Matthias Bickermann

List of Publications by Citations

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	On the bulk β-Ga2O3 single crystals grown by the Czochralski method. *Journal of Crystal Growth*, **2014**, 404, 184-191	1.6	415
127	Scaling-Up of Bulk β-Ga2O3Single Crystals by the Czochralski Method. *ECS Journal of Solid State Science and Technology*, **2017**, 6, Q3007-Q3011	2	209
126	High-excitation and high-resolution photoluminescence spectra of bulk AlN. *Physical Review B*, **2010**, 82,	3.3	114
125	Performance Characteristics of UV-C AlGaN-Based Lasers Grown on Sapphire and Bulk AlN Substrates. *IEEE Photonics Technology Letters*, **2014**, 26, 342-345	2.2	92
124	Characterization of bulk AlN with low oxygen content. *Journal of Crystal Growth*, **2004**, 269, 432-442	1.6	69
123	Determination of charge carrier concentration in n- and p-doped SiC based on optical absorption measurements. *Applied Physics Letters*, **2002**, 80, 70-72	3.4	64
122	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	1.6	63
121	Natural growth habit of bulk AlN crystals. *Journal of Crystal Growth*, **2004**, 265, 577-581	1.6	60
120	Doping of Czochralski-grown bulk β-Ga2O3 single crystals with Cr, Ce and Al. *Journal of Crystal Growth*, **2018**, 486, 82-90	1.6	58
119	Anisotropic absorption and emission of bulk (11□00) AlN. *Physical Review B*, **2013**, 87,	3.3	54
118	Bulk AlN growth by physical vapour transport. *Semiconductor Science and Technology*, **2014**, 29, 084002	1.8	54
117	Preparation of Bulk AlN Seeds by Spontaneous Nucleation of Freestanding Crystals. *Japanese Journal of Applied Physics*, **2013**, 52, 08JA06	1.4	52
116	Czochralski-grown bulk β-Ga2O3 single crystals doped with mono-, di-, tri-, and tetravalent ions. *Journal of Crystal Growth*, **2020**, 529, 125297	1.6	51
115	Similarities and differences in sublimation growth of SiC and AlN. *Journal of Crystal Growth*, **2007**, 305, 317-325	1.6	50
114	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	3.1	47
113	Preparation of deep UV transparent AlN substrates with high structural perfection for optoelectronic devices. *CrystEngComm*, **2016**, 18, 3488-3497	3.3	47
112	Ultra-wide bandgap, conductive, high mobility, and high quality melt-grown bulk ZnGa2O4 single crystals. *APL Materials*, **2019**, 7, 022512	5.7	47

111	UV transparent single-crystalline bulk AlN substrates. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2010**, 7, 21-24		45
110	Aluminum p-type doping of silicon carbide crystals using a modified physical vapor transport growth method. *Journal of Crystal Growth*, **2002**, 240, 117-123	1.6	44
109	Shallow donor and DX states of Si in AlN. *Applied Physics Letters*, **2011**, 98, 092104	3.4	41
108	Wet KOH etching of freestanding AlN single crystals. *Journal of Crystal Growth*, **2007**, 300, 299-307	1.6	40
107	Growth, characterization, and properties of bulk SnO2 single crystals. *Physica Status Solidi (A) Applications and Materials Science*, **2014**, 211, 66-73	1.6	38
106	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	1.6	38
105	MgGa2O4 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	1.6	37
104	On the preparation of vanadium doped PVT grown SiC boules with high semi-insulating yield. *Journal of Crystal Growth*, **2003**, 254, 390-399	1.6	36
103	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		35
102	Approaches to seeded PVT growth of AIN crystals. *Journal of Crystal Growth*, **2005**, 275, e479-e484	1.6	35
101	Orientation-dependent phonon observation in single-crystalline aluminum nitride. *Applied Physics Letters*, **2005**, 86, 131904	3.4	34
100	Micropipe healing in SiC wafers by liquid-phase epitaxy in Si□e melts. *Journal of Crystal Growth*, **2004**, 271, 142-150	1.6	33
99	Point defect content and optical transitions in bulk aluminum nitride crystals. *Physica Status Solidi (B): Basic Research*, **2009**, 246, 1181-1183	1.3	32
98	Incorporation of boron and vanadium during PVT growth of 6H-SiC crystals. *Journal of Crystal Growth*, **2001**, 233, 211-218	1.6	32
97	PVT growth of bulk AlN crystals with low oxygen contamination. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2003**, 1993-1996		31
96	Growth of AlN bulk crystals on SiC seeds: Chemical analysis and crystal properties. *Journal of Crystal Growth*, **2012**, 339, 13-21	1.6	29
95	Identification of a tri-carbon defect and its relation to the ultraviolet absorption in aluminum nitride. *Journal of Applied Physics*, **2013**, 114, 123505	2.5	28
94	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		28

