# Hartmut Bracht

List of Publications by Year
in descending order

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| 107 | 4,033 | 109321 | 123424 |
|---|---|---|---|
| papers | citations | 35 h-index | 61 g-index |

| 107 | 107 | 107 | 1955 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Silicon Self-Diffusion in Isotope Heterostructures. Physical Review Letters, 1998, 81, 393-396. | 7.8 | 303 |
| 2 | Properties of intrinsic point defects in silicon determined by zinc diffusion experiments under nonequilibrium conditions. Physical Review B, 1995, 52, 16542-16560. | 3.2 | 295 |
| 3 | Intrinsic and extrinsic diffusion of phosphorus, arsenic, and antimony in germanium. Journal of Applied Physics, 2008, 103, . | 2.5 | 188 |
| 4 | Diffusion ofn-type dopants in germanium. Applied Physics Reviews, 2014, 1, 011301. | 11.3 | 146 |
| 5 | Vacancy-mediated dopant diffusion activation enthalpies for germanium. Applied Physics Letters, 2008, 92, . | 3.3 | 132 |
| 6 | Diffusion and defect reactions between donors, C, and vacancies in Ge. I. Experimental results. Physical Review B, 2008, 77, . | 3.2 | 117 |
| 7 | Self-diffusion in germanium isotope multilayers at low temperatures. Applied Physics Letters, 2008, 93, . | 3.3 | 106 |
| 8 | Self- and foreign-atom diffusion in semiconductor isotope heterostructures. II. Experimental results for silicon. Physical Review B, 2007, 75, . | 3.2 | 105 |
| 9 | Large disparity between gallium and antimony self-diffusion in gallium antimonide. Nature, 2000, 408, 69-72. | 27.8 | 100 |
| 10 | Diffusion Mechanisms and Intrinsic Point-Defect Properties in Silicon. MRS Bulletin, 2000, 25, 22-27. | 3.5 | 92 |
| 11 | Diffusion and solubility of copper, silver, and gold in germanium. Physical Review B, 1991, 43, 14465-14477. | 3.2 | 91 |
| 12 | Diffusion and defect reactions between donors, C, and vacancies in Ge. II. Atomistic calculations of related complexes. Physical Review B, 2008, 77, . | 3.2 | 81 |
| 13 | Diffusion of E centers in germanium predicted using GGA+U approach. Applied Physics Letters, 2011, 99, 072112. | 3.3 | 77 |
| 14 | Vacancy-arsenic clusters in germanium. Applied Physics Letters, 2007, 91, . | 3.3 | 75 |
| 15 | Fluorine effect on As diffusion in Ge. Journal of Applied Physics, 2011, 109, . | 2.5 | 73 |
| 16 | Intrinsic and extrinsic diffusion of indium in germanium. Journal of Applied Physics, 2009, 106, . | 2.5 | 72 |
| 17 | Composition dependence of Si and Ge diffusion in relaxed Si1â^'xGex alloys. Journal of Applied Physics, 2010, 107, . | 2.5 | 72 |
| 18 | Radiation Enhanced Silicon Self-Diffusion and the Silicon Vacancy at High Temperatures. Physical Review Letters, 2003, 91, 245502. | 7.8 | 71 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Atomic transport in germanium and the mechanism of arsenic diffusion. Materials Science in Semiconductor Processing, 2006, 9, 471-476. | 4.0 | 71 |
| 20 | Diffusion of silicon in crystalline germanium. Semiconductor Science and Technology, 2006, 21, 758-762. | 2.0 | 71 |
| 21 | Self- and foreign-atom diffusion in semiconductor isotope heterostructures. I. Continuum theoretical calculations. Physical Review B, 2007, 75, . | 3.2 | 67 |
| 22 | Copper related diffusion phenomena in germanium and silicon. Materials Science in Semiconductor Processing, 2004, 7, 113-124. | 4.0 | 66 |
| 23 | Defect interactions in Sn1â^'xGex random alloys. Applied Physics Letters, 2009, 94, 252104. | 3.3 | 65 |
