Yoshinao Kumagai

List of Publications by Year
in descending order

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111 papers	4,904 citations	147801 31 h-index	95266 68 g-index
111 all docs	111 docs citations	111 times ranked	2851 citing authors

#	Article	IF	Citations
1	Recent progress in Ga₂O₃power devices. Semiconductor Science and Technology, 2016, 31, 034001.	2.0	783
2	1-kV vertical Ga2O3 field-plated Schottky barrier diodes. Applied Physics Letters, 2017, 110, .	3.3	421
3	Preparation of Large Freestanding GaN Substrates by Hydride Vapor Phase Epitaxy Using GaAs as a Starting Substrate. Japanese Journal of Applied Physics, 2001, 40, L140-L143.	1.5	303
4	Homoepitaxial growth of Î²-Ga₂O₃layers by halide vapor phase epitaxy. Applied Physics Express, 2015, 8, 015503.	2.4	288
5	Temperature-dependent capacitanceâ€“voltage and currentâ€“voltage characteristics of Pt/Ga2O3 (001) Schottky barrier diodes fabricated on <i>n</i>â€“â€“Ga2O3 drift layers grown by halide vapor phase epitaxy. Applied Physics Letters, 2016, 108, .	3.3	268
6	Halide vapor phase epitaxy of Si doped Î²-Ga2O3 and its electrical properties. Thin Solid Films, 2018, 666, 182-184.	1.8	146
7	On the origin of the 265â€‰nm absorption band in AlN bulk crystals. Applied Physics Letters, 2012, 100, .	3.3	137
8	Current Aperture Vertical <inline-formula> <tex-math notation="LaTeX">eta </tex-math> </inline-formula>-Ga₂O₃ MOSFETs Fabricated by N- and Si-Ion Implantation Doping. IEEE Electron Device Letters, 2019, 40, 431-434.	3.9	135
9	Acceptor doping of <i>Î²</i>-Ga2O3 by Mg and N ion implantations. Applied Physics Letters, 2018, 113, .	3.3	129
10	Vertical Ga₂O₃ Schottky Barrier Diodes With Guard Ring Formed by Nitrogen-Ion Implantation. IEEE Electron Device Letters, 2019, 40, 1487-1490.	3.9	126
11	Preparation of a Freestanding AlN Substrate from a Thick AlN Layer Grown by Hydride Vapor Phase Epitaxy on a Bulk AlN Substrate Prepared by Physical Vapor Transport. Applied Physics Express, 2012, 5, 055504.	2.4	121
12	Band-to-band transitions, selection rules, effective mass, and excitonic contributions in monoclinic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Î²</mml:mi><mml:mtext>â^’</mml:mtext><mml:msub>< mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2017, 96, .	3.2	117
13	Deep-Ultraviolet Light-Emitting Diodes Fabricated on AlN Substrates Prepared by Hydride Vapor Phase Epitaxy. Applied Physics Express, 2012, 5, 122101.	2.4	114
14	Performance and Reliability of Deep-Ultraviolet Light-Emitting Diodes Fabricated on AlN Substrates Prepared by Hydride Vapor Phase Epitaxy. Applied Physics Express, 2013, 6, 092103.	2.4	112
15	Thermodynamic study of Î²-Ga2O3 growth by halide vapor phase epitaxy. Journal of Crystal Growth, 2014, 405, 19-22.	1.5	100
16	Vacancy compensation and related donor-acceptor pair recombination in bulk AlN. Applied Physics Letters, 2013, 103, .	3.3	80
17	Growth of thick AlN layers by hydride vapor-phase epitaxy. Journal of Crystal Growth, 2005, 281, 62-67.	1.5	79
18	Enhancement-Mode eta -Ga₂O₃ Current Aperture Vertical MOSFETs With N-Ion-Implanted Blocker. IEEE Electron Device Letters, 2020, 41, 296-299.	3.9	65

