

Matthias Bickermann

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

128
papers

2,967
citations

31
h-index

50
g-index

130
ext. papers

3,387
ext. citations

1.9
avg, IF

4.81
L-index

#	Paper	IF	Citations
128	Two inch diameter, highly conducting bulk EGa_2O_3 single crystals grown by the Czochralski method. <i>Applied Physics Letters</i> , 2022 , 120, 152101	3.4	3
127	Photochromism and influence of point defect charge states on optical absorption in aluminum nitride (AlN). <i>Journal of Applied Physics</i> , 2021 , 129, 113103	2.5	0
126	Bulk single crystals of EGa_2O_3 and Ga-based spinels as ultra-wide bandgap transparent semiconducting oxides. <i>Progress in Crystal Growth and Characterization of Materials</i> , 2021 , 67, 100511	3.5	23
125	Melt Growth and Physical Properties of Bulk LaInO_3 Single Crystals. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2021 , 218, 2100016	1.6	4
124	TiSr antisite: An abundant point defect in SrTiO_3 . <i>Journal of Applied Physics</i> , 2020 , 127, 245702	2.5	5
123	Favourable growth conditions for the preparation of bulk AlN single crystals by PVT. <i>CrystEngComm</i> , 2020 , 22, 1762-1768	3.3	12
122	Bulk EGa_2O_3 single crystals doped with Ce, Ce+Si, Ce+Al, and Ce+Al+Si for detection of nuclear radiation. <i>Journal of Alloys and Compounds</i> , 2020 , 818, 152842	5.7	18
121	AlN overgrowth of nano-pillar-patterned sapphire with different offcut angle by metalorganic vapor phase epitaxy. <i>Journal of Crystal Growth</i> , 2020 , 531, 125343	1.6	10
120	REScO ₃ Substrates Surveyors of Strain Engineering. <i>Crystal Research and Technology</i> , 2020 , 55, 1900111	1.3	1
119	Czochralski-grown bulk EGa_2O_3 single crystals doped with mono-, di-, tri-, and tetravalent ions. <i>Journal of Crystal Growth</i> , 2020 , 529, 125297	1.6	51
118	Electromechanical losses in carbon- and oxygen-containing bulk AlN single crystals. <i>Solid State Ionics</i> , 2019 , 343, 115072	3.3	4
117	Carbon pair defects in aluminum nitride. <i>Journal of Applied Physics</i> , 2019 , 126, 215102	2.5	5
116	Ultra-wide bandgap, conductive, high mobility, and high quality melt-grown bulk ZnGa_2O_4 single crystals. <i>APL Materials</i> , 2019 , 7, 022512	5.7	47
115	Crystal defect analysis in AlN layers grown by MOVPE on bulk AlN. <i>Journal of Crystal Growth</i> , 2019 , 505, 69-73	1.6	7
114	Doping of Czochralski-grown bulk EGa_2O_3 single crystals with Cr, Ce and Al. <i>Journal of Crystal Growth</i> , 2018 , 486, 82-90	1.6	58
113	Physical vapor transport growth of bulk $\text{Al}_{1-x}\text{Sc}_x\text{N}$ single crystals. <i>Journal of Crystal Growth</i> , 2018 , 500, 74-79	1.6	2
112	Thermal conductivity of single-crystalline AlN. <i>Applied Physics Express</i> , 2018 , 11, 071001	2.4	27