| 24 | E centers in ternary Si1â^'xâ^'yGexSny random alloys. Applied Physics Letters, 2009, 95, . | 3.3 | 64 |
| 25 | Nonlinear stability of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>E</mml:mi></mml:math>centers in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Si</mml:mtext></mml:mrow><mml:mrow><mml:mn>1</mml:mn> Electronic structure calculations. Physical Review B, 2008, 78, . | 3.2 | 63 |
| 26 | Fluorine codoping in germanium to suppress donor diffusion and deactivation. Journal of Applied Physics, 2009, 106, . | 2.5 | 61 |
| 27 | The vacancy in silicon: A critical evaluation of experimental and theoretical results. Journal of Applied Physics, 2008, 104, 076108. | 2.5 | 58 |
| 28 | Interstitial-Mediated Diffusion in Germanium under Proton Irradiation. Physical Review Letters, 2009, 103, 255501. | 7.8 | 58 |
| 29 | Double-hump diffusion profiles of copper and nickel in germanium wafers yielding vacancy-related information. Applied Physics Letters, 2000, 77, 642-644. | 3.3 | 54 |
| 30 | Phosphorous clustering in germanium-rich silicon germanium. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2008, 154-155, 72-75. | 3.5 | 51 |
| 31 | Contributions of vacancies and self-interstitials to self-diffusion in silicon under thermal equilibrium and nonequilibrium conditions. Physical Review B, 2013, 88, . | 3.2 | 49 |
| 32 | Self- and interdiffusion in AlXGa1â^'XAs/GaAs isotope heterostructures. Applied Physics Letters, 1999, 74, 49-51. | 3.3 | 43 |
| 33 | Self-diffusion in crystalline silicon: A single diffusion activation enthalpy down to<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>755</mml:mn><mml:msup><mml:mspace width="0.16em" /><mml:mo>â^˜</mml:mo></mml:msup><mml:mi mathvariant="normal">C</mml:mi></mml:mrow></mml:math>. Physical Review B, 2016, 94, . | 3.2 | 41 |
| 34 | P implantation into preamorphized germanium and subsequent annealing: Solid phase epitaxial regrowth, P diffusion, and activation. Journal of Vacuum Science & Technology B, 2008, 26, 430-434. | 1.3 | 39 |
| 35 | Zinc diffusion in gallium arsenide and the properties of gallium interstitials. Physical Review B, 2005, 71, . | 3.2 | 38 |
| 36 | Correlation between self-diffusion in Si and the migration mechanisms of vacancies and self-interstitials: An atomistic study. Physical Review B, 2008, 78, . | 3.2 | 36 |

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|---|---|---|---|
| 37 | Diffusion and doping issues in germanium. Microelectronic Engineering, 2011, 88, 452-457. | 2.4 | 33 |
| 38 | Towards fabrication of 3D isotopically modulated vertical silicon nanowires in selective areas by nanosphere lithography. Microelectronic Engineering, 2017, 179, 74-82. | 2.4 | 32 |
| 39 | Enhanced and retarded Ga self-diffusion in Si and Be doped GaAs isotope heterostructures. Solid State Communications, 1999, 112, 301-314. | 1.9 | 31 |
| 40 | Self-diffusion in 69Ga121Sb/71Ga123Sb isotope heterostructures. Journal of Applied Physics, 2001, 89, 5393-5399. | 2.5 | 28 |
| 41 | Diffusion mediated by doping and radiation-induced point defects. Physica B: Condensed Matter, 2006, 376-377, 11-18. | 2.7 | 27 |
| 42 | Interstitialâ€“Substitutional Diffusion Kinetics and Dislocation-Induced Trapping of Zinc in Plastically Deformed Silicon. Physica Status Solidi A, 1993, 137, 499-514. | 1.7 | 26 |
