

G V Astakhov

List of Publications by Year in descending order

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119
papers

3,288
citations

136950

32
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161849

54
g-index

121
all docs

121
docs citations

121
times ranked

2435
citing authors

#	ARTICLE	IF	CITATIONS
1	Room-temperature quantum microwave emitters based on spin defects in silicon carbide. Nature Physics, 2014, 10, 157-162.	16.7	193
2	Engineering near-infrared single-photon emitters with optically active spins in ultrapure silicon carbide. Nature Communications, 2015, 6, 7578.	12.8	182
3	Resonant Addressing and Manipulation of Silicon Vacancy Qubits in Silicon Carbide. Physical Review Letters, 2012, 109, 226402.	7.8	148
4	Magnetic field and temperature sensing with atomic-scale spin defects in silicon carbide. Scientific Reports, 2014, 4, 5303.	3.3	145
5	Observation of the universal magnetoelectric effect in a 3D topological insulator. Nature Communications, 2017, 8, 15197.	12.8	136
6	Silicon carbide light-emitting diode as a prospective room temperature source for single photons. Scientific Reports, 2013, 3, 1637.	3.3	108
7	Giant Magneto-Optical Faraday Effect in HgTe Thin Films in the Terahertz Spectral Range. Physical Review Letters, 2011, 106, 107404.	7.8	102
8	Binding energy of charged excitons in ZnSe-based quantum wells. Physical Review B, 2002, 65, .	3.2	101
9	Locking of electron spin coherence above 20 ms in natural silicon carbide. Physical Review B, 2017, 95, .	3.2	93
10	Optical thermometry based on level anticrossing in silicon carbide. Scientific Reports, 2016, 6, 33301.	3.3	87
11	Three-Dimensional Proton Beam Writing of Optically Active Coherent Vacancy Spins in Silicon Carbide. Nano Letters, 2017, 17, 2865-2870.	9.1	87
12	Charged excitons in ZnSe-based quantum wells. Physical Review B, 1999, 60, R8485-R8488.	3.2	85
13	All-Optical dc Nanotesla Magnetometry Using Silicon Vacancy Fine Structure in Isotopically Purified Silicon Carbide. Physical Review X, 2016, 6, .	8.9	83
14	Fabrication and nanophotonic waveguide integration of silicon carbide colour centres with preserved spin-optical coherence. Nature Materials, 2022, 21, 67-73.	27.5	80
15	Surface State Charge Dynamics of a High-Mobility Three-Dimensional Topological Insulator. Physical Review Letters, 2011, 107, 136803.	7.8	75
16	Oscillator strength of trion states in ZnSe-based quantum wells. Physical Review B, 2000, 62, 10345-10352.	3.2	72
17	High-Precision Angle-Resolved Magnetometry with Uniaxial Quantum Centers in Silicon Carbide. Physical Review Applied, 2015, 4, .	3.8	71
18	Optical method for the determination of carrier density in modulation-doped quantum wells. Physical Review B, 2002, 65, .	3.2	67

