Rudolf Bratschitsch

List of Publications by Citations

149 papers	7,873 citations	42 h-index	87 g-index
210 ext. papers	9,317 ext. citations	6.7 avg, IF	5.76 L-index

#	Paper	IF	Citations
149	Nanoscale imaging magnetometry with diamond spins under ambient conditions. *Nature*, **2008**, 455, 648-51	50.4	1280
148	Photoluminescence emission and Raman response of monolayer MoS_2, $MoSe_2$, and WSe_2. *Optics Express*, **2013**, 21, 4908-16	3.3	1005
147	Active magneto-plasmonics in hybrid metal–ferromagnet structures. *Nature Photonics*, **2010**, 4, 107-111	33.9	384
146	Single-photon emission from localized excitons in an atomically thin semiconductor. *Optica*, **2015**, 2, 347	8.6	290
145	Resonant internal quantum transitions and femtosecond radiative decay of excitons in monolayer WSe2. *Nature Materials*, **2015**, 14, 889-93	27	224
144	Efficient nonlinear light emission of single gold optical antennas driven by few-cycle near-infrared pulses. *Physical Review Letters*, **2009**, 103, 257404	7.4	194
143	Photovoltaic and photothermoelectric effect in a double-gated WSe2 device. *Nano Letters*, **2014**, 14, 5846-52	11.5	186
142	Trion fine structure and coupled spin-valley dynamics in monolayer tungsten disulfide. *Nature Communications*, **2016**, 7, 12715	17.4	185
141	Nanomechanical control of an optical antenna. *Nature Photonics*, **2008**, 2, 230-233	33.9	148
140	Tailoring spatiotemporal light confinement in single plasmonic nanoantennas. *Nano Letters*, **2012**, 12, 992-6	11.5	139
139	Strain Control of Exciton-Phonon Coupling in Atomically Thin Semiconductors. *Nano Letters*, **2018**, 18, 1751-1757	11.5	121
138	Nanoscale Positioning of Single-Photon Emitters in Atomically Thin WSe2. *Advanced Materials*, **2016**, 28, 7101-5	24	121
137	Biaxial strain tuning of the optical properties of single-layer transition metal dichalcogenides. *Npj 2D Materials and Applications*, **2017**, 1,	8.8	118
136	Optimum photoluminescence excitation and recharging cycle of single nitrogen-vacancy centers in ultrapure diamond. *Physical Review Letters*, **2012**, 109, 097404	7.4	113
135	Ultrafast Coulomb-Induced Intervalley Coupling in Atomically Thin WS2. *Nano Letters*, **2016**, 16, 2945-50	11.5	110
134	Thickness-Dependent Differential Reflectance Spectra of Monolayer and Few-Layer MoS_2, $MoSe_2$, WS_2 and WSe_2. *Nanomaterials*, **2018**, 8,	5.4	106
133	Precise and reversible band gap tuning in single-layer MoSe2 by uniaxial strain. *Nanoscale*, **2016**, 8, 2589-93	7.7	102