111	The influence of point defects on the thermal conductivity of AlN crystals. <i>Journal of Applied Physics</i> , 2018 , 123, 185107	2.5	12
110	Carbon doped GaN layers grown by Pseudo-Halide Vapour Phase Epitaxy. <i>Crystal Research and Technology</i> , 2017 , 52, 1600364	1.3	4
109	Top-seeded solution growth of SrTiO ₃ single crystals virtually free of mosaicity. <i>Journal of Crystal Growth</i> , 2017 , 468, 305-310	1.6	3
108	Crystal growth and characterization of the pyrochlore Tb ₂ Ti ₂ O ₇ . <i>CrystEngComm</i> , 2017 , 19, 3908-3914	3.3	7
107	Czochralski growth and characterization of cerium doped calcium scandate. <i>CrystEngComm</i> , 2017 , 19, 2553-2560	3.3	3
106	Melt growth and properties of bulk BaSnO single crystals. <i>Journal of Physics Condensed Matter</i> , 2017 , 29, 075701	1.8	17
105	Scaling-Up of Bulk EGa ₂ O ₃ Single Crystals by the Czochralski Method. <i>ECS Journal of Solid State Science and Technology</i> , 2017 , 6, Q3007-Q3011	2	209
104	Precipitates originating from tungsten crucible parts in AlN bulk crystals grown by the PVT method. <i>Crystal Research and Technology</i> , 2016 , 51, 129-136	1.3	7
103	Growth and Properties of Bulk AlN Substrates. <i>Springer Series in Materials Science</i> , 2016 , 27-46	0.9	1
102	FTIR exhaust gas analysis of GaN pseudo-halide vapor phase growth. <i>Materials Chemistry and Physics</i> , 2016 , 177, 12-18	4.4	4
101	Preparation of deep UV transparent AlN substrates with high structural perfection for optoelectronic devices. <i>CrystEngComm</i> , 2016 , 18, 3488-3497	3.3	47
100	Influence of oxygen partial pressure on SrTiO ₃ bulk crystal growth from non-stoichiometric melts. <i>CrystEngComm</i> , 2015 , 17, 3224-3234	3.3	11
99	Vapor Transport Growth of Wide Bandgap Materials 2015 , 621-669		3
98	MgGa ₂ O ₄ as a new wide bandgap transparent semiconducting oxide: growth and properties of bulk single crystals. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015 , 212, 1455-1460	1.6	37
97	Growth, characterization, and properties of bulk SnO ₂ single crystals. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2014 , 211, 66-73	1.6	38
96	On the bulk EGa ₂ O ₃ single crystals grown by the Czochralski method. <i>Journal of Crystal Growth</i> , 2014 , 404, 184-191	1.6	415
95	A study of the step-flow growth of the PVT-grown AlN crystals by a multi-scale modeling method. <i>CrystEngComm</i> , 2014 , 16, 6564-6577	3.3	6
94	Performance Characteristics of UV-C AlGaIn-Based Lasers Grown on Sapphire and Bulk AlN Substrates. <i>IEEE Photonics Technology Letters</i> , 2014 , 26, 342-345	2.2	92

93	Temperature dependent dielectric function and reflectivity spectra of nonpolar wurtzite AlN. <i>Thin Solid Films</i> , 2014 , 571, 502-505	2.2	7
92	Bulk AlN growth by physical vapour transport. <i>Semiconductor Science and Technology</i> , 2014 , 29, 084002	1.8	54
91	Anisotropic absorption and emission of bulk (11 $\bar{0}$ 0) AlN. <i>Physical Review B</i> , 2013 , 87,	3.3	54
90	Negative spin-exchange splitting in the exciton fine structure of AlN. <i>Applied Physics Letters</i> , 2013 , 102, 052112	3.4	15
89	Identification of a tri-carbon defect and its relation to the ultraviolet absorption in aluminum nitride. <i>Journal of Applied Physics</i> , 2013 , 114, 123505	2.5	28
88	Preparation of Bulk AlN Seeds by Spontaneous Nucleation of Freestanding Crystals. <i>Japanese Journal of Applied Physics</i> , 2013 , 52, 08JA06	1.4	52
87	Growth of AlN bulk crystals on SiC seeds: Chemical analysis and crystal properties. <i>Journal of Crystal Growth</i> , 2012 , 339, 13-21	1.6	29
86	Growth of bulk AlN single crystals with low oxygen content taking into account thermal and kinetic effects of oxygen-related gaseous species. <i>Journal of Crystal Growth</i> , 2012 , 360, 185-188	1.6	12
85	Ohmic and rectifying contacts on bulk AlN for radiation detector applications. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2012 , 9, 968-971		5
84	Faceting in AlN bulk crystal growth and its impact on optical properties of the crystals. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2012 , 9, 449-452		35
83	Thermally stimulated luminescence in aluminium nitride crystals. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2011 , 8, 2104-2106		3
82	Structural defects in aluminium nitride bulk crystals visualized by cathodoluminescence maps. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2011 , 8, 2235-2238		5
81	Silicon in AlN: shallow donor and DX behaviors. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2011 , 8, 2167-2169		7
80	Effects of growth direction and polarity on bulk aluminum nitride crystal properties. <i>Journal of Crystal Growth</i> , 2011 , 318, 427-431	1.6	15
79	Defects at nitrogen site in electron-irradiated AlN. <i>Applied Physics Letters</i> , 2011 , 98, 242116	3.4	8
78	Shallow donor and DX states of Si in AlN. <i>Applied Physics Letters</i> , 2011 , 98, 092104	3.4	41
77	High-excitation and high-resolution photoluminescence spectra of bulk AlN. <i>Physical Review B</i> , 2010 , 82,	3.3	114
76	Crystal growth of mixed AlN β SiC bulk crystals. <i>Journal of Crystal Growth</i> , 2010 , 312, 2522-2526	1.6	3

