

Matthias Bickermann

List of Publications by Year in descending order

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128
papers

3,766
citations

117453

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130
all docs

130
docs citations

130
times ranked

2677
citing authors

#	ARTICLE	IF	CITATIONS
1	On the bulk In^{2+} -Ga $_{2}\text{O}_{3}$ single crystals grown by the Czochralski method. Journal of Crystal Growth, 2014, 404, 184-191.	0.7	556
2	Scaling-Up of Bulk In^{2+} -Ga $_{2}\text{O}_{3}$ Single Crystals by the Czochralski Method. ECS Journal of Solid State Science and Technology, 2017, 6, Q3007-Q3011.	0.9	280
3	High-excitation and high-resolution photoluminescence spectra of bulk AlN. Physical Review B, 2010, 82, .	1.1	138
4	Performance Characteristics of UV-C AlGaIn-Based Lasers Grown on Sapphire and Bulk AlN Substrates. IEEE Photonics Technology Letters, 2014, 26, 342-345.	1.3	99
5	Doping of Czochralski-grown bulk In^{2+} -Ga $_{2}\text{O}_{3}$ single crystals with Cr, Ce and Al. Journal of Crystal Growth, 2018, 486, 82-90.	0.7	83
6	Bulk AlN growth by physical vapour transport. Semiconductor Science and Technology, 2014, 29, 084002.	1.0	82
7	Characterization of bulk AlN with low oxygen content. Journal of Crystal Growth, 2004, 269, 432-442.	0.7	81
8	Czochralski-grown bulk In^{2+} -Ga $_{2}\text{O}_{3}$ single crystals doped with mono-, di-, tri-, and tetravalent ions. Journal of Crystal Growth, 2020, 529, 125297.	0.7	78
9	Determination of charge carrier concentration in n- and p-doped SiC based on optical absorption measurements. Applied Physics Letters, 2002, 80, 70-72.	1.5	77
10	Ultra-wide bandgap, conductive, high mobility, and high quality melt-grown bulk ZnGa $_{2}\text{O}_{4}$ single crystals. APL Materials, 2019, 7, .	2.2	74
11	Preparation of Bulk AlN Seeds by Spontaneous Nucleation of Freestanding Crystals. Japanese Journal of Applied Physics, 2013, 52, 08JA06.	0.8	69
12	Natural growth habit of bulk AlN crystals. Journal of Crystal Growth, 2004, 265, 577-581.	0.7	66
13	Sublimation growth of silicon carbide bulk crystals: experimental and theoretical studies on defect formation and growth rate augmentation. Journal of Crystal Growth, 1999, 198-199, 1005-1010.	0.7	65
14	Anisotropic absorption and emission of bulk In^{2+} -Ga $_{2}\text{O}_{3}$ single crystals. Physical Review B, 2013, 87, .		
15	Preparation of deep UV transparent AlN substrates with high structural perfection for optoelectronic devices. CrystEngComm, 2016, 18, 3488-3497.	1.3	62
16	UV transparent single-crystalline bulk AlN substrates. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 21-24.	0.8	57
17	MgGa $_{2}\text{O}_{4}$ as a new wide bandgap transparent semiconducting oxide: growth and properties of bulk single crystals. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1455-1460.	0.8	56
18	Similarities and differences in sublimation growth of SiC and AlN. Journal of Crystal Growth, 2007, 305, 317-325.	0.7	55