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19	Excitation and coherent control of spin qubit modes in silicon carbide at room temperature. Nature Communications, 2019, 10, 1678.	12.8	65
20	Picosecond Dynamics of the Photoinduced Spin Polarization in Epitaxial (Ga,Mn)As Films. Physical Review Letters, 2004, 92, 237203.	7.8	58
21	Excitation and recombination dynamics of vacancy-related spin centers in silicon carbide. Journal of Applied Physics, 2014, 115, .	2.5	57
22	Spin and Optical Properties of Silicon Vacancies in Silicon Carbide – A Review. Physica Status Solidi (B): Basic Research, 2018, 255, 1700258.	1.5	52
23	Observation of Giant Magnetic Linear Dichroism in (Ga,Mn)As. Physical Review Letters, 2005, 94, 227203.	7.8	51
24	Room-temperature near-infrared silicon carbide nanocrystalline emitters based on optically aligned spin defects. Applied Physics Letters, 2014, 105, .	3.3	47
25	Magnetization manipulation in (Ga,Mn)As by subpicosecond optical excitation. Applied Physics Letters, 2005, 86, 152506.	3.3	46
26	Excitons and Trions Modified by Interaction with a Two-Dimensional Electron Gas. Physica Status Solidi (B): Basic Research, 2001, 227, 343-352.	1.5	43
27	Engineering telecom single-photon emitters in silicon for scalable quantum photonics. Optics Express, 2020, 28, 26111.	3.4	43
28	Circular-to-Linear and Linear-to-Circular Conversion of Optical Polarization by Semiconductor Quantum Dots. Physical Review Letters, 2006, 96, 027402.	7.8	39
29	Creation of silicon vacancy in silicon carbide by proton beam writing toward quantum sensing applications. Journal Physics D: Applied Physics, 2018, 51, 333002.	2.8	39
30	Suppression of Electron Spin Relaxation in Mn-Doped GaAs. Physical Review Letters, 2008, 101, 076602.	7.8	38
31	Influence of Irradiation on Defect Spin Coherence in Silicon Carbide. Physical Review Applied, 2020, 13, .	3.8	36
32	Terahertz magneto-optical spectroscopy in HgTe thin films. Semiconductor Science and Technology, 2012, 27, 124004.	2.0	35
33	Terahertz quantum Hall effect of Dirac fermions in a topological insulator. Physical Review B, 2013, 87, .	3.2	33
34	Room temperature electrically tunable terahertz Faraday effect. Applied Physics Letters, 2013, 102, .	3.3	32
35	Definitive observation of the dark triplet ground state of charged excitons in high magnetic fields. Physical Review B, 2005, 71, .	3.2	31
36	Time-resolved and continuous-wave optical spin pumping of semiconductor quantum wells. Semiconductor Science and Technology, 2008, 23, 114001.	2.0	30

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37	Optical spin pumping of modulation-doped electrons probed by a two-color Kerr rotation technique. <i>Physical Review B</i> , 2006, 74, .	3.2	29
38	Local vibrational modes of Si vacancy spin qubits in SiC. <i>Physical Review B</i> , 2020, 101, .	3.2	25
39	Universal estimation of X-trion binding energy in semiconductor quantum wells. <i>European Physical Journal B</i> , 2005, 47, 541-547.	1.5	22
40	Combined exciton and trion excitations in modulation doped quantum well structures. <i>Physica B: Condensed Matter</i> , 2001, 298, 315-319.	2.7	20
41	Spin Centres in SiC for Quantum Technologies. <i>Applied Magnetic Resonance</i> , 2016, 47, 793-812.	1.2	19
42	Magneto-optics of two-dimensional electron gases modified by strong Coulomb interactions in ZnSe quantum wells. <i>Physical Review B</i> , 2005, 72, .	3.2	18
43	Unveiling the Zero-Phonon Line of the Boron Vacancy Center by Cavity-Enhanced Emission. <i>Nano Letters</i> , 2022, 22, 5137-5142.	9.1	18
44	Photoluminescence and Raman Spectroscopy Study on Color Centers of Helium Ion-Implanted 4H-SiC. <i>Nanomanufacturing and Metrology</i> , 2020, 3, 205-217.	3.0	17
45	Charged Exciton Dynamics in ZnSe/ZnMgSSe QWs. <i>Physica Status Solidi A</i> , 2000, 178, 501-505.	1.7	16
46	Exciton Spin Decay Modified by Strong Electron-Hole Exchange Interaction. <i>Physical Review Letters</i> , 2007, 99, 016601.	7.8	16
47	Highly Efficient Optical Pumping of Spin Defects in Silicon Carbide for Stimulated Microwave Emission. <i>Physical Review Applied</i> , 2018, 9, .	3.8	16
48	Anisotropic Spin-Acoustic Resonance in Silicon Carbide at Room Temperature. <i>Physical Review Letters</i> , 2020, 125, 107702.	7.8	16
49	Single picojoule pulse switching of magnetization in ferromagnetic (Ga,Mn)As. <i>Applied Physics Letters</i> , 2010, 97, 232503.	3.3	15
50	Formation mechanism and properties of CdSe quantum dots on ZnSe by low temperature epitaxy and in situ annealing. <i>Applied Physics Letters</i> , 2006, 89, 043102.	3.3	14
51	Nonthermal Photocoercivity Effect in a Low-Doped (Ga,Mn)As Ferromagnetic Semiconductor. <i>Physical Review Letters</i> , 2009, 102, 187401.	7.8	14
52	Optically detected spin-mechanical resonance in silicon carbide membranes. <i>Physical Review B</i> , 2019, 100, .	3.2	14
53	Magneto-optical study of ZnSe-based quantum wells. <i>Physica B: Condensed Matter</i> , 1998, 256-258, 323-326.	2.7	13
54	Impact of Interfaces and Laser Repetition Rate on Photocarrier Dynamics in Lead Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 4698-4703.	4.6	13