93	Thermal conductivity of single-crystalline AlN. *Applied Physics Express*, **2018**, 11, 071001	2.4	27
92	Deep-UV transparent bulk single-crystalline AlN substrates. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2010**, 7, 1743-1745		26
91	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. *Physical Review Letters*, **2008**, 100, 256404	7.4	24
90	Orientation-dependent properties of aluminum nitride single crystals. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 1902-1906		24
89	Effective increase of single-crystalline yield during PVT growth of SiC by tailoring of temperature gradient. *Journal of Crystal Growth*, **2004**, 262, 105-112	1.6	23
88	Seeded PVT Growth of Aluminum Nitride on Silicon Carbide. *Materials Science Forum*, **2003**, 433-436, 983-986	0.4	23
87	Bulk single crystals of β-Ga2O3 and Ga-based spinels as ultra-wide bandgap transparent semiconducting oxides. *Progress in Crystal Growth and Characterization of Materials*, **2021**, 67, 100511	3.5	23
86	Characterization of bulk AlN crystals with positron annihilation spectroscopy. *Journal of Crystal Growth*, **2008**, 310, 3998-4001	1.6	21
85	Photoluminescence, cathodoluminescence, and reflectance study of AlN layers and AlN single crystals. *Superlattices and Microstructures*, **2006**, 40, 513-518	2.8	21
84	Stability Criteria for 4H-SiC Bulk Growth. *Materials Science Forum*, **2001**, 353-356, 25-28	0.4	19
83	Bulk β-Ga2O3 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	5.7	18
82	Melt growth and properties of bulk BaSnO single crystals. *Journal of Physics Condensed Matter*, **2017**, 29, 075701	1.8	17
81	Growth of 6H-SiC crystals along the [0115] direction. *Journal of Crystal Growth*, **2005**, 275, 496-503	1.6	17
80	Negative spin-exchange splitting in the exciton fine structure of AlN. *Applied Physics Letters*, **2013**, 102, 052112	3.4	15
79	Effects of growth direction and polarity on bulk aluminum nitride crystal properties. *Journal of Crystal Growth*, **2011**, 318, 427-431	1.6	15
78	Growth of 4H-SiC on rhombohedral (0 1 1 4) plane seeds. *Journal of Crystal Growth*, **2007**, 308, 41-49	1.6	15
77	On the preparation of semi-insulating SiC bulk crystals by the PVT technique. *Applied Surface Science*, **2001**, 184, 84-89	6.7	15
76	Sublimation Growth of Bulk AlN Crystals: Materials Compatibility and Crystal Quality. *Materials Science Forum*, **2002**, 389-393, 1445-1448	0.4	15

75	On the Preparation of Vanadium-Doped Semi-Insulating SiC Bulk Crystals. *Materials Science Forum*, **2002**, 389-393, 139-142	0.4	14
74	Seeded Growth of AlN on (0001)-Plane 6H-SiC Substrates. *Materials Science Forum*, **2009**, 615-617, 983-986	0.4	13
73	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	1.6	12
72	AFM investigation of interface step structures on PVT-grown (0001)Si 6HSiC crystals. *Journal of Crystal Growth*, **2004**, 270, 113-120	1.6	12
71	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	3.1	12
70	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		12
69	Analysis on the Formation and Elimination of Filamentary and Planar Voids in Silicon Carbide Bulk Crystals. *Materials Science Forum*, **2000**, 338-342, 445-448	0.4	12
68	Favourable growth conditions for the preparation of bulk AlN single crystals by PVT. *CrystEngComm* , **2020**, 22, 1762-1768	3.3	12
67	The influence of point defects on the thermal conductivity of AlN crystals. *Journal of Applied Physics*, **2018**, 123, 185107	2.5	12
66	Influence of oxygen partial pressure on SrTiO3 bulk crystal growth from non-stoichiometric melts. *CrystEngComm*, **2015**, 17, 3224-3234	3.3	11
65	Development of natural habit of large free-nucleated AlN single crystals. *Physica Status Solidi (B): Basic Research*, **2007**, 244, 1780-1783	1.3	11
64	Sublimation Growth of Bulk AlN Crystals: Process Temperature and Growth Rate. *Materials Science Forum*, **2004**, 457-460, 1537-1540	0.4	11
63	Polarization-dependent below band-gap optical absorption of aluminum nitride bulk crystals. *Journal of Applied Physics*, **2008**, 103, 073522	2.5	10
62	AlN overgrowth of nano-pillar-patterned sapphire with different offcut angle by metalorganic vapor phase epitaxy. *Journal of Crystal Growth*, **2020**, 531, 125343	1.6	10
61	PVT Growth of p-Type and Semi-Insulating 2-Inch 6H-SiC Crystals. *Materials Science Forum*, **2003**, 433-436, 55-58	0.4	9
60	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	3.1	9
59	Study of Boron Incorporation During PVT Growth of p-type SiC Crystals. *Materials Science Forum*, **2001**, 353-356, 49-52	0.4	9
58	Defects at nitrogen site in electron-irradiated AlN. *Applied Physics Letters*, **2011**, 98, 242116	3.4	8