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19	Analysis on defect generation during the SiC bulk growth process. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1999, 61-62, 48-53.	1.7	54
20	Aluminum p-type doping of silicon carbide crystals using a modified physical vapor transport growth method. Journal of Crystal Growth, 2002, 240, 117-123.	0.7	49
21	Shallow donor and DX states of Si in AlN. Applied Physics Letters, 2011, 98, .	1.5	49
22	Bulk single crystals of $\hat{\Gamma}^2$ -Ga ₂ O ₃ and Ga-based spinels as ultra-wide bandgap transparent semiconducting oxides. Progress in Crystal Growth and Characterization of Materials, 2021, 67, 100511.	1.8	47
23	Growth, characterization, and properties of bulk SnO ₂ single crystals. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 66-73.	0.8	46
24	Faceting in AlN bulk crystal growth and its impact on optical properties of the crystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 449-452.	0.8	45
25	On the preparation of vanadium doped PVT grown SiC boules with high semi-insulating yield. Journal of Crystal Growth, 2003, 254, 390-399.	0.7	44
26	Wet KOH etching of freestanding AlN single crystals. Journal of Crystal Growth, 2007, 300, 299-307.	0.7	44
27	In situ visualization and analysis of silicon carbide physical vapor transport growth using digital X-ray imaging. Journal of Crystal Growth, 2000, 216, 263-272.	0.7	43
28	Thermal conductivity of single-crystalline AlN. Applied Physics Express, 2018, 11, 071001.	1.1	42
29	Point defect content and optical transitions in bulk aluminum nitride crystals. Physica Status Solidi (B): Basic Research, 2009, 246, 1181-1183.	0.7	38
30	Incorporation of boron and vanadium during PVT growth of 6H-SiC crystals. Journal of Crystal Growth, 2001, 233, 211-218.	0.7	36
31	Approaches to seeded PVT growth of AlN crystals. Journal of Crystal Growth, 2005, 275, e479-e484.	0.7	36
32	Orientation-dependent phonon observation in single-crystalline aluminum nitride. Applied Physics Letters, 2005, 86, 131904.	1.5	35
33	Structural properties of aluminum nitride bulk single crystals grown by PVT. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 1502-1504.	0.8	35
34	Identification of a tri-carbon defect and its relation to the ultraviolet absorption in aluminum nitride. Journal of Applied Physics, 2013, 114, .	1.1	35
35	Micropipe healing in SiC wafers by liquid-phase epitaxy in Si-Ge melts. Journal of Crystal Growth, 2004, 271, 142-150.	0.7	34
36	Deep-UV transparent bulk single-crystalline AlN substrates. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1743-1745.	0.8	32

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37	PVT growth of bulk AlN crystals with low oxygen contamination. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 1993-1996.	0.8	31
38	Effective increase of single-crystalline yield during PVT growth of SiC by tailoring of temperature gradient. Journal of Crystal Growth, 2004, 262, 105-112.	0.7	31
39	Growth of AlN bulk crystals on SiC seeds: Chemical analysis and crystal properties. Journal of Crystal Growth, 2012, 339, 13-21.	0.7	31
40	Two inch diameter, highly conducting bulk In^{2+} -Ga ₂ O ₃ single crystals grown by the Czochralski method. Applied Physics Letters, 2022, 120, .	1.5	31
41	Characterization of bulk AlN crystals with positron annihilation spectroscopy. Journal of Crystal Growth, 2008, 310, 3998-4001.	0.7	28
42	Melt growth and properties of bulk BaSnO ₃ single crystals. Journal of Physics Condensed Matter, 2017, 29, 075701.	0.7	28
43	Bulk In^{2+} -Ga ₂ O ₃ single crystals doped with Ce, Ce+Si, Ce+Al, and Ce+Al+Si for detection of nuclear radiation. Journal of Alloys and Compounds, 2020, 818, 152842.	2.8	28
44	The influence of point defects on the thermal conductivity of AlN crystals. Journal of Applied Physics, 2018, 123, 185107.	1.1	26
45	Favourable growth conditions for the preparation of bulk AlN single crystals by PVT. CrystEngComm, 2020, 22, 1762-1768.	1.3	26
46	Seeded PVT Growth of Aluminum Nitride on Silicon Carbide. Materials Science Forum, 2003, 433-436, 983-986.	0.3	25
47	Observation of the Triplet Metastable State of Shallow Donor Pairs in AlN Crystals with a Negative- $\langle \text{U} \rangle$ Behavior: A High-Frequency EPR and ENDOR Study. Physical Review Letters, 2008, 100, 256404.	2.9	25
48	Orientation-dependent properties of aluminum nitride single crystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 1902-1906.	0.8	24
49	Photoluminescence, cathodoluminescence, and reflectance study of AlN layers and AlN single crystals. Superlattices and Microstructures, 2006, 40, 513-518.	1.4	22
50	Stability Criteria for 4H-SiC Bulk Growth. Materials Science Forum, 2001, 353-356, 25-28.	0.3	20
51	Effects of growth direction and polarity on bulk aluminum nitride crystal properties. Journal of Crystal Growth, 2011, 318, 427-431.	0.7	20
52	Growth of 6H-SiC crystals along the direction. Journal of Crystal Growth, 2005, 275, 496-503.	0.7	18
53	Negative spin-exchange splitting in the exciton fine structure of AlN. Applied Physics Letters, 2013, 102, .	1.5	18
54	Preparation of Semi-Insulating Silicon Carbide by Vanadium Doping during PVT Bulk Crystal Growth. Materials Science Forum, 2003, 433-436, 51-54.	0.3	17

