Regulation and Photoluminescence Properties of Ga2O3 Nanomaterials. **2020**, 69, 108102	0
263	Charge trapping and degradation of Ga2O3 isolation structures for power electronics. **2020**,	
262	On electrical analysis of Al-rich p-AlGaN films for III-nitride UV light emitters.	2
261	Pulsed laser deposition growth of ultra-wide bandgap GeO2 film and its optical properties. **2021**, 119, 182101	1
260	GaN-based power devices: Physics, reliability, and perspectives. **2021**, 130, 181101	37
259	A self-powered Ga2O3/CsCu2I3 heterojunction photodiode responding to deep ultraviolet irradiation. **2021**,	2
258	Growth Design for High Quality AlxGa(1-x)N Layer with High AlN-fraction on Si (111) Substrate by MOCVD. **2021**, 126418	0
257	Systematic oxygen impurity reduction in smooth N-Polar GaN by chemical potential control.	1
256	Probing structural and chemical evolution in (Al x Ga1)2O3 using atom probe tomography: A review. **2021**, 36, 1-18	
255	Deep and shallow electronic states associated to doping, contamination and intrinsic defects in Ga2O3 epilayers. **2022**, 138, 106307	3
254	A New Ga2O3 Trench Schottky Barrier Diode with Improved Forward Conduction Characteristics. **2021**,	
253	A Hybrid Active Neutral Point Clamped Inverter Utilizing Si and GaO Semiconductors: Modelling and Performance Analysis.. **2021**, 12,	2
252	The formation and role of the SiO2 oxidation layer in the 4H-SiC/Ga2O3 interface. **2021**, 581, 151956	0
251	p-type AlN based heteroepitaxial diodes with Schottky, Pin, and junction barrier Schottky character achieving significant breakdown performance. **2021**, 130, 195702	1

250	A Spiro-MeOTAD/GaO/Si p-i-n Junction Featuring Enhanced Self-Powered Solar-Blind Sensing via Balancing Absorption of Photons and Separation of Photogenerated Carriers. **2021**, 13, 57619-57628	2
249	Sn-Induced Phase Stabilization and Enhanced Thermal Stability of □GaO Grown by Mist Chemical Vapor Deposition. **2021**, 6, 31292-31298	1
248	Enhancement-mode normally-off □Ga2O3:Si metal-semiconductor field-effect deep-ultraviolet phototransistor. **2022**, 37, 015001	2
247	Solar-blind ultraviolet photodetectors with thermally reduced graphene oxide formed on high-Al-content AlGaN layers. **2021**, 11, 115322	2
246	Efficient thermal dissipation in wafer-scale heterogeneous integration of single-crystalline □Ga2O3 thin film on SiC. **2021**, 1, 691-691	4
245	First demonstration of robust tri-gate □GaOnano-membrane field-effect transistors. **2021**,	2
244	Wet etching in □Ga2O3 bulk single crystals.	0
243	Stress enhanced photoelectric response in flexible AlN single-crystalline thin films. **2022**, 585, 152378	1
242	Hybrid functional calculations of optoelectronic properties of ultra-wide bandgap LiSmO2: A first-principle study. **2022**, 342, 114619	0
241	Effect of epitaxial growth rate on morphological, structural and optical properties of □Ga2O3 films prepared by MOCVD. **2022**, 149, 111718	3
240	Growth and characterization of PALE Si-doped AlN on sapphire substrate by MOVPE. **2022**, 142, 106464	1
239	Ultraviolet antireflective porous nanoscale periodic hole array of 4H-SiC by Photon-Enhanced Metal-assisted chemical etching. **2022**, 581, 152387	1
238	Photocatalytic performance of □Ga2O3 microcubes towards efficient degradation of malachite green. **2021**, 48, 9746-9746	0
237	Evidence of thermionic emission in forward biased □Ga2O3 Schottky diodes at Boltzmann doping limit. **2022**, 131, 025702	2
236	Optimizing performance and yield of vertical GaN diodes using wafer scale optical techniques.. **2022**, 12, 658	2
235	Anharmonicity of lattice vibrations in thin film □Ga2O3 investigated by temperature dependent Raman spectroscopy. **2022**, 120, 022104	1