132	Phonon Sidebands in Monolayer Transition Metal Dichalcogenides. *Physical Review Letters*, **2017**, 119, 187402	7.4	100
131	Thermally assisted all-optical helicity dependent magnetic switching in amorphous Fe(100-x)Tb(x) alloy films. *Advanced Materials*, **2013**, 25, 3122-8	24	100
130	Nanoantenna-Enhanced Light–Matter Interaction in Atomically Thin WS2. *ACS Photonics*, **2015**, 2, 1260-1265	6.5	92
129	Dark and bright exciton formation, thermalization, and photoluminescence in monolayer transition metal dichalcogenides. *2D Materials*, **2018**, 5, 035017	5.9	89
128	Reversible uniaxial strain tuning in atomically thin WSe 2. *2D Materials*, **2016**, 3, 021011	5.9	89
127	Highly Anisotropic in-Plane Excitons in Atomically Thin and Bulklike 1T'-ReSe. *Nano Letters*, **2017**, 17, 3202-3207	11.5	86
126	Micro-reflectance and transmittance spectroscopy: a versatile and powerful tool to characterize 2D materials. *Journal Physics D: Applied Physics*, **2017**, 50, 074002	3	80
125	Thickness-Dependent Refractive Index of 1L, 2L, and 3L MoS2, MoSe2, WS2, and WSe2. *Advanced Optical Materials*, **2019**, 7, 1900239	8.1	80
124	Excitonic Valley Effects in Monolayer WS under High Magnetic Fields. *Nano Letters*, **2016**, 16, 7899-7904	11.5	80
123	Valley Zeeman Splitting and Valley Polarization of Neutral and Charged Excitons in Monolayer MoTe2 at High Magnetic Fields. *Nano Letters*, **2016**, 16, 3624-9	11.5	73
122	Two-octave spanning supercontinuum generation in stoichiometric silicon nitride waveguides pumped at telecom wavelengths. *Optics Express*, **2017**, 25, 1542-1554	3.3	64
121	Single defect centers in diamond nanocrystals as quantum probes for plasmonic nanostructures. *Optics Express*, **2011**, 19, 7914-20	3.3	64
120	Magnetic-Field-Induced Rotation of Polarized Light Emission from Monolayer WS_{2}. *Physical Review Letters*, **2016**, 117, 077402	7.4	63
119	Bow-tie nano-antenna assisted generation of extreme ultraviolet radiation. *New Journal of Physics*, **2013**, 15, 093027	2.9	57
118	Single-photon emitters in GaSe. *2D Materials*, **2017**, 4, 021010	5.9	52
117	Femtosecond nonlinear ultrasonics in gold probed with ultrashort surface plasmons. *Nature Communications*, **2013**, 4, 1468	17.4	52
116	Interlayer excitons in a bulk van der Waals semiconductor. *Nature Communications*, **2017**, 8, 639	17.4	52
115	On-Chip Waveguide Coupling of a Layered Semiconductor Single-Photon Source. *Nano Letters*, **2017**, 17, 5446-5451	11.5	52

114	Femtosecond few-fermion dynamics and deterministic single-photon gain in a quantum dot. *Nature Physics*, **2009**, 5, 352-356	16.2	51
113	Colloidal quantum dots in all-dielectric high-Q pillar microcavities. *Nano Letters*, **2007**, 7, 2897-900	11.5	50
112	Enhancement of the magnetic modulation of surface plasmon polaritons in Au/Co/Au films. *Applied Physics Letters*, **2010**, 97, 183114	3.4	49
111	Electroluminescence from multi-particle exciton complexes in transition metal dichalcogenide semiconductors. *Nature Communications*, **2019**, 10, 1709	17.4	48
110	Ultrafast coherent electron transport in semiconductor quantum cascade structures. *Physical Review Letters*, **2002**, 89, 047402	7.4	46
109	Spin-on spintronics: ultrafast electron spin dynamics in ZnO and Zn□xCoxO sol-gel films. *Nano Letters*, **2011**, 11, 3355-60	11.5	42
108	Defect induced low temperature ferromagnetism in Zn1□CoxO films. *Journal of Applied Physics*, **2007**, 101, 073904	2.5	42
107	Inverted valley polarization in optically excited transition metal dichalcogenides. *Nature Communications*, **2018**, 9, 971	17.4	38
106	All-optical helicity dependent magnetic switching in an artificial zero moment magnet. *Applied Physics Letters*, **2014**, 104, 082406	3.4	38
105	Ultrafast spin dynamics in colloidal ZnO quantum dots. *Nano Letters*, **2008**, 8, 1991-4	11.5	38
104	Revisiting the Buckling Metrology Method to Determine the Young's Modulus of 2D Materials. *Advanced Materials*, **2019**, 31, e1807150	24	37
103	Magnetic-Field-Dependent THz Emission of Spintronic TbFe/Pt Layers. *ACS Photonics*, **2018**, 5, 3936-3942	6.3	37
102	Phonon-assisted emission and absorption of individual color centers in hexagonal boron nitride. *2D Materials*, **2019**, 6, 035006	5.9	36
101	Low-remanence criterion for helicity-dependent all-optical magnetic switching in ferrimagnets. *Physical Review B*, **2015**, 91,	3.3	36
100	Enhanced Visibility of MoS2, MoSe2, WSe2 and Black-Phosphorus: Making Optical Identification of 2D Semiconductors Easier. *Electronics (Switzerland)*, **2015**, 4, 847-856	2.6	36
99	Effects of disorder on electron spin dynamics in a semiconductor quantum well. *Nature Physics*, **2007**, 3, 265-269	16.2	35
98	Coupling of single nitrogen-vacancy defect centers in diamond nanocrystals to optical antennas and photonic crystal cavities. *Physica Status Solidi (B): Basic Research*, **2012**, 249, 918-924	1.3	34
97	Interlayer excitons in bilayer MoS under uniaxial tensile strain. *Nanoscale*, **2019**, 11, 12788-12792	7.7	32