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55	On the preparation of semi-insulating SiC bulk crystals by the PVT technique. Applied Surface Science, 2001, 184, 84-89.	3.1	16
56	Sublimation Growth of Bulk AlN Crystals: Materials Compatibility and Crystal Quality. Materials Science Forum, 2002, 389-393, 1445-1448.	0.3	16
57	On the Preparation of Vanadium-Doped Semi-Insulating SiC Bulk Crystals. Materials Science Forum, 2002, 389-393, 139-142.	0.3	16
58	Growth of 4H-SiC on rhombohedral (011 $\bar{1}$ 4) plane seeds. Journal of Crystal Growth, 2007, 308, 41-49.	0.7	16
59	Seeded Growth of AlN on (0001)-Plane 6H-SiC Substrates. Materials Science Forum, 0, 615-617, 983-986.	0.3	16
60	Growth of bulk AlN single crystals with low oxygen content taking into account thermal and kinetic effects of oxygen-related gaseous species. Journal of Crystal Growth, 2012, 360, 185-188.	0.7	15
61	AFM investigation of interface step structures on PVT-grown (0001)Si 6H-SiC crystals. Journal of Crystal Growth, 2004, 270, 113-120.	0.7	14
62	Comparative study of initial growth stage in PVT growth of AlN on SiC and on native AlN substrates. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 2070-2073.	0.8	14
63	Absorption mapping of doping level distribution in n-type and p-type 4H-SiC and 6H-SiC. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2001, 80, 357-361.	1.7	13
64	Optical quantitative determination of doping levels and their distribution in SiC. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2002, 91-92, 75-78.	1.7	13
65	Sublimation Growth of Bulk AlN Crystals: Process Temperature and Growth Rate. Materials Science Forum, 2004, 457-460, 1537-1540.	0.3	13
66	Development of natural habit of large free-nucleated AlN single crystals. Physica Status Solidi (B): Basic Research, 2007, 244, 1780-1783.	0.7	13
67	AlN overgrowth of nano-pillar-patterned sapphire with different offcut angle by metalorganic vapor phase epitaxy. Journal of Crystal Growth, 2020, 531, 125343.	0.7	13
68	Analysis on the Formation and Elimination of Filamentary and Planar Voids in Silicon Carbide Bulk Crystals. Materials Science Forum, 2000, 338-342, 445-448.	0.3	12
69	Polarization-dependent below band-gap optical absorption of aluminum nitride bulk crystals. Journal of Applied Physics, 2008, 103, 073522.	1.1	12
70	Influence of oxygen partial pressure on SrTiO ₃ bulk crystal growth from non-stoichiometric melts. CrystEngComm, 2015, 17, 3224-3234.	1.3	12
71	Crystal growth and characterization of the pyrochlore Tb ₂ Ti ₂ O ₇ . CrystEngComm, 2017, 19, 3908-3914.	1.3	11
72	Study of Boron Incorporation During PVT Growth of p-type SiC Crystals. Materials Science Forum, 2001, 353-356, 49-52.	0.3	10