75	UV transparent single-crystalline bulk AlN substrates. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2010 , 7, 21-24		45
74	Deep-UV transparent bulk single-crystalline AlN substrates. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2010 , 7, 1743-1745		26
73	Sublimation growth of bulk crystals of AlN-rich (AlN) _x (SiC) _{1-x} solid solutions. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2010 , 7, 1746-1748		4
72	Seeded Growth of AlN on (0001)-Plane 6H-SiC Substrates. <i>Materials Science Forum</i> , 2009 , 615-617, 983-986		13
71	Point defect content and optical transitions in bulk aluminum nitride crystals. <i>Physica Status Solidi (B): Basic Research</i> , 2009 , 246, 1181-1183	1.3	32
70	Defects in AlN: High-frequency EPR and ENDOR studies. <i>Physica B: Condensed Matter</i> , 2009 , 404, 4873-4876		
69	Growth on Rhombohedral (01-1n) Plane: An Alternative for Preparation of High Quality Bulk SiC Crystals. <i>Materials Science Forum</i> , 2008 , 600-603, 23-26	0.4	2
68	Observation of the triplet metastable state of shallow donor pairs in AlN crystals with a negative-U behavior: a high-frequency EPR and ENDOR Study. <i>Physical Review Letters</i> , 2008 , 100, 256404	7.4	24
67	Polarization-dependent below band-gap optical absorption of aluminum nitride bulk crystals. <i>Journal of Applied Physics</i> , 2008 , 103, 073522	2.5	10
66	Structural properties of aluminum nitride bulk single crystals grown by PVT. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2008 , 5, 1502-1504		28
65	Characterization of bulk AlN crystals with positron annihilation spectroscopy. <i>Journal of Crystal Growth</i> , 2008 , 310, 3998-4001	1.6	21
64	Wet KOH etching of freestanding AlN single crystals. <i>Journal of Crystal Growth</i> , 2007 , 300, 299-307	1.6	40
63	Similarities and differences in sublimation growth of SiC and AlN. <i>Journal of Crystal Growth</i> , 2007 , 305, 317-325	1.6	50
62	Growth of 4H-SiC on rhombohedral (0 1 1̄4) plane seeds. <i>Journal of Crystal Growth</i> , 2007 , 308, 41-49	1.6	15
61	Initial growth stage in PVT growth of AlN on SiC substrates: Influence of Al ₂ O ₃ . <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2007 , 4, 2223-2226		5
60	Defect-selective etching of aluminum nitride single crystals. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2007 , 4, 2609-2612		4
59	Development of natural habit of large free-nucleated AlN single crystals. <i>Physica Status Solidi (B): Basic Research</i> , 2007 , 244, 1780-1783	1.3	11
58	Growth and Characterization of High-Quality 6H-SiC (0115) Bulk Crystals. <i>Materials Science Forum</i> , 2007 , 556-557, 17-20	0.4	2