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19	Polarity dependence of AlN {0001} decomposition in flowing H2. Journal of Crystal Growth, 2007, 305, 366-371.	1.5	61
20	The role of the carbon-silicon complex in eliminating deep ultraviolet absorption in AlN. Applied Physics Letters, 2014, 104, .	3.3	59
21	Fabrication of vertical Schottky barrier diodes on n-type freestanding AlN substrates grown by hydride vapor phase epitaxy. Applied Physics Express, 2015, 8, 061003.	2.4	51
22	Surface polarity dependence of decomposition and growth of GaN studied using in situ gravimetric monitoring. Journal of Crystal Growth, 2002, 246, 230-236.	1.5	47
23	Investigation of void formation beneath thin AlN layers by decomposition of sapphire substrates for self-separation of thick AlN layers grown by HVPE. Journal of Crystal Growth, 2010, 312, 2530-2536.	1.5	45
24	Structural and Optical Properties of Carbon-Doped AlN Substrates Grown by Hydride Vapor Phase Epitaxy Using AlN Substrates Prepared by Physical Vapor Transport. Applied Physics Express, 2012, 5, 125501.	2.4	45
25	Anisotropic complex refractive index of Î²-Ga2O3 bulk and epilayer evaluated by terahertz time-domain spectroscopy. Applied Physics Letters, 2021, 118, .	3.3	45
26	Electron effective mass in Sn-doped monoclinic single crystal Î²-gallium oxide determined by mid-infrared optical Hall effect. Applied Physics Letters, 2018, 112, .	3.3	43
27	Thermal conductivity of single-crystalline AlN. Applied Physics Express, 2018, 11, 071001.	2.4	42
28	High-speed epitaxial growth of AlN above by hydride vapor phase epitaxy. Journal of Crystal Growth, 2007, 300, 42-44.	1.5	38
29	Thermal stability of Î²-Ga₂O₃in mixed flows of H₂and N₂. Japanese Journal of Applied Physics, 2015, 54, 041102.	1.5	38
30	Self-Separation of a Thick AlN Layer from a Sapphire Substrate via Interfacial Voids Formed by the Decomposition of Sapphire. Applied Physics Express, 0, 1, 045003.	2.4	36
31	Electron paramagnetic resonance and theoretical study of gallium vacancy in <i>Î²</i> -Ga2O3. Applied Physics Letters, 2020, 117, .	3.3	33
32	High-temperature growth of thick AlN layers on sapphire (0 0 0 1) substrates by solid source halide vapor-phase epitaxy. Journal of Crystal Growth, 2008, 310, 4016-4019.	1.5	31
33	Improvement of AlN crystalline quality with high epitaxial growth rates by hydride vapor phase epitaxy. Journal of Crystal Growth, 2007, 305, 355-359.	1.5	28
34	Investigation of Substrate Orientation Dependence for the Growth of GaN on GaAs (111)A and (111)B Surfaces by Metalorganic Hydrogen Chloride Vapor-Phase Epitaxy. Japanese Journal of Applied Physics, 2000, 39, L149-L151.	1.5	27
35	Growth of Thick Hexagonal GaN Layer on GaAs (111)A Surfaces for Freestanding GaN by Metalorganic Hydrogen Chloride Vapor Phase Epitaxy. Japanese Journal of Applied Physics, 2000, 39, L703-L706.	1.5	26
36	Preparation of a Freestanding AlN Substrate by Hydride Vapor Phase Epitaxy at 1230 Â°C Using (111)Si as a Starting Substrate. Japanese Journal of Applied Physics, 2007, 46, L389-L391.	1.5	26