57	Natural Crystal Habit and Preferential Growth Directions during PVT of Silicon Carbide. *Materials Science Forum*, **2004**, 457-460, 111-114	0.4	8
56	Flux Growth of SiC Crystals from Eutectic Melt SiC-B4C. *Materials Science Forum*, **2004**, 457-460, 119-122	0.4	8
55	Preparation of Semi-Insulating Silicon Carbide by Vanadium Doping during PVT Bulk Crystal Growth. *Materials Science Forum*, **2003**, 433-436, 51-54	0.4	8
54	Structural properties of AlN crystals grown by physical vapor transport. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2005**, 2, 2044-2048		8
53	Studies on SiC Liquid Phase Crystallization as Technique for SiC Bulk Growth. *Materials Science Forum*, **1998**, 264-268, 69-72	0.4	8
52	Crystal growth and characterization of the pyrochlore Tb2Ti2O7. *CrystEngComm*, **2017**, 19, 3908-3914	3.3	7
51	Precipitates originating from tungsten crucible parts in AlN bulk crystals grown by the PVT method. *Crystal Research and Technology*, **2016**, 51, 129-136	1.3	7
50	Temperature dependent dielectric function and reflectivity spectra of nonpolar wurtzite AlN. *Thin Solid Films*, **2014**, 571, 502-505	2.2	7
49	Silicon in AlN: shallow donor and DX behaviors. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2011**, 8, 2167-2169		7
48	Crystal defect analysis in AlN layers grown by MOVPE on bulk AlN. *Journal of Crystal Growth*, **2019**, 505, 69-73	1.6	7
47	A study of the step-flow growth of the PVT-grown AlN crystals by a multi-scale modeling method. *CrystEngComm*, **2014**, 16, 6564-6577	3.3	6
46	The initial growth stage in PVT growth of aluminum nitride. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 1575-1578		6
45	Structural, Optical and Electrical Properties of Bulk AlN Crystals Grown by PVT. *Materials Science Forum*, **2004**, 457-460, 1541-1544	0.4	6
44	Growth and characterization of bulk AlN substrates grown by PVT. *Physica Status Solidi (A) Applications and Materials Science*, **2005**, 202, 531-535	1.6	6
43	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	0.4	6
42	TiSr antisite: An abundant point defect in SrTiO3. *Journal of Applied Physics*, **2020**, 127, 245702	2.5	5
41	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		5
40	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		5

