

# Moritz Brehm

## List of Publications by Year in descending order

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Version: 2024-02-01

48  
papers

1,060  
citations

393982

19  
h-index

414034

32  
g-index

48  
all docs

48  
docs citations

48  
times ranked

754  
citing authors

#	ARTICLE	IF	CITATIONS
1	Key role of the wetting layer in revealing the hidden path of Ge/Si(001) Stranski-Krastanow growth onset. <i>Physical Review B</i> , 2009, 80, .	1.1	96
2	Lasing from Glassy Ge Quantum Dots in Crystalline Si. <i>ACS Photonics</i> , 2016, 3, 298-303.	3.2	87
3	Recipes for the fabrication of strictly ordered Ge islands on pit-patterned Si(001) substrates. <i>Nanotechnology</i> , 2013, 24, 105601.	1.3	72
4	Site-controlled and advanced epitaxial Ge/Si quantum dots: fabrication, properties, and applications. <i>Nanotechnology</i> , 2017, 28, 392001.	1.3	49
5	Enhanced Telecom Emission from Single Group-IV Quantum Dots by Precise CMOS-Compatible Positioning in Photonic Crystal Cavities. <i>ACS Photonics</i> , 2017, 4, 665-673.	3.2	48
6	Ultra-steep side facets in multi-faceted SiGe/Si(001) Stranski-Krastanow islands. <i>Nanoscale Research Letters</i> , 2011, 6, 70.	3.1	44
7	How pit facet inclination drives heteroepitaxial island positioning on patterned substrates. <i>Physical Review B</i> , 2011, 84, .	1.1	41
8	Evolution of epitaxial semiconductor nanodots and nanowires from supersaturated wetting layers. <i>Chemical Society Reviews</i> , 2015, 44, 26-39.	18.7	41
9	The influence of a Si cap on self-organized SiGe islands and the underlying wetting layer. <i>Journal of Applied Physics</i> , 2011, 109, 123505.	1.1	39
10	Combined structural and photoluminescence study of SiGe islands on Si substrates: comparison with realistic energy level calculations. <i>New Journal of Physics</i> , 2009, 11, 063021.	1.2	33
11	Microphotoluminescence and perfect ordering of SiGe islands on pit-patterned Si(001) substrates. <i>Nanotechnology</i> , 2011, 22, 165302.	1.3	33
12	Free-running Sn precipitates: an efficient phase separation mechanism for metastable Ge <sub>1-x</sub> Sn <sub>x</sub> epilayers. <i>Scientific Reports</i> , 2017, 7, 16114.	1.6	31
13	UV nanoimprint lithography for the realization of large-area ordered SiGe/Si(001) island arrays. <i>Applied Physics Letters</i> , 2011, 98, 143101.	1.5	30
14	Room-Temperature Group-IV LED Based on Defect-Enhanced Ge Quantum Dots. <i>ACS Photonics</i> , 2018, 5, 431-438.	3.2	30
15	Inverted Ge islands in {111} faceted Si pits—a novel approach towards SiGe islands with higher aspect ratio. <i>New Journal of Physics</i> , 2010, 12, 063002.	1.2	29
16	Quantitative determination of Ge profiles across SiGe wetting layers on Si (001). <i>Applied Physics Letters</i> , 2008, 93, .	1.5	28
17	Laser Level Scheme of Self-Interstitials in Epitaxial Ge Dots Encapsulated in Si. <i>Nano Letters</i> , 2016, 16, 6802-6807.	4.5	27
18	Excitation Intensity Driven PL Shifts of SiGe Islands on Patterned and Planar Si(001) Substrates: Evidence for Ge-rich Dots in Islands. <i>Nanoscale Research Letters</i> , 2010, 5, 1868-1872.	3.1	26