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37	Preparation of 2-in.-diameter (001) Î²-Ga2O3homoepitaxial wafers by halide vapor phase epitaxy. Japanese Journal of Applied Physics, 2017, 56, 110310.	1.5	26
38	The influence of point defects on the thermal conductivity of AlN crystals. Journal of Applied Physics, 2018, 123, 185107.	2.5	26
39	Thick and high-quality GaN growth on GaAs (111) substrates for preparation of freestanding GaN. Journal of Crystal Growth, 2002, 246, 215-222.	1.5	24
40	Hydride vapor phase epitaxy of InN by the formation of InCl3 using In metal and Cl2. Journal of Crystal Growth, 2007, 300, 57-61.	1.5	24
41	Influence of lattice polarity on wurzite GaN{0001} decomposition as studied by in situ gravimetric monitoring method. Journal of Crystal Growth, 2002, 237-239, 1143-1147.	1.5	23
42	Ga<inf>2</inf>O<inf>3</inf> Schottky barrier diodes with n[−]-Ga<inf>2</inf>O<inf>3</inf> drift layers grown by HVPE. , 2015, , .		23
43	Comparison of O2 and H2O as oxygen source for homoepitaxial growth of Î²-Ga2O3 layers by halide vapor phase epitaxy. Journal of Crystal Growth, 2018, 492, 39-44.	1.5	23
44	Thermodynamic analysis of InN and InxGa1â^ˆxN MOVPE using various nitrogen sources. Journal of Crystal Growth, 2004, 272, 341-347.	1.5	20
45	HVPE growth of AlxGa1â^ˆxN ternary alloy using AlCl3 and GaCl. Journal of Crystal Growth, 2007, 305, 335-339.	1.5	20
46	Halogen-Transport Atomic-Layer Epitaxy of Cubic GaN Monitored byIn SituGravimetric Method. Japanese Journal of Applied Physics, 1999, 38, 4980-4982.	1.5	19
47	Preparation of a crack-free AlN template layer on sapphire substrate by hydride vapor-phase epitaxy at 1450Â°C. Journal of Crystal Growth, 2009, 311, 2837-2839.	1.5	19
48	Aperture-limited conduction and its possible mechanism in ion-implanted current aperture vertical <i>Î²</i> -Ga2O3 MOSFETs. Applied Physics Letters, 2021, 118, .	3.3	19
49	In situGravimetric Monitoring of Decomposition Rate on Surface of (10ar12)R-Plane Sapphire for High-Temperature Growth of Nonpolar AlN. Japanese Journal of Applied Physics, 2008, 47, 3434-3437.	1.5	17
50	Tri-halide vapor phase epitaxy of thick GaN using gaseous GaCl3 precursor. Journal of Crystal Growth, 2016, 456, 140-144.	1.5	17
51	Fe-doped semi-insulating GaN substrates prepared by hydride vapor-phase epitaxy using GaAs starting substrates. Journal of Crystal Growth, 2006, 296, 11-14.	1.5	16
52	Control of in-plane epitaxial relationship of c -plane AlN layers grown on a -plane sapphire substrates by hydride vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2028-2030.	0.8	16
53	High rate growth of In₂O₃ at 1000 Â°C by halide vapor phase epitaxy. Japanese Journal of Applied Physics, 2016, 55, 1202B3.	1.5	15
54	Homoepitaxial growth of AlN on a 2-in.-diameter AlN single crystal substrate by hydride vapor phase epitaxy. Journal of Crystal Growth, 2020, 540, 125644.	1.5	15