234	Multi-component ZnO alloys: Bandgap engineering, hetero-structures, and optoelectronic devices. **2022**, 147, 100661	7
233	Vertical GaN and Vertical Ga 2 O 3 Power Transistors: Status and Challenges. 2100659	0

232	Three-photon absorption and Kerr nonlinearity in pristine and doped □Ga2O3 single crystals. **2022**, 120, 032101	2
231	The role of Ga supersaturation on facet formation in the epitaxial lateral overgrowth of GaN. **2022**, 120, 032104	0
230	Quasi-harmonic theory for phonon thermal boundary conductance at high temperatures. **2022**, 131, 015101	0
229	High-temperature performance of AlN MESFETs with epitaxially grown n-type AlN channel layers. **2022**, 1-1	3
228	Growth of bulk □Ga2O3 single crystals by the Czochralski method. **2022**, 131, 031103	11
227	□Ga2O3 material properties, growth technologies, and devices: a review. **2022**, 32, 1	4
226	High breakdown voltage of boron-doped diamond metal semiconductor field effect transistor grown on freestanding heteroepitaxial diamond substrate. **2022**, 121, 108782	2
225	Self-trapped holes and polaronic acceptors in ultrawide-bandgap oxides. **2022**, 131, 025701	2
224	Enhancement of Thermal Transfer From □-Ga□O□Nano-Membrane Field-Effect Transistors to High Thermal Conductivity Substrate by Inserting an Interlayer. **2022**, 1-5	3
223	The discuss on the luminescence measurement of the band gap. **2022**,	
222	Microstructural Gradational Properties of Sn-Doped Gallium Oxide Heteroepitaxial Layers Grown Using Mist Chemical Vapor Deposition.. **2022**, 15,	0
221	Green synthesis of novel in-situ micro/submicron-Cu paste for semiconductor interconnection.. **2022**,	0
220	The suppression of dark current for achieving high-performance Ga2O3 nanorod array ultraviolet photodetector. **2022**,	1
219	Effect of unintentional nitrogen incorporation on n-type doping of □Ga2O3 grown by molecular beam epitaxy. **2022**, 24, 269-274	3
218	Impurity-hydrogen complexes in □Ga2O3: Hydrogenation of shallow donors vs deep acceptors. **2022**, 131, 035706	2
217	Surface phonon polaritons for infrared optoelectronics. **2022**, 131, 030901	6
216	Analysis of the dependence of critical electric field on semiconductor bandgap. **2022**, 37, 849	2
215	Trench termination in Ga2O3-based power device: a simulation-based study. 1	0

214	Innovative all-silicon based a-SiNx:O/c-Si heterostructure solar-blind photodetector with both high responsivity and fast response speed. **2022**, 7, 026102	1
213	Optimized carrier confinement in deep-ultraviolet light-emitting diodes with AlInGaN/AlInN superlattice electron blocking layer. **2022**, 278, 115638	0
212	Numerical model of species transport and melt stoichiometry in βGa2O3 crystal growth. **2022**, 583, 126526	
211	Possible ferromagnetism or antiferromagnetism in defective AlN via strain engineering: Hybrid versus GGA calculations. **2022**, 549, 168965	
210	Thermally-Aware Layout Design of βGa□O□Lateral MOSFETs. **2022**, 1-7	3
209	Excess noise in high-current diamond diodes. **2022**, 120, 062103	5
208	Controlling the carrier density of surface conductive diamond. **2022**, 122, 108775	1
207	Two-dimensional hexagonal LaOF with ultrawide bandgap, large exciton energy, and low lattice thermal conductivity. **2022**, 140, 115195	0
206	A first-principles study of electronic and optical properties of the tetragonal phase of monolayer ZnS modulated by biaxial strain.. **2022**, 12, 6166-6173	0
205	Thermal Management Modeling for βGa2O3-Highly Thermal Conductivity Substrates Heterostructures. **2022**, 1-1	2
204	Doping and compensation in heavily Mg doped Al-rich AlGaN films. **2022**, 120, 082102	2
203	Non-equilibrium epitaxy of metastable polymorphs of ultrawide-bandgap gallium oxide. **2022**, 120, 072101	3
202	Diamond semiconductor and elastic strain engineering. **2022**, 43, 021801	2