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73	Structural properties of AlN crystals grown by physical vapor transport. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 2044-2048.	0.8	10
74	Defects at nitrogen site in electron-irradiated AlN. Applied Physics Letters, 2011, 98, .	1.5	10
75	Precipitates originating from tungsten crucible parts in AlN bulk crystals grown by the PVT method. Crystal Research and Technology, 2016, 51, 129-136.	0.6	10
76	Carbon pair defects in aluminum nitride. Journal of Applied Physics, 2019, 126, 215102.	1.1	10
77	Studies on SiC Liquid Phase Crystallization as Technique for SiC Bulk Growth. Materials Science Forum, 1998, 264-268, 69-72.	0.3	9
78	PVT Growth of p-Type and Semi-Insulating 2-Inch 6H-SiC Crystals. Materials Science Forum, 2003, 433-436, 55-58.	0.3	9
79	Flux Growth of SiC Crystals from Eutectic Melt SiC-B ₄ C. Materials Science Forum, 2004, 457-460, 119-122.	0.3	9
80	Melt Growth and Physical Properties of Bulk LaInO ₃ Single Crystals. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100016.	0.8	9
81	Experimental Hall electron mobility of bulk single crystals of transparent semiconducting oxides. Journal of Materials Research, 2021, 36, 4746-4755.	1.2	9
82	Natural Crystal Habit and Preferential Growth Directions during PVT of Silicon Carbide. Materials Science Forum, 2004, 457-460, 111-114.	0.3	8
83	Electromechanical losses in carbon- and oxygen-containing bulk AlN single crystals. Solid State Ionics, 2019, 343, 115072.	1.3	8
84	Crystal defect analysis in AlN layers grown by MOVPE on bulk AlN. Journal of Crystal Growth, 2019, 505, 69-73.	0.7	8
85	TiSr antisite: An abundant point defect in SrTiO ₃ . Journal of Applied Physics, 2020, 127, .	1.1	8
86	Growth and characterization of bulk AlN substrates grown by PVT. Physica Status Solidi (A) Applications and Materials Science, 2005, 202, 531-535.	0.8	7
87	Silicon in AlN: shallow donor and DX behaviors. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2167-2169.	0.8	7
88	Ohmic and rectifying contacts on bulk AlN for radiation detector applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 968-971.	0.8	7
89	A study of the step-flow growth of the PVT-grown AlN crystals by a multi-scale modeling method. CrystEngComm, 2014, 16, 6564-6577.	1.3	7
90	Temperature dependent dielectric function and reflectivity spectra of nonpolar wurtzite AlN. Thin Solid Films, 2014, 571, 502-505.	0.8	7

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91	Growth Rate Control in SiC-Physical Vapor Transport Method Through Heat Transfer Modeling and Non-Stationary Process Conditions. Materials Science Forum, 2000, 338-342, 39-42.	0.3	6
92	Absorption Measurements and Doping Level Evaluation in n-Type and p-Type 4H-SiC and 6H-SiC. Materials Science Forum, 2001, 353-356, 397-400.	0.3	6
93	Effective Increase of Single-Crystalline Yield during PVT Growth of SiC by Tailoring of Radial Temperature Gradient. Materials Science Forum, 2003, 433-436, 67-70.	0.3	6
94	Structural, Optical and Electrical Properties of Bulk AlN Crystals Grown by PVT. Materials Science Forum, 2004, 457-460, 1541-1544.	0.3	6
95	The initial growth stage in PVT growth of aluminum nitride. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 1575-1578.	0.8	6
96	Initial growth stage in PVT growth of AlN on SiC substrates: Influence of Al ₂ O ₃ . Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 2223-2226.	0.8	6
97	Sublimation growth of bulk crystals of AlN-rich (AlN) _x (SiC) _{1-x} solid solutions. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1746-1748.	0.8	6
98	Photochromism and influence of point defect charge states on optical absorption in aluminum nitride (AlN). Journal of Applied Physics, 2021, 129, .	1.1	6
99	Impact of Compensation on Optical Absorption Bands in the Below-Bandgap Region in n-Type (N) 6H-SiC. Materials Science Forum, 2003, 433-436, 333-336.	0.3	5
100	Defect-selective etching of aluminum nitride single crystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 2609-2612.	0.8	5
101	Crystal growth of mixed AlN-SiC bulk crystals. Journal of Crystal Growth, 2010, 312, 2522-2526.	0.7	5
102	Structural defects in aluminium nitride bulk crystals visualized by cathodoluminescence maps. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2235-2238.	0.8	5
103	Top-seeded solution growth of SrTiO ₃ single crystals virtually free of mosaicity. Journal of Crystal Growth, 2017, 468, 305-310.	0.7	5
104	Online Monitoring of PVT SiC Bulk Crystal Growth Using Digital X-Ray Imaging. Materials Research Society Symposia Proceedings, 1999, 572, 259.	0.1	4
105	SiC Crystal Growth from the Vapor and Liquid Phase. Materials Research Society Symposia Proceedings, 2000, 640, 1.	0.1	4
106	Digital X-Ray Imaging of SiC PVT Process: Analysis of Crystal Growth and Powder Source Degradation. Materials Science Forum, 2000, 338-342, 71-74.	0.3	4
107	FTIR exhaust gas analysis of GaN pseudo-halide vapor phase growth. Materials Chemistry and Physics, 2016, 177, 12-18.	2.0	4
108	Carbon doped GaN layers grown by Pseudo-Halide Vapour Phase Epitaxy. Crystal Research and Technology, 2017, 52, 1600364.	0.6	4