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55	Thermodynamic and experimental studies of Î²-Ga₂O₃ growth by metalorganic vapor phase epitaxy. Japanese Journal of Applied Physics, 2021, 60, 045505.	1.5	15
56	In situ gravimetric monitoring of halogen transport atomic layer epitaxy of cubic-GaN. Applied Surface Science, 2000, 159-160, 427-431.	6.1	13
57	First demonstration of vertical Ga₂O₃ MOSFET: Planar structure with a current aperture. , 2017, , .		13
58	Effect of substrate orientation on homoepitaxial growth of <i>Î²</i> -Ga2O3 by halide vapor phase epitaxy. Applied Physics Letters, 2022, 120, .	3.3	13
59	Influence of high-temperature processing on the surface properties of bulk AlN substrates. Journal of Crystal Growth, 2016, 446, 33-38.	1.5	12
60	Hydride Vapor Phase Epitaxy of GaN. Springer Series in Materials Science, 2010, , 31-60.	0.6	12
61	MOVPE-like HVPE of AlN using solid aluminum trichloride source. Journal of Crystal Growth, 2007, 298, 332-335.	1.5	11
62	Growth of thick AlxGa1â^'xN ternary alloy by hydride vapor-phase epitaxy. Journal of Crystal Growth, 2007, 300, 164-167.	1.5	11
63	Formation of AlN on sapphire surfaces by high-temperature heating in a mixed flow of H2 and N2. Journal of Crystal Growth, 2012, 350, 60-65.	1.5	11
64	Temperature dependence of Ga2O3 growth by halide vapor phase epitaxy on sapphire and <i>Î²</i> -Ga2O3 substrates. Applied Physics Letters, 2020, 117, .	3.3	11
65	Carrier Gas Dependence at Initial Processes fora-Plane AlN Growth onr-Plane Sapphire Substrates by Hydride Vapor Phase Epitaxy. Japanese Journal of Applied Physics, 2011, 50, 055501.	1.5	10
66	Effect of high temperature homoepitaxial growth of Î²-Ga2O3 by hot-wall metalorganic vapor phase epitaxy. Journal of Crystal Growth, 2022, 582, 126520.	1.5	10
67	Growth of Fe-Doped Thick GaN Layers for Preparation of Semi-Insulating GaN Substrates. Japanese Journal of Applied Physics, 2005, 44, L1072-L1075.	1.5	9
68	Step-flow growth of homoepitaxial ZnO thin layers by halide vapor phase epitaxy using ZnCl2 and H2O source gases. Journal of Crystal Growth, 2010, 312, 2324-2327.	1.5	9
69	Study of the Decomposition Processes of (0001)AlN in a Hydrogen Atmosphere. Japanese Journal of Applied Physics, 2007, 46, L1114-L1116.	1.5	8
70	High-Temperature Heat-Treatment ofc-,a-,r-, andm-Plane Sapphire Substrates in Mixed Gases of H2and N2. Japanese Journal of Applied Physics, 2013, 52, 08JB10.	1.5	8
71	Growth of III-Nitrides with Halide Vapor Phase Epitaxy (HVPE). , 2010, , 869-896.		8
72	In situ gravimetric monitoring of surface reactions between sapphire and NH3. Journal of Crystal Growth, 2009, 311, 3110-3113.	1.5	7

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73	Temperature dependence of InN growth on (0001) sapphire substrates by atmospheric pressure hydride vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2022-2024.	0.8	7
74	Characterization of trap states in buried nitrogen-implanted <i>Î²</i>-Ga2O3. Applied Physics Letters, 2020, 117, .	3.3	7
75	<i>Ab initio</i> calculation for an initial growth process of GaN on (0001) and (000$ ar 1 $) surfaces by vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, S301.	0.8	6
76	Thermodynamic analysis of InGaN-HVPE growth using group-III chlorides, bromides, and iodides. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 413-416.	0.8	6
77	Thermal and chemical stabilities of group-III sesquioxides in a flow of either N₂ or H₂. Japanese Journal of Applied Physics, 2016, 55, 1202BE.	1.5	6
78	Impact of crystallization manner of the buffer layer on the crystalline quality of GaN epitaxial layers on GaAs (111)A substrate. Journal of Crystal Growth, 2005, 275, e1149-e1154.	1.5	5
79	Investigation of halide vapor phase epitaxy of In2O3 on sapphire (0 0 0 1) substrates. Journal of Crystal Growth, 2021, 563, 126111.	1.5	5
80	Vinyltitanium as an initiator for the polymerization of acetylene. Journal of Polymer Science Part A, 2002, 40, 2663-2669.	2.3	4
81	Trade-off between thickness and temperature ramping rate of GaN buffer layer studied for high quality GaN growth on GaAs (111)A substrate. Journal of Crystal Growth, 2004, 268, 1-7.	1.5	4
82	Selective growth of InN on patterned GaAs(111)B substrate - influence of InN decomposition at the interface. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2019-2021.	0.8	4
83	Vacancy defects in UVâ€transparent HVPEâ€AlN. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 405-407.	0.8	4
84	Growth of Highly Crystalline GaN at High Growth Rate by Trihalide Vaporâ€Phase Epitaxy. Physica Status Solidi (B): Basic Research, 2020, 257, 1900564.	1.5	4
85	Growth of twin-free cubic In2O3(111) thick layers on c-plane sapphire substrates by halide vapor phase epitaxy. Japanese Journal of Applied Physics, 0, , .	1.5	4
86	Polarity control and preparation of AlN nanoâ€islands by hydride vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, S444.	0.8	3
87	Influence of substrate polarity of (0 0 0 1) and (0 0 01Â¯)GaN surfaces on hydride vapor-phase epitaxy of InN. Journal of Crystal Growth, 2010, 312, 651-655.	1.5	3
88	Theoretical investigation of the decomposition mechanism of AlN(0001) surface under a hydrogen atmosphere. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2265-2267.	0.8	3
89	First-principles study on the effect of surface hydrogen coverage on the adsorption process of ammonia on InN(0001) surfaces. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2267-2269.	0.8	3
90	Current Status of Gallium Oxide-Based Power Device Technology. , 2015, , .		3