201	Variable temperature probing of minority carrier transport and optical properties in p-Ga2O3. **2022** , 10, 031106	2
200	Impact of Mole Fraction Variation on the Analog/RF Performance of Quaternary InAlGaN DG MOS-HEMTs. **2022**, 51, 2608-2616	
199	Schottky diode characteristics on high-growth rate LPCVD βGa2O3 films on (010) and (001) Ga2O3 substrates. **2022**, 120, 122106	2
198	Vertical βGa2O3 Schottky barrier diodes with trench staircase field plate.	4
197	Mechanical properties and dislocation dynamics in βGa2O3. **2022**, 61, 045506	1

196	2D Ultrawide Bandgap Semiconductors: Odyssey and Challenges.. **2022**, e2101348	2
195	Electron mobility and velocity in Al0.45Ga0.55N-channel ultra-wide bandgap HEMTs at high temperatures for RF power applications. **2022**, 120, 103505	0
194	Chemical vapor deposited diamond with versatile grades: from gemstone to quantum electronics. **2022**, 16, 1	1
193	Variation in the Optical Properties of Carbon Dots Fabricated by a Green and Facile Strategy for Solar-Blind UV Detection. **2022**, 126, 5711-5721	0
192	Large-Area, Solar-Blind, Sub-250 nm Detection AlGaN Avalanche Photodiodes Grown on AlN Substrates. 2100619	1
191	Mg-facilitated growth of cubic boron nitride by ion beam-assisted molecular beam epitaxy.	1
190	n-Type Diamond Metal-Semiconductor Field-Effect Transistor With High Operation Temperature of 300▯C. **2022**, 43, 588-591	
189	Comparison of thermal stabilities of p+-Si/p-diamond heterojunction and Al/p-diamond Schottky barrier diodes.	1
188	Self-catalytic growth and characterization of AlGaN nanostructures with high Al composition. 1	
187	Point-defect management in homoepitaxially grown Si-doped GaN by MOCVD for vertical power devices.	1
186	The Influence of Absorbate Desorption and Kinetic Isotope Effects on the Surface Conductivity of Diamond. 1	
185	Effects of acceptor doping and oxygen stoichiometry on the properties of sputter-deposited p-type rocksalt Ni Zn1O (0.3▯1.0) alloys. **2022**, 905, 164224	1
184	Close oxygen coupled low-pressure chemical vapor deposition growth of high quality ▯Ga2O3 on sapphire. **2022**, 146, 106645	0
183	Ultrawide-bandgap semiconductors: An overview. **2021**, 36, 4601-4615	1
182	Impact of thermal annealing on deep levels in nitrogen-implanted ▯Ga2O3 Schottky barrier diodes. **2021**, 130, 245704	0
181	Analysis of Rotor Position Detection Performance According to the Frequency of Square Waveform Voltage in the Harmonic Injection Sensorless Method through HILS. **2021**, 9, 2267	
180	Fabrication of graphene▯ZnO heterostructure-based flexible and thin platform-based UV detector. **2022**, 33, 3880-3890	0
179	Cathodoluminescence in Ultrafast Electron Microscopy.. **2021**, 15, 19480-19489	1

178	Recent Advances in Fabricating Wurtzite AlN Film on (0001)-Plane Sapphire Substrate. **2022**, 12, 38		1
177	Reconfigurable Radio-Frequency High-Electron Mobility Transistors via Ferroelectric-Based Gallium Nitride Heterostructure. *Advanced Electronic Materials*, 2101406	6.4	2
176	Toward □56 mm Al-Polar AlN Single Crystals Grown by the Homoepitaxial PVT Method.		1
175	Plasmon-Phonon Coupling in Electrostatically Gated □GaO Films with Mobility Exceeding 200 cm V s.. **2022**,		3
174	Volumetric incorporation of NV diamond emitters in nanostructured F2 glass magneto-optical fiber probes. **2022**,		0
173	A low-field electron mobility analysis of cubic boron nitride. **2022**, 114776		0
172	Identifying chemical and physical changes in wide-gap semiconductors using real-time and near ambient-pressure XPS.. **2022**,		0
171	Record >10 MV/cm mesa breakdown fields in Al0.85Ga0.15N/Al0.6Ga0.4N high electron mobility transistors on native AlN substrates. **2022**, 120, 172106		1