39	Initial growth stage in PVT growth of AlN on SiC substrates: Influence of Al2O3. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2007**, 4, 2223-2226		5
38	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	0.4	5
37	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	0.4	5
36	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	0.4	5
35	Carbon pair defects in aluminum nitride. *Journal of Applied Physics*, **2019**, 126, 215102	2.5	5
34	Carbon doped GaN layers grown by Pseudo-Halide Vapour Phase Epitaxy. *Crystal Research and Technology*, **2017**, 52, 1600364	1.3	4
33	Electromechanical losses in carbon- and oxygen-containing bulk AlN single crystals. *Solid State Ionics*, **2019**, 343, 115072	3.3	4
32	Sublimation growth of bulk crystals of AlN-rich (AlN)x(SiC)1⊠ solid solutions. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2010**, 7, 1746-1748		4
31	Defect-selective etching of aluminum nitride single crystals. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2007**, 4, 2609-2612		4
30	SiC Crystal Growth from the Vapor and Liquid Phase. *Materials Research Society Symposia Proceedings*, **2000**, 640, 1		4
29	Digital X-Ray Imaging of SiC PVT Process: Analysis of Crystal Growth and Powder Source Degradation. *Materials Science Forum*, **2000**, 338-342, 71-74	0.4	4
28	FTIR exhaust gas analysis of GaN pseudo-halide vapor phase growth. *Materials Chemistry and Physics*, **2016**, 177, 12-18	4.4	4
27	Melt Growth and Physical Properties of Bulk LaInO3 Single Crystals. *Physica Status Solidi (A) Applications and Materials Science*, **2021**, 218, 2100016	1.6	4
26	Experimental Hall electron mobility of bulk single crystals of transparent semiconducting oxides. *Journal of Materials Research*,1	2.5	4
25	Top-seeded solution growth of SrTiO3 single crystals virtually free of mosaicity. *Journal of Crystal Growth*, **2017**, 468, 305-310	1.6	3
24	Czochralski growth and characterization of cerium doped calcium scandate. *CrystEngComm*, **2017**, 19, 2553-2560	3.3	3
23	Vapor Transport Growth of Wide Bandgap Materials **2015**, 621-669		3
22	Thermally stimulated luminescence in aluminium nitride crystals. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2011**, 8, 2104-2106		3

21	Crystal growth of mixed AlN□SiC bulk crystals. *Journal of Crystal Growth*, **2010**, 312, 2522-2526	1.6	3
20	Aluminum Doping of 6H- and 4H-SiC with a Modified PVT Growth Method. *Materials Science Forum*, **2002**, 389-393, 131-134	0.4	3
19	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	0.4	3
18	Online Monitoring of PVT SiC Bulk Crystal Growth Using Digital X-Ray Imaging. *Materials Research Society Symposia Proceedings*, **1999**, 572, 259		3
17	Two inch diameter, highly conducting bulk □Ga2O3 single crystals grown by the Czochralski method. *Applied Physics Letters*, **2022**, 120, 152101	3.4	3
16	Physical vapor transport growth of bulk Al1-□ScxN single crystals. *Journal of Crystal Growth*, **2018**, 500, 74-79	1.6	2
15	Growth on Rhombohedral (01-1n) Plane: An Alternative for Preparation of High Quality Bulk SiC Crystals. *Materials Science Forum*, **2008**, 600-603, 23-26	0.4	2
14	Growth and Characterization of High-Quality 6H-SiC (0115) Bulk Crystals. *Materials Science Forum*, **2007**, 556-557, 17-20	0.4	2
13	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	0.4	2
12	Electrical and Optical Characterization of p-Type Boron-Doped 6H-SiC Bulk Crystals. *Materials Science Forum*, **2003**, 433-436, 337-340	0.4	2
11	Liquid phase homoepitaxial growth of 6H-SiC on oriented substrates. *Journal of Crystal Growth*, **2005**, 282, 286-289	1.6	2
10	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		2
9	Effect of Thermal Field on Interface Step Structures during PVT Growth of (0001)Si 6H-SiC. *Materials Science Forum*, **2004**, 457-460, 95-98	0.4	1
8	LPE of Silicon Carbide Using Diluted Si-Ge Flux. *Materials Science Forum*, **2005**, 483-485, 133-136	0.4	1
7	Molten Barium Hydroxide as Defect Selective Drop Etchant for Dislocation Analysis on Aluminum Nitride Layers. *Physica Status Solidi (A) Applications and Materials Science*,2100707	1.6	1
6	Growth and Properties of Bulk AlN Substrates. *Springer Series in Materials Science*, **2016**, 27-46	0.9	1
5	RECO3 Substrates□Purveyors of Strain Engineering. *Crystal Research and Technology*, **2020**, 55, 1900111	1.3	1
4	Phase diagram studies for the growth of (Mg,Zr):SrGa12O19 crystals. *Journal of Thermal Analysis and Calorimetry*,1	4.1	1

3	Photochromism and influence of point defect charge states on optical absorption in aluminum nitride (AlN). *Journal of Applied Physics*, **2021**, 129, 113103	2.5	0
2	Defects in AlN: High-frequency EPR and ENDOR studies. *Physica B: Condensed Matter*, **2009**, 404, 4873-4876	2.8	6
1	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	0.4	