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91	Study of Dislocations in Homoepitaxially and Heteroepitaxially Grown AlN Layers. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 2000465.	1.8	3
92	Hydride vapor phase epitaxy of Si-doped AlN layers using SiCl4 as a doping gas. Journal of Crystal Growth, 2020, 545, 125730.	1.5	3
93	Pulse laser assisted MOVPE for InGaN with high indium content. Physica Status Solidi A, 2004, 201, 2846-2849.	1.7	2
94	Carrier Gas Dependence at Initial Processes fora-Plane AlN Growth onr-Plane Sapphire Substrates by Hydride Vapor Phase Epitaxy. Japanese Journal of Applied Physics, 2011, 50, 055501.	1.5	2
95	Theoretical study on the influence of surface hydrogen coverage on the initial growth process of AlN(0001) surfaces. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1577-1580.	0.8	2
96	Ga2O3 field-plated schottky barrier diodes with a breakdown voltage of over 1 kV. , 2016, , .		2
97	Enhancement-Mode Current Aperture Vertical Ga₂O₃ MOSFETs. , 2019, , .		2
98	Lattice bow in thick, homoepitaxial GaN layers for vertical power devices. Journal of Crystal Growth, 2020, 539, 125643.	1.5	2
99	Investigation of etching characteristics of HVPE-grown c-In2O3 layers by hydrogen-environment anisotropic thermal etching. Journal of Crystal Growth, 2021, 575, 126338.	1.5	2
100	Suppression of twin formation for the growth of InN(10-1-3) on GaAs(110) by metalorganic vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 472-475.	0.8	1
101	Effect of High NH3Input Partial Pressure on Hydride Vapor Phase Epitaxy of InN Using Nitrided (0001) Sapphire Substrates. Japanese Journal of Applied Physics, 2013, 52, 08JD05.	1.5	1
102	Formation mechanism of AlN whiskers on sapphire surfaces heat-treated in a mixed flow of H2and N2. Japanese Journal of Applied Physics, 2016, 55, 05FF01.	1.5	1
103	Recent Advances in Ga2O3 MOSFET Technologies. , 2018, , .		1
104	Halide Vapor Phase Epitaxy 1. Springer Series in Materials Science, 2020, , 185-202.	0.6	1
105	Influence of growth temperature on the twin formation of InN{10$ ar 1 $3} on GaAs(110) by metalorganic vapor phase epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 677-680.	0.8	0
106	Invited: Process and Characterization of Vertical Ga2O3 Transistors. , 2019, , .		0
107	Growth of Single Crystalline c-In2O3(111) Layers on Off-Axis c-Plane Sapphire Substrates by Halide Vapor Phase Epitaxy. , 2019, , .		0
108	Comment on â€œCharacteristics of Multi-photon Absorption in a <i>Î²</i>-Ga₂O₃ Single Crystalâ€•[J. Phys. Soc. Jpn. 88, 113701 (2019)]. Journal of the Physical Society of Japan, 2020, 89, 036001.	1.6	0

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109	Gallium Oxide Schottky Barrier Diodes. IEEJ Transactions on Electronics, Information and Systems, 2016, 136, 479-483.	0.2	0
110	Terahertz time-domain spectroscopy of wide-bandgap semiconductors GaN and Î²-Ga2O3. , 2021, , .		0
111	Electrical properties of eta-Ga2O3 homoepitaxial layer measured by terahertz time-domain spectroscopy. , 2020, , .		0