170	Origin of the discrepancy between the fundamental and optical gaps and native defects in two dimensional ultra-wide bandgap semiconductor: Gallium thiophosphate. **2022**, 120, 172108		
169	A Review of Ultrawide Bandgap Materials: Properties, Synthesis, and Devices.		1
168	Recent advances in optoelectronic and microelectronic devices based on ultrawide-bandgap semiconductors. **2022**, 83, 100397		1
167	A perspective on multi-channel technology for the next-generation of GaN power devices. **2022**, 120, 190501		2
166	Improved barrier homogeneity in Pt/Al0.75Ga0.25N Schottky barrier diodes by graphene interlayer. **2022**, 55, 304001		0
165	Study of horizontal and vertical uniformity of B-doped layer on mosaic single crystal diamond wafers by using hot-filament chemical vapor deposition. **2022**, 2, 46-52		1
164	Realization of homojunction PN AlN diodes. **2022**, 131, 175701		4
163	Electronic excitation-induced tunneling and charge-trapping explored by in situ electrical characterization in Ni/HfO2/□Ga2O3 metal□oxide□semiconductor capacitors. **2022**, 281, 115716		1
162	Elastic strain modulation of energy bandgap in □Ga2O3 sheet: experimental and computational investigations. **2022**, 100697		
161	Prediction on Raman Spectra of Intrinsic Two-Dimensional Ga2O3 Monolayer.		0

160	Epitaxial growth of □Ga2O3 by hot-wall MOCVD. **2022**, 12, 055022	1
159	Pseudomorphic growth of thick Al0.6Ga0.4N epilayers on AlN substrates. **2022**, 120, 202105	1
158	On the terahertz response of metal-gratings on anisotropic dielectric substrates and its prospective application for anisotropic refractive index characterization. **2022**, 131, 193101	1
157	Solar-blind ultraviolet photodetectors based on Ta-doped □Ga2O3 heteroepitaxial films. **2022**, 129, 112491	1
156	Accurate Band Offset Prediction of Sc2O3/GaN and □Al2O3/GaN Heterojunctions Using a Dielectric-Dependent Hybrid Functional.	0
155	Temperature-Dependent Study of □Ga2O3 Solar-Blind Photodetectors.	
154	Study of SnO/e-Ga2O3 p□ diodes in planar geometry. **2022**, 40, 042701	3
153	Vertical 3D diamond field effect transistors with nanoscale gate-all-around. **2022**, 148, 106841	
152	Structural and electronic properties of pristine and hydrogen-terminated c-BN (100) surfaces.	0
151	A Co-Design Approach to Understanding the Impact of Ultra-Wide-Bandgap Semiconductor Material Properties on Power Device Performance. **2022**,	
150	Surface nanopatterning of amorphous gallium oxide thin film for enhanced solar-blind photodetection. **2022**, 33, 375302	0
149	Evolution and Present State-of-Art Gallium Oxide HEMTs□The Key Takeaways. **2023**, 209-219	
148	A Comprehensive Review on Recent Developments in Ohmic and Schottky Contacts on Ga2O3 for Device Applications.	3
147	Hole conductivity through a defect band in ZnGa2O4. **2022**, 6,	0
146	Upper limits to thermal conductance across gallium nitride interfaces: Predictions and measurements. **2022**, 83-102	
145	Room-temperature bonded thermally conductive semiconductor interfaces. **2022**, 359-377	
144	Projecting Power Converter Specific Power Through 2050 for Aerospace Applications. **2022**,	0
143	Precision Layered Stealth Dicing of SiC Wafers by Ultrafast Lasers. **2022**, 13, 1011	0

142	Comparative Spectroscopic Study of Aluminum Nitride Grown by MOCVD in H2 and N2 Reaction Environment. **2022**, 12, 924	0
141	Two-dimensional polarization doping of GaN heterojunction and its potential for realizing lateral p□ junction devices. **2022**, 128,	0
140	Electrical performance analysis of Al0.5Ga0.5□N/AlN/Sapphire-based MSM UV detector for high photocurrent.	
139	In-depth investigation of low-energy proton irradiation effect on the structural and photoresponse properties of □Ga2O3 thin films. **2022**, 110944	1