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19	Assessing the delay of plastic relaxation onset in SiGe islands grown on pit-patterned Si(001) substrates. Applied Physics Letters, 2011, 99, 033106.	1.5	20
20	Photoluminescence enhancement through vertical stacking of defect-engineered Ge on Si quantum dots. Semiconductor Science and Technology, 2017, 32, 02LT01.	1.0	19
21	On-chip infrared photonics with Si-Ge-heterostructures: What is next?. APL Photonics, 2022, 7, .	3.0	18
22	Temperature-dependent evolution of the wetting layer thickness during Ge deposition on Si(001). Nanotechnology, 2011, 22, 285704.	1.3	17
23	Excitation intensity dependence of photoluminescence spectra of SiGe quantum dots grown on prepatterned Si substrates: Evidence for biexcitonic transition. Physical Review B, 2012, 86, .	1.1	17
24	Unrolling the evolution kinetics of ordered SiGe islands via Ge surface diffusion. Physical Review B, 2013, 88, .	1.1	16
25	Optical properties of individual site-controlled Ge quantum dots. Applied Physics Letters, 2015, 106, .	1.5	16
26	SiGe quantum well infrared photodetectors on strained-silicon-on-insulator. Optics Express, 2019, 27, 32009.	1.7	14
27	Misfit dislocation gettering by substrate pit-patterning in SiGe films on Si(001). Applied Physics Letters, 2012, 101, .	1.5	12
28	Morphological evolution of Ge/Si(001) quantum dot rings formed at the rim of wet-etched pits. Nanoscale Research Letters, 2012, 7, 601.	3.1	12
29	Photoluminescence investigation of strictly ordered Ge dots grown on pit-patterned Si substrates. Nanotechnology, 2015, 26, 225202.	1.3	12
30	Advanced preparation of plan-view specimens on a MEMS chip for in situ TEM heating experiments. MRS Bulletin, 2022, 47, 359-370.	1.7	12
31	Light emission from direct band gap germanium containing split-interstitial defects. Physical Review B, 2021, 103, .	1.1	11
32	In-Situ Annealing and Hydrogen Irradiation of Defect-Enhanced Germanium Quantum Dot Light Sources on Silicon. Crystals, 2020, 10, 351.	1.0	10
33	Dislocation engineering in SiGe heteroepitaxial films on patterned Si (001) substrates. Applied Physics Letters, 2011, 98, 121908.	1.5	9
34	Atomic structure and composition distribution in wetting layers and islands of germanium grown on silicon (001) substrates. Nanotechnology, 2015, 26, 485702.	1.3	9
35	Thermal Stability of Defect-Enhanced Ge on Si Quantum Dot Luminescence upon Millisecond Flash Lamp Annealing. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900307.	0.8	9
36	Advanced hydrogenation process applied on Ge on Si quantum dots for enhanced light emission. Applied Physics Letters, 2021, 118, .	1.5	8

#	ARTICLE	IF	CITATIONS
37	Enhanced infrared emission from colloidal HgTe nanocrystal quantum dots on silicon-on-insulator photonic crystals. Applied Physics Letters, 2009, 95, 053107.	1.5	7
38	Assessing Carrier Recombination Processes in Type-II SiGe/Si(001) Quantum Dots. Annalen Der Physik, 2019, 531, 1800259.	0.9	7
39	Anisotropic remastering for reducing feature sizes on UV nanoimprint lithography replica molds. Nanotechnology, 2012, 23, 165302.	1.3	5
40	Photoluminescence enhancement by deterministically site-controlled, vertically stacked SiGe quantum dots. Scientific Reports, 2021, 11, 20597.	1.6	4
41	Bandstructure and photoluminescence of SiGe islands with controlled Ge concentration. Microelectronics Journal, 2008, 39, 485-488.	1.1	3
42	Evolution and coarsening of Si-rich SiGe islands epitaxially grown at high temperatures on Si(001). Microelectronic Engineering, 2014, 125, 22-27.	1.1	3
43	Relaxation Delay of Ge-Rich Epitaxial SiGe Films on Si(001). Physica Status Solidi (A) Applications and Materials Science, 2022, 219, .	0.8	3
44	Light-Emission from Ion-Implanted Group-IV Nanostructures. Topics in Applied Physics, 2021, , 67-103.	0.4	2
45	Gettering and Defect Engineering in Semiconductor Technology (GADEST 2021). Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100728.	0.8	1
46	Future Roads for Group-IV Defect-enhanced Quantum Dot Light-emitters for Silicon Photonics. , 2019, , .		0
47	Epitaxial growth of planar hutwires on silicon-insulator substrates. Physica Status Solidi (A) Applications and Materials Science, 0, , .	0.8	0
48	(Invited) Light-Emitting Devices Based on Defect-Enhanced Group-IV Nanostructures. ECS Meeting Abstracts, 2022, MA2022-01, 1080-1080.	0.0	0