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55	Stress-controlled zero-field spin splitting in silicon carbide. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	12
56	Trions in ZnSe-Based Quantum Wells Probed by 50 T Magnetic Fields. <i>Physica Status Solidi (B): Basic Research</i> , 2001, 227, 353-363.	1.5	11
57	Anomalous in-plane magneto-optical anisotropy of self-assembled quantum dots. <i>Physical Review B</i> , 2006, 74, .	3.2	11
58	Nanosecond spin memory of electrons in CdTe/CdMgTe quantum wells. <i>Physica Status Solidi (B): Basic Research</i> , 2006, 243, 858-862.	1.5	10
59	Influence of liquidâ€phase synthesis parameters on particle sizes and structural properties of nanocrystalline ZnO powders. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2007, 4, 3260-3269.	0.8	10
60	Metal-assisted chemically etched silicon nanopillars hosting telecom photon emitters. <i>Journal of Applied Physics</i> , 2022, 132, .	2.5	10
61	Point Defects in SiC as a Promising Basis for Single-Defect, Single-Photon Spectroscopy with Room Temperature Controllable Quantum States. <i>Materials Science Forum</i> , 0, 740-742, 425-430.	0.3	9
62	Excitons and Trions in II-VI Quantum Wells with Modulation Doping. <i>Physica Status Solidi (B): Basic Research</i> , 2000, 221, 345-348.	1.5	8
63	Optical anisotropy of CdSe/ZnSe quantum dots. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2006, 3, 912-915.	0.8	8
64	Room-Temperature Level Anticrossing and Cross-Relaxation Spectroscopy of Spin Color Centers in SiC Single Crystals and Nanostructures. <i>Applied Magnetic Resonance</i> , 2018, 49, 85-95.	1.2	8
65	CdSe/ZnSe Quantum Dots Formed by Low Temperature Epitaxy and In-Situ Annealing: Properties and Growth Optimization. <i>Acta Physica Polonica A</i> , 2005, 108, 769-776.	0.5	8
66	Magneto-optics of charged excitons in ZnSe/ZnMgSSe quantum wells. <i>Journal of Crystal Growth</i> , 2000, 214-215, 823-826.	1.5	7
67	Inhomogeneous broadening of exciton lines in magneto-optical reflection from CdTe/CdMgTe quantum wells. <i>European Physical Journal B</i> , 2001, 24, 7-13.	1.5	7
68	Combined exciton-electron optical processes in optical spectra of modulation doped QWs. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2003, 17, 197-200.	2.7	7
69	Photoinduced Barkhausen Effect in the Ferromagnetic Semiconductor (Ga,Mn)As. <i>Physical Review Letters</i> , 2011, 106, 037204.	7.8	7
70	Creation and Functionalization of Defects in SiC by Proton Beam Writing. <i>Materials Science Forum</i> , 2017, 897, 233-237.	0.3	7
71	Stress distribution at the AlN/SiC heterointerface probed by Raman spectroscopy. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	7
72	Combined Exciton-Electron and Trion-Electron Excitations in ZnSe/ZnMgSSe Modulation-Doped Quantum Wells. <i>Physica Status Solidi (B): Basic Research</i> , 2002, 229, 543-547.	1.5	6