138	Optical thermometry of anisotropic semimetal of WTe2 using polarization-sensitive microscopy.	
137	Achieving high pulse charge□ischarge energy storage properties and temperature stability of (Ba0.98-Li0.02La)(Mg0.04Ti0.96)O3 lead-free ceramics via bandgap and defect engineering. **2022**, 450, 137814	1
136	Impact of dislocation density on the ferroelectric properties of ScAlN grown by molecular beam epitaxy. **2022**, 121, 042108	5
135	Demonstration of 4.7 kV breakdown voltage in NiO/□Ga2O3 vertical rectifiers. **2022**, 121, 042105	7
134	First principles study on the lattice thermal conductivity of □phase Ga2O3. **2022**, 40, 052801	1
133	Preferential Zinc Sputtering During Growth of Aluminum Doped Zinc Oxide Thin Films by Radio Frequency Magnetron Sputtering.	0
132	Donor doping of corundum (AlxGa1□)2O3. **2022**, 121, 042110	0
131	Properties for Thermally Conductive Interfaces with Wide Band Gap Materials. **2022**, 14, 36178-36188	0
130	Ultra-wide bandgap semiconductor Ga2O3 power diodes. **2022**, 13,	22
129	Growth and Characterization of Boron Nitride/Diamond Heterostructures. **2022**, 28, 2830-2831	
128	Increasing the mobility and power-electronics figure of merit of AlGaN with atomically thin AlN/GaN digital-alloy superlattices. **2022**, 121, 032105	1
127	On the conduction mechanism in compositionally graded AlGaN. **2022**, 121, 072106	2
126	Defect regulation of AlN films based on Al-rich AlN targets. **2022**, 37, 105001	
125	Threading dislocation lines and their impact on bulk cubic boron nitride□ low-field electron transport response. **2022**, 114925	

124	Temperature Dependence of Anisotropic Complex Conductivity of □Ga2O3.	0
123	CVD Nanocrystalline Diamond Film Doped with Eu. **2022**, 15, 5788	0
122	Direct Determination of Band Gap of Defects in a Wide Band Gap Semiconductor. **2022**, 14, 36875-36881	
121	High Thermal Conductivity in Wafer-Scale Cubic Silicon Carbide Crystals.	
120	A single-crystalline diamond X-ray detector based on direct sp3-to-sp2 conversed graphene electrodes. **2022**, 2, 94-99	0
119	Band-gap engineering of rutile-structured SnO2□GeO2□SiO2 alloy system. **2022**, 6,	0
118	Threshold voltage control with high temperature gate-oxide annealing in ultrawide bandgap AlGaN-channel MOSHFETs.	1
117	A deep-ultraviolet photodetector of a □Ga2O3/CuBiI4 heterojunction highlighting ultra-high sensitivity and responsivity. **2022**, 757, 139397	0
116	A strategic review on gallium oxide based power electronics: Recent progress and future prospects. **2022**, 33, 104244	2
115	BOLTZMANN TRANSPORT EQUATION FOR THERMAL TRANSPORT IN ELECTRONIC MATERIALS AND DEVICES. **2022**, 24, 131-172	0
114	Test of kW Class Photonic Microwave Generation Using Vanadium-compensated 6H-SiC PCSS and Burst-mode-operation Pulse Laser. **2022**, 1-7	0
113	Electronic, mechanical and piezoelectric properties of glass-like complex Na2Si1□GexO3 (x = 0.0, 0.25, 0.50, 0.75, 1.0). **2022**, 12, 27666-27678	0
112	Investigating the effect of number of metal electrodes on performance parameters of AlGaN MSM photodetectors. **2022**, 15,	0
111	Full electric vehicles. **2022**, 659-679	0
110	Radiation-Tolerant, High-Power Density GaN Drop-On Point-of-Load Converters. **2022**,	0
109	Device-level Transient Cooling of □Ga2O3 MOSFETs. **2022**,	0
108	A Reference Source Circuit Design for Voltage Controlled Oscillator Chips. **2022**, 2022, 1-10	0
107	GaN-on-GaN p-i-n diodes with avalanche capability enabled by eliminating surface leakage with hydrogen plasma treatment. **2022**, 121, 092103	2

106	Properties and device performance of BN thin films grown on GaN by pulsed laser deposition. **2022**, 121, 092105	0
105	Monoclinic tungsten trioxide (WO3) thin films using spraying pyrolysis: electrical, structural and stoichiometric ratio at different molarity. **2022**, 17, 1029-1043	0
104	AlScO3 perovskite�An ~8 eV bandgap oxide predicted to exhibit low small hole polaron ionization energies and p-type conductivity at elevated temperatures. **2022**, 121, 102103	0