| 43 | Concentration of intrinsic defects and self-diffusion in GaSb. Journal of Applied Physics, 2008, 104, 093714. | 2.5 | 25 |
| 44 | Experiments and simulation on diffusion and activation of codoped with arsenic and phosphorous germanium. Journal of Applied Physics, 2010, 108, 024903. | 2.5 | 25 |
| 45 | A-centers and isovalent impurities in germanium: Density functional theory calculations. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2011, 176, 453-457. | 3.5 | 25 |
| 46 | Zinc and gallium diffusion in gallium antimonide. Physical Review B, 2007, 75, . | 3.2 | 24 |
| 47 | Self-Diffusion in Isotopically Controlled Heterostructures of Elemental and Compound Semiconductors. Materials Research Society Symposia Proceedings, 1998, 527, 335. | 0.1 | 21 |
| 48 | Microscopic defects in silicon induced by zinc out-diffusion. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2000, 71, 160-165. | 3.5 | 21 |
| 49 | Mechanism of zinc diffusion in gallium antimonide. Physica B: Condensed Matter, 2001, 308-310, 854-857. | 2.7 | 21 |
| 50 | Radiation-enhanced self- and boron diffusion in germanium. Physical Review B, 2013, 87, . | 3.2 | 21 |
| 51 | Thermal conductivity of isotopically controlled silicon nanostructures. New Journal of Physics, 2014, 16, 015021. | 2.9 | 21 |
| 52 | Simultaneous diffusion of Si and Ge in isotopically controlled heterostructures. Materials Science in Semiconductor Processing, 2008, 11, 378-383. | 4.0 | 20 |
| 53 | Suppression of donor-vacancy clusters in germanium by concurrent annealing and irradiation. Applied Physics Letters, 2011, 98, . | 3.3 | 20 |
| 54 | Proton irradiation of germanium isotope multilayer structures at elevated temperatures. Journal of Applied Physics, 2008, 103, 033517. | 2.5 | 18 |

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|---|---|---|---|
| 55 | Kinetics of Interstitial-Substitutional Exchange of Zn, Pt, and Au in Si: Experimental Results and Theoretical Calculations. Physica Status Solidi A, 1996, 158, 47-55. | 1.7 | 17 |
| 56 | Defect engineering in germanium. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 109-117. | 1.8 | 16 |
| 57 | Self-Diffusion in Amorphous Silicon by Local Bond Rearrangements. Physical Review Letters, 2018, 120, 225902. | 7.8 | 16 |
| 58 | Comment on â€œSelf-Diffusion in Silicon: Similarity between the Properties of Native Point Defectsâ€• Physical Review Letters, 2000, 85, 4835-4835. | 7.8 | 15 |
| 59 | Out-diffusion of Zn from Si: A method to study vacancy properties in Si. Journal of Applied Physics, 1998, 83, 8062-8064. | 2.5 | 14 |
| 60 | Point defects in silicon after zinc diffusion - a deep level transient spectroscopy and spreading-resistance profiling study. Semiconductor Science and Technology, 1999, 14, 435-440. | 2.0 | 14 |
| 61 | Reduced thermal conductivity of isotopically modulated silicon multilayer structures. Applied Physics Letters, 2012, 101, 064103. | 3.3 | 14 |
| 62 | Impact of zinc halide addition on the growth of zinc-rich layers generated by sherardizing. Surface and Coatings Technology, 2015, 263, 66-77. | 4.8 | 14 |
| 63 | Doping dependence of self-diffusion in germanium and the charge states of vacancies. Applied Physics Letters, 2013, 102, . | 3.3 | 13 |
| 64 | Vacancy-donor complexes in highlyn-type Ge doped with As, P and Sb. Journal of Physics Condensed Matter, 2016, 28, 335801. | 1.8 | 13 |
| 65 | Self- and foreign alkaline-earth diffusion in mixed cation silicate glasses. Solid State Ionics, 2009, 180, 109-115. | 2.7 | 12 |