57	Photoluminescence, cathodoluminescence, and reflectance study of AlN layers and AlN single crystals. <i>Superlattices and Microstructures</i> , 2006 , 40, 513-518	2.8	21
56	Orientation-dependent properties of aluminum nitride single crystals. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2006 , 3, 1902-1906		24
55	The initial growth stage in PVT growth of aluminum nitride. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2006 , 3, 1575-1578		6
54	Approaches to seeded PVT growth of AlN crystals. <i>Journal of Crystal Growth</i> , 2005 , 275, e479-e484	1.6	35
53	Growth of 6H-SiC crystals along the [011 $\bar{1}$ 5] direction. <i>Journal of Crystal Growth</i> , 2005 , 275, 496-503	1.6	17
52	Liquid phase homoepitaxial growth of 6H-SiC on oriented substrates. <i>Journal of Crystal Growth</i> , 2005 , 282, 286-289	1.6	2
51	Investigation of lattice plane bending in large (0001)SiC crystals using high-energy X-ray technique. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2005 , 2, 1288-1291		2
50	Structural properties of AlN crystals grown by physical vapor transport. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2005 , 2, 2044-2048		8
49	Comparative study of initial growth stage in PVT growth of AlN on SiC and on native AlN substrates. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2005 , 2, 2070-2073		12
48	Growth and characterization of bulk AlN substrates grown by PVT. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2005 , 202, 531-535	1.6	6
47	LPE of Silicon Carbide Using Diluted Si-Ge Flux. <i>Materials Science Forum</i> , 2005 , 483-485, 133-136	0.4	1
46	Orientation-dependent phonon observation in single-crystalline aluminum nitride. <i>Applied Physics Letters</i> , 2005 , 86, 131904	3.4	34
45	Natural Crystal Habit and Preferential Growth Directions during PVT of Silicon Carbide. <i>Materials Science Forum</i> , 2004 , 457-460, 111-114	0.4	8
44	Flux Growth of SiC Crystals from Eutectic Melt SiC-B4C. <i>Materials Science Forum</i> , 2004 , 457-460, 119-122	0.4	8
43	Sublimation Growth of Bulk AlN Crystals: Process Temperature and Growth Rate. <i>Materials Science Forum</i> , 2004 , 457-460, 1537-1540	0.4	11
42	Analysis of Different Vanadium Charge States in Vanadium Doped 6H-SiC by Low Temperature Optical Absorption and Electron Paramagnetic Resonance. <i>Materials Science Forum</i> , 2004 , 457-460, 787-790	0.4	2
41	Uniform Axial Charge Carrier Concentration in PVT-Grown p-Type 6H SiC by Non-Uniform Distribution of Boron in the Powder Source. <i>Materials Science Forum</i> , 2004 , 457-460, 719-722	0.4	
40	Structural, Optical and Electrical Properties of Bulk AlN Crystals Grown by PVT. <i>Materials Science Forum</i> , 2004 , 457-460, 1541-1544	0.4	6

39	Effect of Thermal Field on Interface Step Structures during PVT Growth of (0001)Si 6H-SiC. <i>Materials Science Forum</i> , 2004 , 457-460, 95-98	0.4	1
38	Effective increase of single-crystalline yield during PVT growth of SiC by tailoring of temperature gradient. <i>Journal of Crystal Growth</i> , 2004 , 262, 105-112	1.6	23
37	Natural growth habit of bulk AlN crystals. <i>Journal of Crystal Growth</i> , 2004 , 265, 577-581	1.6	60
36	Characterization of bulk AlN with low oxygen content. <i>Journal of Crystal Growth</i> , 2004 , 269, 432-442	1.6	69
35	AFM investigation of interface step structures on PVT-grown (0001)Si 6H-SiC crystals. <i>Journal of Crystal Growth</i> , 2004 , 270, 113-120	1.6	12
34	Micropipe healing in SiC wafers by liquid-phase epitaxy in SiTe melts. <i>Journal of Crystal Growth</i> , 2004 , 271, 142-150	1.6	33
33	PVT growth of bulk AlN crystals with low oxygen contamination. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2003 , 1993-1996		31
32	On the preparation of vanadium doped PVT grown SiC boules with high semi-insulating yield. <i>Journal of Crystal Growth</i> , 2003 , 254, 390-399	1.6	36
31	Preparation of Semi-Insulating Silicon Carbide by Vanadium Doping during PVT Bulk Crystal Growth. <i>Materials Science Forum</i> , 2003 , 433-436, 51-54	0.4	8
30	Seeded PVT Growth of Aluminum Nitride on Silicon Carbide. <i>Materials Science Forum</i> , 2003 , 433-436, 983-986	0.4	23
29	PVT Growth of p-Type and Semi-Insulating 2-Inch 6H-SiC Crystals. <i>Materials Science Forum</i> , 2003 , 433-436, 55-58	0.4	9
28	Electrical and Optical Characterization of p-Type Boron-Doped 6H-SiC Bulk Crystals. <i>Materials Science Forum</i> , 2003 , 433-436, 337-340	0.4	2
27	Impact of Compensation on Optical Absorption Bands in the Below-Bandgap Region in n-Type (N) 6H-SiC. <i>Materials Science Forum</i> , 2003 , 433-436, 333-336	0.4	5
26	Effective Increase of Single-Crystalline Yield during PVT Growth of SiC by Tailoring of Radial Temperature Gradient. <i>Materials Science Forum</i> , 2003 , 433-436, 67-70	0.4	5
25	Optical quantitative determination of doping levels and their distribution in SiC. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2002 , 91-92, 75-78	3.1	12
24	Aluminum p-type doping of silicon carbide crystals using a modified physical vapor transport growth method. <i>Journal of Crystal Growth</i> , 2002 , 240, 117-123	1.6	44
23	Determination of charge carrier concentration in n- and p-doped SiC based on optical absorption measurements. <i>Applied Physics Letters</i> , 2002 , 80, 70-72	3.4	64
22	Sublimation Growth of Bulk AlN Crystals: Materials Compatibility and Crystal Quality. <i>Materials Science Forum</i> , 2002 , 389-393, 1445-1448	0.4	15