103	Wide Gap p-type NiO-Ga2O3 alloy via Electronic Band Engineering. **2022**, 167275	0
102	P212121-C16: An ultrawide bandgap and ultrahard carbon allotrope with the bandgap larger than diamond. **2022**, 17,	1
101	Natural band alignment of BAlN and BGaN alloys. **2022**, 55, 455102	0
100	A Deep-Ultraviolet Photodetector of a Hybrid Organic-Inorganic p-CoPc/n-Ga2O3 Heterostructure Highlighting Ultra-Sensitive. **2022**, 12, 1284	1
99	Growth of Thin AlN films on Si Wafers by Reactive Magnetron Sputtering: Role of Processing Pressure, Magnetron Power and Nitrogen/Argon Gas Flow Ratio. **2022**, 12, 1379	0
98	Electronic and optical characterization of bulk single crystals of cubic boron nitride (cBN). **2022**, 12, 095303	1
97	Effects of Boron Doping on the Bulk and Surface Acoustic Phonons in Single-Crystal Diamond. **2022** , 14, 42223-42231	0
96	Stacking-dependent deep level emission in boron nitride. **2022**, 6,	0
95	Impact of doping and geometry on breakdown voltage of semi-vertical GaN-on-Si MOS capacitors. **2022**, 114620	0
94	Vertical GaN junction barrier Schottky diodes with near-ideal performance using Mg implantation activated by ultra-high-pressure annealing. **2022**, 15, 101004	0
93	Thermal conductivity of AlxGa1�N (0�1. **2022**, 6,	0
92	State-of-the-Art �Ga2O3 Field-Effect Transistors for Power Electronics.	0
91	Electrical properties of Si/diamond heterojunction diodes fabricated by using surface activated bonding. **2022**, 109425	0
90	Interfacial band parameters of ultrathin ALD�Al2O3, ALD�HfO2, and PEALD�AlN/ALD�Al2O3 on c-plane, Ga-face GaN through XPS measurements. **2022**, 132, 135302	1
89	Growth characteristics and properties of Ga2O3 films fabricated by atomic layer deposition technique.	0

88	Studying the effect of mobility models using TCAD simulation on the performance of AlGaN/AlN metal semiconductor metal metector. **2022**,	0
87	Self-Induced Core▯Shell InAlN Nanorods: Formation and Stability Unraveled by Ab Initio Simulations.	0
86	A Review on Gallium Oxide Materials from Solution Processes. **2022**, 12, 3601	0
85	A Novel Insight into the Strain Effect of T 2g Mode Splitting and Bandgap in Diamond. 2200344	0
84	Crystallographic Tilt in Aluminum Gallium Nitride Epilayers Grown on Miscut Aluminum Nitride Substrates. 2200323	0
83	Gallium Oxide for Gas Sensor Applications: A Comprehensive Review. **2022**, 15, 7339	1
82	Trench edge termination in a GaN-based power device. **2022**,	0
81	Breakdown characteristics of trench edge terminated SiC Schottky diode. **2022**,	0
80	Self-heating in ultra-wide bandgap n-type SrSnO3 thin films. **2022**, 121, 162102	0
79	Study of Vertical Ga2O3 FinFET Short Circuit Ruggedness using Robust TCAD Simulation.	0
78	Growth-microstructure-thermal property relations in AlN thin films. **2022**, 132, 175108	0
77	Selectively patterned Mg-doped GaN by SiNx-driven hydrogen injection. **2022**, 40, 062201	0
76	Wafer-scale synthesis of wide bandgap 2D GeSe2 layers for self-powered ultrasensitive UV photodetection and imaging. **2022**, 104, 107972	6
75	Stimulated emission in heavily doped Al0.68Ga0.32N:Si structures with external cavity. **2022**, 252, 119392	0
74	Elastic anisotropy and thermal properties of M-B-N (M = Al, Ga) systems using first-principles calculations. **2023**, 207, 111626	0
73	Phonon thermal transport and its tunability in GaN for near-junction thermal management of electronics: A review. **2023**, 200, 123497	0
72	Pt/ZnGa2O4 Schottky Barrier Diodes Fabricated by Using Single Crystal n-ZnGa2O4 (111) Substrates. **2022**, 1-1	0
71	High-Temperature Forward and Reverse Current Transport Mechanisms of AlGaN-Based Solar-Blind UV Photodetector. **2022**, 1-7	0

70	High Breakdown Electric Field Diamond Schottky Barrier Diode With SnO$_{text{2}}$ Field Plate. **2022**, 1-5	0
69	Improved electrical performance of lateral Ga2O3 MOSFETs utilizing slanted fin channel structure. **2022**, 121, 202101	0