| 66 | Zinc diffusion enhanced Ga diffusion in GaAs isotope heterostructures. Physica B: Condensed Matter, 2001, 308-310, 831-834. | 2.7 | 11 |
| 67 | Antisites and anisotropic diffusion in GaAs and GaSb. Applied Physics Letters, 2013, 103, 142107. | 3.3 | 11 |
| 68 | Phonon coherence in isotopic silicon superlattices. Applied Physics Letters, 2014, 105, 132104. | 3.3 | 11 |
| 69 | Quantitative scanning spreading resistance microscopy on n-type dopant diffusion profiles in germanium and the origin of dopant deactivation. Journal of Applied Physics, 2019, 125, . | 2.5 | 11 |
| 70 | A neutron reflectometry study on silicon selfâ€diffusion at 900â€‰Â°C. Physica Status Solidi (B): Basic Research, 2012, 249, 2108-2112. | 1.5 | 10 |
| 71 | Molecular dynamics simulations of thermal transport in isotopically modulated semiconductor nanostructures. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 549-556. | 1.8 | 10 |
| 72 | Diffusion in isotopically controlled semiconductor systems. Physica B: Condensed Matter, 1999, 273-274, 981-986. | 2.7 | 9 |

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| 73 | Structural and electrical properties of solâ€“gel derived Ge nanocrystals in SiO2 films. Applied Physics A: Materials Science and Processing, 2011, 103, 149-158. | 2.3 | 9 |
| 74 | Defect reactions in gallium antimonide studied by zinc and self-diffusion. Physica B: Condensed Matter, 2007, 401-402, 262-265. | 2.7 | 8 |
| 75 | Atomic transport during solid-phase epitaxial recrystallization of amorphous germanium. Applied Physics Letters, 2015, 107, . | 3.3 | 8 |
| 76 | Self-Holding Optical Actuator Based on a Mixed Ionicâ€“Electronic Conductor Material. ACS Photonics, 2019, 6, 1182-1190. | 6.6 | 8 |
| 77 | Analysis of medium-range order based on simulated segmented ring detector STEM-images: amorphous Si. Ultramicroscopy, 2019, 200, 169-179. | 1.9 | 8 |
| 78 | Comparison of Experimental STEM Conditions for Fluctuation Electron Microscopy. Microscopy and Microanalysis, 2020, 26, 1100-1109. | 0.4 | 8 |
| 79 | Bodycote Prize WinnerSherardising â€“ galvanising steel with zinc from vapour phase. International Heat Treatment and Surface Engineering, 2008, 2, 49-54. | 0.2 | 7 |
| 80 | Temperature dependence of ion-beam mixing in crystalline and amorphous germanium isotope multilayer structures. Journal of Applied Physics, 2014, 115, 023506. | 2.5 | 7 |
| 81 | Microstructural Studies of Fluorineâ€‹scp›I‹/scp›mplanted Titanium Aluminides for Enhanced Environmental Durability. Advanced Engineering Materials, 2014, 16, 52-59. | 3.5 | 7 |
| 82 | Ion-Beam-Induced Atomic Mixing in Ge, Si, and SiGe, Studied by Means of Isotope Multilayer Structures. Materials, 2017, 10, 813. | 2.9 | 7 |
| 83 | Self-diffusion in single crystalline silicon nanowires. Journal of Applied Physics, 2018, 123, 161515. | 2.5 | 7 |
| 84 | Focused Ion Beam Sample Preparation for ‹i›In Situ‹/i› Thermal and Electrical Transmission Electron Microscopy. Microscopy and Microanalysis, 2021, 27, 828-834. | 0.4 | 7 |
| 85 | Advanced dopant and self-diffusion studies in silicon. Nuclear Instruments & Methods in Physics Research B, 2006, 253, 105-112. | 1.4 | 6 |
| 86 | Determination of nanoscale heat conductivity by time-resolved X-ray scattering. Thin Solid Films, 2013, 541, 28-31. | 1.8 | 6 |
