Yoshinao Kumagai

List of Publications by Citations

106 papers	3,704 citations	27 h-index	59 g-index
111 ext. papers	4,309 ext. citations	2 avg, IF	5.23 L-index

#	Paper	IF	Citations
106	Recent progress in Ga2O3power devices. *Semiconductor Science and Technology*, **2016**, 31, 034001	1.8	577
105	1-kV vertical Ga2O3 field-plated Schottky barrier diodes. *Applied Physics Letters*, **2017**, 110, 103506	3.4	322
104	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	1.4	269
103	Homoepitaxial growth of Ga2O3layers by halide vapor phase epitaxy. *Applied Physics Express*, **2015**, 8, 015503	2.4	220
102	Temperature-dependent capacitanceoltage and currentoltage characteristics of Pt/Ga2O3 (001) Schottky barrier diodes fabricated on nGa2O3 drift layers grown by halide vapor phase epitaxy. *Applied Physics Letters*, **2016**, 108, 133503	3.4	210
101	On the origin of the 265 nm absorption band in AlN bulk crystals. *Applied Physics Letters*, **2012**, 100, 191914	3.4	108
100	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	100
99	Deep-Ultraviolet Light-Emitting Diodes Fabricated on AlN Substrates Prepared by Hydride Vapor Phase Epitaxy. *Applied Physics Express*, **2012**, 5, 122101	2.4	99
98	Current Aperture Vertical $beta$ -Ga2O3 MOSFETs Fabricated by N- and Si-Ion Implantation Doping. *IEEE Electron Device Letters*, **2019**, 40, 431-434	4.4	96
97	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	95
96	Acceptor doping of Ga2O3 by Mg and N ion implantations. *Applied Physics Letters*, **2018**, 113, 102103	3.4	93
95	Halide vapor phase epitaxy of Si doped Ga2O3 and its electrical properties. *Thin Solid Films*, **2018**, 666, 182-184	2.2	82
94	Band-to-band transitions, selection rules, effective mass, and excitonic contributions in monoclinic Ga2O3. *Physical Review B*, **2017**, 96,	3.3	78
93	Thermodynamic study of Ga2O3 growth by halide vapor phase epitaxy. *Journal of Crystal Growth*, **2014**, 405, 19-22	1.6	77
92	Growth of thick AlN layers by hydride vapor-phase epitaxy. *Journal of Crystal Growth*, **2005**, 281, 62-67	1.6	72
91	. *IEEE Electron Device Letters*, **2019**, 40, 1487-1490	4.4	71
90	Vacancy compensation and related donor-acceptor pair recombination in bulk AlN. *Applied Physics Letters*, **2013**, 103, 161901	3.4	64

89	Polarity dependence of AlN {0001} decomposition in flowing H2. *Journal of Crystal Growth*, **2007**, 305, 366-371	1.6	55
88	The role of the carbon-silicon complex in eliminating deep ultraviolet absorption in AlN. *Applied Physics Letters*, **2014**, 104, 202106	3.4	50
87	Surface polarity dependence of decomposition and growth of GaN studied using in situ gravimetric monitoring. *Journal of Crystal Growth*, **2002**, 246, 230-236	1.6	41
86	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	1.6	39
85	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	38
84	. *IEEE Electron Device Letters*, **2020**, 41, 296-299	4.4	38
83	High-speed epitaxial growth of AlN above by hydride vapor phase epitaxy. *Journal of Crystal Growth* , **2007**, 300, 42-44	1.6	35
82	Electron effective mass in Sn-doped monoclinic single crystal gallium oxide determined by mid-infrared optical Hall effect. *Applied Physics Letters*, **2018**, 112, 012103	3.4	34
81	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	33
80	Self-Separation of a Thick AlN Layer from a Sapphire Substrate via Interfacial Voids Formed by the Decomposition of Sapphire. *Applied Physics Express*, **2008**, 1, 045003	2.4	29
79	Thermal conductivity of single-crystalline AlN. *Applied Physics Express*, **2018**, 11, 071001	2.4	27
78	High-temperature growth of thick AlN layers on sapphire (0001) substrates by solid source halide vapor-phase epitaxy. *Journal of Crystal Growth*, **2008**, 310, 4016-4019	1.6	26
77	Improvement of AlN crystalline quality with high epitaxial growth rates by hydride vapor phase epitaxy. *Journal of Crystal Growth*, **2007**, 305, 355-359	1.6	25
76	Thermal stability of Ga2O3in mixed flows of H2and N2. *Japanese Journal of Applied Physics*, **2015**, 54, 041102	1.4	24
75	Preparation of a Freestanding AlN Substrate by Hydride Vapor Phase Epitaxy at 1230 C Using (111)Si as a Starting Substrate. *Japanese Journal of Applied Physics*, **2007**, 46, L389-L391	1.4	24
74	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	1.4	24
73	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	1.6	22
72	Thick and high-quality GaN growth on GaAs (1 1 1) substrates for preparation of freestanding GaN. *Journal of Crystal Growth*, **2002**, 246, 215-222	1.6	22