68	High electron mobility in AlN:Si by point and extended defect management. **2022**, 132, 185703	1
67	Temperature dependence of onff ratio and reverse recovery time in NiO/Ga2O3 heterojunction rectifiers. **2022**, 40, 063407	1
66	Investigation of the Optoelectronic and Photovoltaic Properties of YxIn1-XP Alloys Using First Principles Calculations. **2022**,	0
65	Nanostructured Diamond Composites for Multifunctional Sensing Applications. **2022**, 10, 488	0
64	Toward gallium oxide power electronics. **2022**, 378, 724-725	3
63	Multidimensional device architectures for efficient power electronics.	6
62	Conventional and topologically optimized polymer manifolds for direct cooling of power electronics. **2023**, 201, 123611	0
61	Breakdown voltage enhancement in Ga2O3 based Schottky diode. **2022**,	0
60	Spontaneously Oxidized Cu$_{textit{x}}$O/$beta$-Ga$_{text{2}}$OTEXPRESERVE3 p-n Junction for Self-Powered Deep-Ultraviolet Photodetection. **2022**, 1-5	0
59	Design of Variable-Load Class-E Inverter Using Laplace Based Steady-State Modeling. **2022**,	0
58	Toward AlGaN channel HEMTs on AlN: Polarization-induced 2DEGs in AlN/AlGaN/AlN heterostructures. **2022**, 10, 111120	2
57	High thermal conductivity in wafer-scale cubic silicon carbide crystals. **2022**, 13,	0
56	Reverse Breakdown Time of Wide Bandgap Diodes. **2022**,	0
55	Theoretical study of the interface engineering for H-diamond field effect transistors with h-BN gate dielectric and graphite gate. **2022**, 121, 211601	0
54	Atomic-Level Sn Doping Effect in Ga2O3 Films Using Plasma-Enhanced Atomic Layer Deposition. **2022**, 12, 4256	1
53	Growth and Optical Properties of Ga2O3 Layers of Different Crystalline Modifications. **2022**, 12, 1802	0

52	Computational Identification of Ternary Wide-Band-Gap Oxides for High-Power Electronics. **2022**, 1,	0
51	Numerical Modelling for the Experimental Improvement of Growth Uniformity in a Halide Vapor Phase Epitaxy Reactor for Manufacturing □Ga2O3 Layers. **2022**, 12, 1790	0
50	Temperature dependent breakdown characteristics of Ga2O3 based Schottky diode. **2022**,	0
49	Thickness Dependent Optical Properties of Amorphous/Polycrystalline Ga2O3 Thin Films Grown by Plasma-enhanced Atomic Layer Deposition. **2022**, 139655	0
48	Challenges and Opportunities for High-Power and High-Frequency AlGaN/GaN High-Electron-Mobility Transistor (HEMT) Applications: A Review. **2022**, 13, 2133	0
47	Study of a Solar-Blind Photodetector Based on an IZTO/□Ga2O3/ITO Schottky Diode.	0
46	A review of thermoreflectance techniques for characterizing wide bandgap semiconductors□ thermal properties and devices□temperatures. **2022**, 132, 220701	1
45	UV Light Irradiation Effects in P-Doped Diamonds: Total Content Determination of Phosphorus Donors. **2022**, 15, 9048	0
44	Power device breakdown mechanism and characterization: review and perspective.	1
43	Understanding the Breakdown Behavior of Ultrawide-Bandgap Boron Nitride Power Diodes Using Device Modeling. 2200397	0
42	Homoepitaxial growth of 3-inch single crystalline AlN boules by the physical vapor transport process. 9,	0
41	Recent progress of Ga2O3 power technology: large-area devices, packaging, and applications.	0
40	Aluminum nitride crystal-based photodetector with bias polarity-dependent spectral selectivity. **2023**, 41, 013204	0
39	Two-dimensional AlN/g-CNs van der Waals type-II heterojunction for water splitting.	0
38	Magnetic coupling for highly efficient and tunable emission in CsCdX3:Mn perovskites. **2023**, 257, 119657	0
37	Reducing the □Ga2O3 Epitaxy Temperature to 240 □C via Atomic Layer Plasma Processing.	0
36	Recent advances in single crystal narrow band-gap semiconductor nanomembranes and their flexible optoelectronic device applications: Ge, GeSn, InGaAs, and 2D materials.	0
35	High figure of merit extreme bandgap Al0.87Ga0.13N-Al0.64Ga0.36N heterostructures over bulk AlN substrates. **2023**, 16, 014005	0