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73	Bound magnetic polarons in the very dilute regime. Physical Review B, 2008, 77, .	3.2	6
74	Influence of light on spin diffusion in weak magnetic fields. Physical Review B, 2009, 79, .	3.2	6
75	Observation of the magnetic soft mode in (Cd,Mn)Te quantum wells using spin-flip Raman scattering. Physical Review B, 2009, 80, .	3.2	6
76	Magnetic-field-induced exchange effects between Mn ions and free carriers in ZnSe quantum wells through the intermediate nonmagnetic barrier studied by photoluminescence. Physical Review B, 2011, 83, .	3.2	6
77	All-optical quantum thermometry based on spin-level cross-relaxation and multicenter entanglement under ambient conditions in SiC. AIP Advances, 2018, 8, 085304.	1.3	6
78	Acoustically induced coherent spin trapping. Science Advances, 2021, 7, eabj5030.	10.3	6
79	Inverted fine structure of a 6H-SiC qubit enabling robust spin-photon interface. Npj Quantum Information, 2022, 8, .	6.7	6
80	Identification of singlet and triplet states of negatively charged excitons in CdTe-based quantum wells. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 551-554.	0.8	5
81	CdSe/ZnSe heteroepitaxy: Aspects of growth and self organization of nanostructures. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 3129-3149.	0.8	5
82	Defects for quantum information processing in SiC. , 2018, , 211-240.		5
83	Comparative study of self-assembled CdSe/ZnSe quantum dots grown by variants of conventional MBE. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 928-932.	0.8	4
84	Layer-by-layer growth and island formation in CdSe/ZnSe heteroepitaxy. Journal of Crystal Growth, 2007, 301-302, 310-314.	1.5	4
85	Magneto-optics of modulation doped quantum wells based on II-VI semiconductor compounds. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 3310-3323.	0.8	4
86	Point defects in silicon carbide as a promising basis for spectroscopy of single defects with controllable quantum states at room temperature. Physics of the Solid State, 2015, 57, 891-899.	0.6	4
87	Microwave-Assisted Spectroscopy of Vacancy-Related Spin Centers in Hexagonal $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll" \rangle \langle \text{mml:mrow} \langle \text{mml:mi} \rangle \text{Si} \langle \text{mml:mi} \rangle \langle \text{mml:mi} \text{mathvariant="normal"} \rangle \text{C} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle .$ Physical Review Applied, 2021, 15, .	3.8	4
88	Superradiance of Spin Defects in Silicon Carbide for Maser Applications. Frontiers in Photonics, 2022, 3, .	2.4	4
89	Exciton-electron interaction in quantum wells with a two dimensional electron gas of low density. Physics of the Solid State, 1999, 41, 751-756.	0.6	3
90	High magnetic field optical studies of 2DEG in modulation-doped ZnSe quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 12, 512-515.	2.7	3