| 87 | Ion-beam induced atomic mixing in isotopically controlled silicon multilayers. Journal of Applied Physics, 2016, 120, 185701. | 2.5 | 6 |
| 88 | Ion-beam mixing in crystalline and amorphous germanium isotope multilayers. Journal of Applied Physics, 2011, 110, 093502. | 2.5 | 5 |
| 89 | Properties of Point Defects in Silicon: New Results after a Long-Time Debate. Solid State Phenomena, 0, 205-206, 151-156. | 0.3 | 5 |
| 90 | Ultrafast study of phonon transport in isotopically controlled semiconductor nanostructures. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 541-548. | 1.8 | 5 |

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|---|---|---|---|
| 91 | Fluctuation electron microscopy on silicon amorphized at varying self ion-implantation conditions. Journal of Applied Physics, 2019, 126, 095707. | 2.5 | 5 |
| 92 | Defect distribution in boron doped silicon nanostructures characterized by means of scanning spreading resistance microscopy. Journal of Applied Physics, 2020, 127, . | 2.5 | 5 |
| 93 | Reply to â€œComment on â€˜Contributions of vacancies and self-interstitials to self-diffusion in silicon under thermal equilibrium and nonequilibrium conditionsâ€™â€‰â€•. Physical Review B, 2014, 90, . | 3.2 | 4 |
| 94 | Light absorption in Ge nanoclusters embedded in SiO2: comparison between magnetron sputtering and solâ€“gel synthesis. Applied Physics A: Materials Science and Processing, 2014, 116, 233-241. | 2.3 | 4 |
| 95 | Dynamics of Network Formers and Modifiers in Mixed Cation Silicate Glasses. Zeitschrift Fur Physikalische Chemie, 2010, 224, 1677-1705. | 2.8 | 3 |
| 96 | Cation diffusion in mixed cation silicate glasses under non-equilibrium conditions. Solid State Ionics, 2012, 222-223, 47-52. | 2.7 | 3 |
| 97 | Response to â€œComment on â€˜Diffusion of n-type dopants in germaniumâ€™â€‰â€•[Appl. Phys. Rev. 2, 036101 (2015)]. Applied Physics Reviews, 2015, 2, 036102. | 11.3 | 3 |
| 98 | Structural and Thermal Characterisation of Nanofilms by Time-Resolved X-ray Scattering. Nanomaterials, 2019, 9, 501. | 4.1 | 3 |
| 99 | Diffusion of boron in germanium at 800â€“900â€‰Â°C revisited. Journal of Applied Physics, 2020, 127, 025703. | 2.5 | 3 |
| 100 | Impact of oxygen on gallium doped germanium. AIP Advances, 2021, 11, 065122. | 1.3 | 3 |
| 101 | Atomistic simulations on the relationship between solid-phase epitaxial recrystallization and self-diffusion in amorphous silicon. Journal of Applied Physics, 2022, 131, . | 2.5 | 3 |
| 102 | Diffusion and Point Defects in Silicon Materials. Lecture Notes in Physics, 2015, , 1-67. | 0.7 | 2 |
| 103 | Measurement and analysis of thermal conductivity of isotopically controlled silicon layers by timeâ€resolved Xâ€ray scattering. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 3020-3028. | 1.8 | 2 |
| 104 | Electrochemical Proton Intercalation in Vanadium Pentoxide Thin Films and its Electrochromic Behavior in the nearâ€IR Region. ChemistryOpen, 2021, 10, 340-346. | 1.9 | 2 |
| 105 | Properties of Vacancies in Silicon Determined by Out-Diffusion of Zinc from Silicon. Materials Research Society Symposia Proceedings, 1998, 532, 219. | 0.1 | 1 |
| 106 | Thermal transport across isotopic 28Si/mSi interfaces. Computational Materials Science, 2017, 139, 354-360. | 3.0 | 1 |
| 107 | Retarded boron and phosphorus diffusion in silicon nanopillars due to stress induced vacancy injection. Journal of Applied Physics, 2022, 131, 075702. | 2.5 | 1 |