21	Aluminum Doping of 6H- and 4H-SiC with a Modified PVT Growth Method. <i>Materials Science Forum</i> , 2002 , 389-393, 131-134	0.4	3
20	On the Preparation of Vanadium-Doped Semi-Insulating SiC Bulk Crystals. <i>Materials Science Forum</i> , 2002 , 389-393, 139-142	0.4	14
19	Incorporation of Boron and the Role of Nitrogen as a Compensation Source in SiC Bulk Crystal Growth. <i>Materials Science Forum</i> , 2002 , 389-393, 127-130	0.4	3
18	Absorption mapping of doping level distribution in n-type and p-type 4H-SiC and 6H-SiC. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2001 , 80, 357-361	3.1	9
17	Incorporation of boron and vanadium during PVT growth of 6H-SiC crystals. <i>Journal of Crystal Growth</i> , 2001 , 233, 211-218	1.6	32
16	On the preparation of semi-insulating SiC bulk crystals by the PVT technique. <i>Applied Surface Science</i> , 2001 , 184, 84-89	6.7	15
15	Study of Boron Incorporation During PVT Growth of p-type SiC Crystals. <i>Materials Science Forum</i> , 2001 , 353-356, 49-52	0.4	9
14	Stability Criteria for 4H-SiC Bulk Growth. <i>Materials Science Forum</i> , 2001 , 353-356, 25-28	0.4	19
13	Absorption Measurements and Doping Level Evaluation in n-Type and p-Type 4H-SiC and 6H-SiC. <i>Materials Science Forum</i> , 2001 , 353-356, 397-400	0.4	5
12	SiC Crystal Growth from the Vapor and Liquid Phase. <i>Materials Research Society Symposia Proceedings</i> , 2000 , 640, 1		4
11	In situ visualization and analysis of silicon carbide physical vapor transport growth using digital X-ray imaging. <i>Journal of Crystal Growth</i> , 2000 , 216, 263-272	1.6	38
10	Analysis on the Formation and Elimination of Filamentary and Planar Voids in Silicon Carbide Bulk Crystals. <i>Materials Science Forum</i> , 2000 , 338-342, 445-448	0.4	12
9	Digital X-Ray Imaging of SiC PVT Process: Analysis of Crystal Growth and Powder Source Degradation. <i>Materials Science Forum</i> , 2000 , 338-342, 71-74	0.4	4
8	Growth Rate Control in SiC-Physical Vapor Transport Method Through Heat Transfer Modeling and Non-Stationary Process Conditions. <i>Materials Science Forum</i> , 2000 , 338-342, 39-42	0.4	6
7	Analysis on defect generation during the SiC bulk growth process. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 1999 , 61-62, 48-53	3.1	47
6	Sublimation growth of silicon carbide bulk crystals: experimental and theoretical studies on defect formation and growth rate augmentation. <i>Journal of Crystal Growth</i> , 1999 , 198-199, 1005-1010	1.6	63
5	Online Monitoring of PVT SiC Bulk Crystal Growth Using Digital X-Ray Imaging. <i>Materials Research Society Symposia Proceedings</i> , 1999 , 572, 259		3
4	Studies on SiC Liquid Phase Crystallization as Technique for SiC Bulk Growth. <i>Materials Science Forum</i> , 1998 , 264-268, 69-72	0.4	8

3	Molten Barium Hydroxide as Defect Selective Drop Etchant for Dislocation Analysis on Aluminum Nitride Layers. <i>Physica Status Solidi (A) Applications and Materials Science</i> ,2100707	1.6	1
2	Experimental Hall electron mobility of bulk single crystals of transparent semiconducting oxides. <i>Journal of Materials Research</i> ,1	2.5	4
1	Phase diagram studies for the growth of (Mg,Zr):SrGa ₂ O ₉ crystals. <i>Journal of Thermal Analysis and Calorimetry</i> ,1	4.1	1