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91	Laser controlled magnetization in bulk Zn ϵ x Mn ϵ Te. Physica Status Solidi (B): Basic Research, 2007, 244, 1680-1684.	1.5	3
92	Interaction between Mn ions and free carriers in quantum wells with asymmetrical semimagnetic barriers. Europhysics Letters, 2010, 91, 67007.	2.0	3
93	Optical power-driven electron spin relaxation regime crossover in Mn-doped bulk GaAs. Physical Review B, 2015, 92, .	3.2	3
94	Effect of Mechanical Stress on the Splitting of Spin Sublevels in 4H-SiC. JETP Letters, 2021, 114, 274-278.	1.4	3
95	Magnetic field effect on radiative recombination of localized carriers at GaAs/AlGaAs heterointerface. Semiconductor Science and Technology, 1999, 14, 110-113.	2.0	2
96	Oscillator strength of excitons and charged excitons in ZnSe/ZnMgSSe QWs with a 2DEG of low density. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 6, 187-190.	2.7	2
97	Energy relaxation in CdSe/ZnSe quantum dots under the strong exciton-phonon coupling regime. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 924-927.	0.8	2
98	Induced magnetic anisotropy in lifted (Ga,Mn)As thin films. Applied Physics Letters, 2011, 98, 231903.	3.3	2
99	Exciton decay dynamics controlled by impurity occupation in strongly Mn-doped and partially compensated bulk GaAs. Physical Review B, 2014, 90, .	3.2	2
100	An optical quantum magnetometer with submicron resolution based on the level anticrossing phenomenon. Technical Physics Letters, 2016, 42, 618-621.	0.7	2
101	Model Study of Inhomogeneous Line Broadening in Excitonic Spectra of Quantum Wells. Acta Physica Polonica A, 1998, 94, 235-239.	0.5	2
102	Polariton reflectance spectra from thin ZnSxSe1-x layers. Physics of the Solid State, 1998, 40, 798-799.	0.6	1
103	Optical studies of structural and magnetic anisotropies in epitaxial CdSe/ZnSe quantum dots. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 3324-3333.	0.8	1
104	Spin Relaxation in GaAs Doped with Magnetic (Mn) Atoms. Solid State Phenomena, 2010, 168-169, 47-54.	0.3	1
105	Publisher's Note: Surface State Charge Dynamics of a High-Mobility Three-Dimensional Topological Insulator [Phys. Rev. Lett. 107, 136803 (2011)]. Physical Review Letters, 2011, 107, .	7.8	1
106	Mapping the Stray Fields of a Micromagnet Using Spin Centers in SiC. IEEE Magnetism Letters, 2021, 12, 1-5.	1.1	1
107	Combined Exciton-Electron Optical Processes in Optical Spectra of Modulation Doped QWs. , 2003, , 125-136.		1
108	Optical Studies of Spin Polarized 2Deg in Modulation-Doped (Zn,Mn)Se/(Zn,Be)Se Quantum Wells in High Magnetic Fields. , 2003, , 217-232.		1

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109	<title>Filling-factor dependence of magneto-luminescence in II-VI QWs with 2DEG</title>. , 2002, , .		1
110	Lateral Spin Diffusion Probed by Two-Color Hanle-MOKE Technique. Acta Physica Polonica A, 2008, 114, 1311-1316.	0.5	1
111	Photoluminescence of InAs quantum dots grown on disoriented GaAs substrates. Semiconductors, 1999, 33, 988-990.	0.5	0
112	<title>Combined exciton and trion excitations in modulation doped quantum well structures</title>. , 2002, , .		0
113	<title>Singlet and triplet states of charged excitons in ZnSe-based QWs probed by high magnetic fields</title>. , 2002, , .		0
114	INVESTIGATION OF SPIN TRANSPORT IN SEMICONDUCTORS BY SPATIALLY RESOLVED TWO-COLOR HANLE-MOKE MEASUREMENTS. International Journal of Modern Physics B, 2009, 23, 2760-2765.	2.0	0
115	Nonthermal Photocoercivity Effect in Low-Doped (Ga,Mn)As Ferromagnetic Semiconductor. AIP Conference Proceedings, 2011, , .	0.4	0
116	Atomic-Scale Defects in Silicon Carbide for Quantum Sensing Applications. Materials Science Forum, 0, 821-823, 355-358.	0.3	0
117	Symmetry properties of n-doped (Cd,Mn)Te quantum well photoluminescence spectra: An exemplary evidence for anisotropy-induced valence-band mixing. Applied Physics Letters, 2016, 108, 191113.	3.3	0
118	II-VI Quantum Wells with High Carrier Densities and in High Magnetic Fields. , 2003, , 137-150.		0
119	Positively and Negatively Charged Trions in ZnSe-Based Quantum Wells. , 2003, , 41-62.		0