34	Ultra-Wide Band Gap Ga2O3-on-SiC MOSFETs. **2023**, 15, 7137-7147	0
33	Low-Energy Ion-Induced Single-Event Burnout in Gallium Oxide Schottky Diodes. **2023**, 1-1	0
32	Thermal management and packaging of wide and ultra-wide bandgap power devices: a review and perspective.	0
31	The anisotropy dependence of deformation mechanism of cleavage planes in Ga2O3 single crystal. **2023**, 158, 107357	0
30	22-Watts Power Amplifier Design Using GaN HEMT. **2022**,	0
29	SiC and GaN Power Devices. **2023**, 47-104	0
28	Using machine learning with optical profilometry for GaN wafer screening. **2023**, 13,	0
27	Demonstration of self-aligned Ga2O3 doped MOSFETs with current density >550 mA/mm. **2023**, 122, 113506	0
26	Non-volatile tuning of normally-on and off states of deep depletion ZrO2/O-terminated high voltage diamond MOSFET. **2023**, 134, 109802	0
25	Effects of GaN channel downscaling in AlGaNGaN high electron mobility transistor structures grown on AlN bulk substrate. **2023**, 133, 145705	0
24	Large-area vertical-geometry Pt/(010) Ga2O3 Schottky barrier diodes and their temperature-dependent electrical properties. **2023**, 177, 111281	0
23	Energy management schemes, challenges and impacts of emerging inverter technology for renewable energy integration towards grid decarbonization. **2023**, 405, 137002	0
22	Catalyst-Free Ga2O3@a-Ga2O3 CoreShell nanorod arrays grown on Si substrate for High-performance self-powered solar-blind photoelectrochemical photodetection. **2023**, 624, 157149	0
21	Scintillation properties of (GaxAl1). **2023**, 208, 110896	0
20	Ultrawide-bandgap semiconductor of carbon-based materials for meta-photonics-heterostructure, lasers, and holographic displays. **2023**, 33,	0
19	Secondary electron emission and vacuum electronics. **2023**, 133, 050901	0
18	Two-Photon Interface of Nuclear Spins Based on the Optonuclear Quadrupolar Effect. **2023**, 13,	0
17	Directional Carrier Transport in Micrometer-Thick Gallium Oxide Films for High-Performance Deep-Ultraviolet Photodetection. **2023**, 15, 10868-10876	0

16	Transient Thermal Management of a GaO MOSFET Using a Double-Side Diamond Cooling Approach. **2023**, 70, 1628-1635	0
15	A strategy of high-sensitivity solar-blind photodetector for fabricating graphene surface modification ZnGa2O4/Ga2O3 core-shell structure nanowire networks. **2023**, 49, 18248-18254	0
14	Recent progress of Ga2O3 materials and devices based on the low-cost, vacuum-free Mist-CVD epitaxial growth method. **2023**,	0
13	Small Electron Polaron in Carbon-Doped Cubic Boron Nitride. **2023**, 5, 1707-1714	0
12	Electrical and thermal characterisation of liquid metal thin-film Ga$$_2$$O$$_3$$SiO$$_2$$ heterostructures. **2023**, 13,	0
11	Synthesis and Characteristics of Transferrable Single-Crystalline AlN Nanomembranes. 2201309	0
10	Antireflective GaN Nanoridge Texturing by Metal-Assisted Chemical Etching via a Thermally Dewetted Pt Catalyst Network for Highly Responsive Ultraviolet Photodiodes. **2023**, 15, 13343-13352	0
9	High Al-content AlGaN channel high electron mobility transistors on silicon substrate. **2023**, 3, 100114	0
8	MetalSemiconductorMetal Photodetectors Based on MgGaO Thin Films.	0
7	Ab Initio Prediction of Ultra-Wide Band Gap B x Al 1x N Materials.	0
6	Highly Sensitive Ultraviolet Photodetector Based on an AlGaN/GaN HEMT with Graphene-On-p-GaN Mesa Structure.	0
5	Enhanced hydrogen generation via overall water splitting using novel MoS2-BN nanoflowers assembled TiO2 ternary heterostructures. **2023**,	0
4	A dynamically tunable discrete-element transmission line pulse generator. **2023**, 13, 045205	0
3	High conductivity in Ge-doped AlN achieved by a non-equilibrium process. **2023**, 122, 142108	0
2	Function of a Dual-Active-Layer Amorphous IndiumGalliumZinc Oxide Thin-Film Transistor with Ultraviolet-Induced Effects.	0
1	Fast Response GaN Nanoscale Air Channel Diodes with Highly Stable 10 mA Output Current toward Wafer-Scale Fabrication.	0