71	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	1.4	22
70	Hydride vapor phase epitaxy of InN by the formation of InCl3 using In metal and Cl2. *Journal of Crystal Growth*, **2007**, 300, 57-61	1.6	21
69	Halogen-Transport Atomic-Layer Epitaxy of Cubic GaN Monitored byIn SituGravimetric Method. *Japanese Journal of Applied Physics*, **1999**, 38, 4980-4982	1.4	19
68	Electron paramagnetic resonance and theoretical study of gallium vacancy in □Ga2O3. *Applied Physics Letters*, **2020**, 117, 032101	3.4	19
67	Ga2O3 Schottky barrier diodes with n□Ga2O3 drift layers grown by HVPE **2015**,		17
66	Thermodynamic analysis of InN and InxGa1□N MOVPE using various nitrogen sources. *Journal of Crystal Growth*, **2004**, 272, 341-347	1.6	17
65	In situGravimetric Monitoring of Decomposition Rate on Surface of (10bar12)R-Plane Sapphire for High-Temperature Growth of Nonpolar AlN. *Japanese Journal of Applied Physics*, **2008**, 47, 3434-3437	1.4	16
64	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		15
63	Preparation of a crack-free AlN template layer on sapphire substrate by hydride vapor-phase epitaxy at 1450□C. *Journal of Crystal Growth*, **2009**, 311, 2837-2839	1.6	15
62	HVPE growth of AlxGa1□N ternary alloy using AlCl3 and GaCl. *Journal of Crystal Growth*, **2007**, 305, 335-339	1.6	15
61	Fe-doped semi-insulating GaN substrates prepared by hydride vapor-phase epitaxy using GaAs starting substrates. *Journal of Crystal Growth*, **2006**, 296, 11-14	1.6	15
60	Preparation of 2-in.-diameter (001) □Ga2O3homoepitaxial wafers by halide vapor phase epitaxy. *Japanese Journal of Applied Physics*, **2017**, 56, 110310	1.4	14
59	Comparison of O2 and H2O as oxygen source for homoepitaxial growth of □Ga2O3 layers by halide vapor phase epitaxy. *Journal of Crystal Growth*, **2018**, 492, 39-44	1.6	14
58	Tri-halide vapor phase epitaxy of thick GaN using gaseous GaCl3 precursor. *Journal of Crystal Growth*, **2016**, 456, 140-144	1.6	12
57	First demonstration of vertical Ga2O3 MOSFET: Planar structure with a current aperture **2017**,		12
56	In situ gravimetric monitoring of halogen transport atomic layer epitaxy of cubic-GaN. *Applied Surface Science*, **2000**, 159-160, 427-431	6.7	12
55	The influence of point defects on the thermal conductivity of AlN crystals. *Journal of Applied Physics*, **2018**, 123, 185107	2.5	12
54	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	1.6	11

53	MOVPE-like HVPE of AlN using solid aluminum trichloride source. *Journal of Crystal Growth*, **2007**, 298, 332-335	1.6	11
52	Hydride Vapor Phase Epitaxy of GaN. *Springer Series in Materials Science*, **2010**, 31-60	0.9	11
51	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	1.4	10
50	Influence of high-temperature processing on the surface properties of bulk AlN substrates. *Journal of Crystal Growth*, **2016**, 446, 33-38	1.6	10
49	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	1.6	9
48	Growth of Fe-Doped Thick GaN Layers for Preparation of Semi-Insulating GaN Substrates. *Japanese Journal of Applied Physics*, **2005**, 44, L1072-L1075	1.4	9
47	High rate growth of In2O3at 1000 °C by halide vapor phase epitaxy. *Japanese Journal of Applied Physics*, **2016**, 55, 1202B3	1.4	8
46	Growth of thick AlxGa1−xN ternary alloy by hydride vapor-phase epitaxy. *Journal of Crystal Growth*, **2007**, 300, 164-167	1.6	8
45	Aperture-limited conduction and its possible mechanism in ion-implanted current aperture vertical β-Ga2O3 MOSFETs. *Applied Physics Letters*, **2021**, 118, 012102	3.4	8
44	In situ gravimetric monitoring of surface reactions between sapphire and NH3. *Journal of Crystal Growth*, **2009**, 311, 3110-3113	1.6	7
43	Anisotropic complex refractive index of β-Ga2O3 bulk and epilayer evaluated by terahertz time-domain spectroscopy. *Applied Physics Letters*, **2021**, 118, 042101	3.4	7
42	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		6
41	Ab initio calculation for an initial growth process of GaN on (0001) and (000$ bar 1 $) surfaces by vapor phase epitaxy. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2009**, 6, S301-S304		6
40	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		6
39	Study of the Decomposition Processes of (0001)AlN in a Hydrogen Atmosphere. *Japanese Journal of Applied Physics*, **2007**, 46, L1114-L1116	1.4	6
38	Temperature dependence of Ga2O3 growth by halide vapor phase epitaxy on sapphire and β-Ga2O3 substrates. *Applied Physics Letters*, **2020**, 117, 222101	3.4	6
37	Growth of III-Nitrides with Halide Vapor Phase Epitaxy (HVPE) **2010**, 869-896		5
36	Characterization of trap states in buried nitrogen-implanted β-Ga2O3. *Applied Physics Letters*, **2020**, 117, 243505	3.4	5