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109	Czochralski growth and characterization of cerium doped calcium scandate. CrystEngComm, 2017, 19, 2553-2560.	1.3	4
110	Aluminum Doping of 6H- and 4H-SiC with a Modified PVT Growth Method. Materials Science Forum, 2002, 389-393, 131-134.	0.3	3
111	Incorporation of Boron and the Role of Nitrogen as a Compensation Source in SiC Bulk Crystal Growth. Materials Science Forum, 2002, 389-393, 127-130.	0.3	3
112	Analysis of Different Vanadium Charge States in Vanadium Doped 6H-SiC by Low Temperature Optical Absorption and Electron Paramagnetic Resonance. Materials Science Forum, 2004, 457-460, 787-790.	0.3	3
113	Growth and Characterization of High-Quality 6H-SiC (0115) Bulk Crystals. Materials Science Forum, 2007, 556-557, 17-20.	0.3	3
114	Thermally stimulated luminescence in aluminium nitride crystals. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2104-2106.	0.8	3
115	Vapor Transport Growth of Wide Bandgap Materials. , 2015, , 621-669.		3
116	Electrical and Optical Characterization of p-Type Boron-Doped 6H-SiC Bulk Crystals. Materials Science Forum, 2003, 433-436, 337-340.	0.3	2
117	Liquid phase homoepitaxial growth of 6H-SiC on oriented substrates. Journal of Crystal Growth, 2005, 282, 286-289.	0.7	2
118	Investigation of lattice plane bending in large (0001)SiC crystals using high-energy X-ray technique. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 1288-1291.	0.8	2
119	Growth on Rhombohedral (01-1n) Plane: An Alternative for Preparation of High Quality Bulk SiC Crystals. Materials Science Forum, 2008, 600-603, 23-26.	0.3	2
120	Physical vapor transport growth of bulk Al _{1-x} Sc _x N single crystals. Journal of Crystal Growth, 2018, 500, 74-79.	0.7	2
121	REScO ₃ Substrates—Purveyors of Strain Engineering. Crystal Research and Technology, 2020, 55, 1900111.	0.6	2
122	W _{1/4} stite (Fe _{1-x} O) Thermodynamics and crystal growth. Zeitschrift Fur Naturforschung - Section B Journal of Chemical Sciences, 2022, 77, 463-468.	0.3	2
123	Effect of Thermal Field on Interface Step Structures during PVT Growth of (0001)Si 6H-SiC. Materials Science Forum, 2004, 457-460, 95-98.	0.3	1
124	LPE of Silicon Carbide Using Diluted Si-Ge Flux. Materials Science Forum, 2005, 483-485, 133-136.	0.3	1
125	Phase diagram studies for the growth of (Mg,Zr):SrGa ₂ O ₁₉ crystals. Journal of Thermal Analysis and Calorimetry, 2022, 147, 7133-7139.	2.0	1
126	Molten Barium Hydroxide as Defect Selective Drop Etchant for Dislocation Analysis on Aluminum Nitride Layers. Physica Status Solidi (A) Applications and Materials Science, 2022, 219, 2100707.	0.8	1

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127	Uniform Axial Charge Carrier Concentration in PVT-Grown p-Type 6H SiC by Non-Uniform Distribution of Boron in the Powder Source. Materials Science Forum, 2004, 457-460, 719-722.	0.3	0
128	Defects in AlN: High-frequency EPR and ENDOR studies. Physica B: Condensed Matter, 2009, 404, 4873-4876.	1.3	0