35	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	1.4	4
34	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		4
33	Vinyltitanium as an initiator for the polymerization of acetylene. *Journal of Polymer Science Part A*, **2002**, 40, 2663-2669	2.5	4
32	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	1.6	4
31	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	1.6	4
30	Thermal and chemical stabilities of group-III sesquioxides in a flow of either N2or H2. *Japanese Journal of Applied Physics*, **2016**, 55, 1202BE	1.4	3
29	Vacancy defects in UV-transparent HVPE-AlN. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2014**, 11, 405-407		3
28	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		3
27	Polarity control and preparation of AlN nano-islands by hydride vapor phase epitaxy. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2009**, 6, S444-S446		3
26	Influence of substrate polarity of (0 0 0 1) and (0 0 01)GaN surfaces on hydride vapor-phase epitaxy of InN. *Journal of Crystal Growth*, **2010**, 312, 651-655	1.6	3
25	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		3
24	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	1.6	3
23	Hydride vapor phase epitaxy of Si-doped AlN layers using SiCl4 as a doping gas. *Journal of Crystal Growth*, **2020**, 545, 125730	1.6	2
22	Lattice bow in thick, homoepitaxial GaN layers for vertical power devices. *Journal of Crystal Growth*, **2020**, 539, 125643	1.6	2
21	Ga2O3 field-plated schottky barrier diodes with a breakdown voltage of over 1 kV **2016**,		2
20	Current Status of Gallium Oxide-Based Power Device Technology **2015**,		2
19	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	1.4	2
18	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		2

17	Effect of high temperature homoepitaxial growth of Ga2O3 by hot-wall metalorganic vapor phase epitaxy. *Journal of Crystal Growth*, **2022**, 582, 126520	1.6	2
16	Thermodynamic and experimental studies of Ga2O3 growth by metalorganic vapor phase epitaxy. *Japanese Journal of Applied Physics*, **2021**, 60, 045505	1.4	2
15	Enhancement-Mode Current Aperture Vertical Ga2O3 MOSFETs **2019**,		2
14	Effect of substrate orientation on homoepitaxial growth of Ga2O3 by halide vapor phase epitaxy. *Applied Physics Letters*, **2022**, 120, 102102	3.4	2
13	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	1.4	1
12	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		1
11	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	1.4	1
10	Pulse laser assisted MOVPE for InGaN with high indium content. *Physica Status Solidi A*, **2004**, 201, 2846-2849		1
9	Halide Vapor Phase Epitaxy 1. *Springer Series in Materials Science*, **2020**, 185-202	0.9	1
8	Study of Dislocations in Homoepitaxially and Heteroepitaxially Grown AlN Layers. *Physica Status Solidi (A) Applications and Materials Science*, **2020**, 217, 2000465	1.6	1
7	Investigation of halide vapor phase epitaxy of In2O3 on sapphire (0 0 0 1) substrates. *Journal of Crystal Growth*, **2021**, 563, 126111	1.6	1
6	Recent Advances in Ga2O3 MOSFET Technologies **2018**,		1
5	Growth of Highly Crystalline GaN at High Growth Rate by Trihalide Vapor-Phase Epitaxy. *Physica Status Solidi (B): Basic Research*, **2020**, 257, 1900564	1.3	0
4	Comment on Characteristics of Multi-photon Absorption in a Ga2O3 Single Crystal[J. Phys. Soc. Jpn. 88, 113701 (2019)]. *Journal of the Physical Society of Japan*, **2020**, 89, 036001	1.5	
3	Influence of growth temperature on the twin formation of InN{10$ bar 1 $3} on GaAs(110) by metalorganic vapor phase epitaxy. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2012**, 9, 677-680		
2	Gallium Oxide Schottky Barrier Diodes. *IEEJ Transactions on Electronics, Information and Systems*, **2016**, 136, 479-483	0.1	
1	Investigation of etching characteristics of HVPE-grown c-In2O3 layers by hydrogen-environment anisotropic thermal etching. *Journal of Crystal Growth*, **2021**, 575, 126338	1.6	