96	Excited-State Trions in Monolayer WS_{2}. *Physical Review Letters*, **2019**, 123, 167401	7.4	32
95	Temperature dependence of the electron spin g factor in GaAs. *Physical Review B*, **2008**, 78,	3.3	32
94	Thickness determination of MoS2, MoSe2, WS2 and WSe2 on transparent stamps used for deterministic transfer of 2D materials. *Nano Research*, **2019**, 12, 1691-1695	10	30
93	Sampling a terahertz dipole transition with subcycle time resolution. *Optics Letters*, **2000**, 25, 272-4	3	29
92	Femtosecond surface plasmon interferometry. *Optics Express*, **2009**, 17, 8423-32	3.3	27
91	Generation of phase-locked and tunable continuous-wave radiation in the terahertz regime. *Optics Letters*, **2005**, 30, 3231-3	3	27
90	Ultraviolet photoluminescence of ZnO quantum dots sputtered at room-temperature. *Optics Express*, **2011**, 19, 1641-7	3.3	25
89	Encapsulating of single quantum dots into polymer particles. *Colloid and Polymer Science*, **2008**, 286, 1329-1334	2.4	25
88	Electron spin polarization through interactions between excitons, trions, and the two-dimensional electron gas. *Physical Review B*, **2007**, 75,	3.3	24
87	Intersubband absorption dynamics in coupled quantum wells. *Applied Physics Letters*, **2001**, 79, 2755-2757	3.4	24
86	Ultrafast dynamics in monolayer transition metal dichalcogenides: Interplay of dark excitons, phonons, and intervalley exchange. *Physical Review Research*, **2019**, 1,	3.9	24
85	Diamond nanophotonics. *Beilstein Journal of Nanotechnology*, **2012**, 3, 895-908	3	23
84	Spectral dependence of the magnetic modulation of surface plasmon polaritons in noble/ferromagnetic/noble metal films. *Physical Review B*, **2012**, 86,	3.3	23
83	Optical excitation and control of electron spins in semiconductor quantum wells. *Physica E: Low-Dimensional Systems and Nanostructures*, **2010**, 42, 1803-1819	3	22
82	Dark trions govern the temperature-dependent optical absorption and emission of doped atomically thin semiconductors. *Physical Review B*, **2020**, 101,	3.3	21
81	All-optical helicity dependent magnetic switching in Tb-Fe thin films with a MHz laser oscillator. *Optics Express*, **2014**, 22, 10017-25	3.3	21
80	Ultrafast spin dynamics in optically excited bulk GaAs at low temperatures. *Physical Review B*, **2010**, 81,	3.3	21
79	Spintronic GdFe/Pt THz emitters. *Applied Physics Letters*, **2019**, 115, 152401	3.4	20

78	Dependence of all-optical magnetic switching on the sublattice magnetization orientation in Tb-Fe thin films. *Applied Physics Letters*, **2014**, 105, 112403	3.4	20
77	The structure and optical properties of ZnO nanocrystals embedded in SiO2 fabricated by radio-frequency sputtering. *Nanotechnology*, **2009**, 20, 075601	3.4	20
76	Valley-contrasting optics of interlayer excitons in Mo- and W-based bulk transition metal dichalcogenides. *Nanoscale*, **2018**, 10, 15571-15577	7.7	18
75	Colloidal ZnO quantum dots in ultraviolet pillar microcavities. *Optics Express*, **2008**, 16, 9791-4	3.3	18
74	Defect induced ferromagnetism in Co-doped ZnO thin films. *Journal of Physics: Conference Series*, **2008**, 100, 042034	0.3	18
73	Valley dynamics of excitons in monolayer dichalcogenides. *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1700131	2.5	17
72	Exciton–phonon coupling in mono- and bilayer MoTe 2. *2D Materials*, **2018**, 5, 045007	5.9	17
71	Role of Coulomb correlations for femtosecond pump-probe signals obtained from a single quantum dot. *Physical Review B*, **2011**, 84,	3.3	17
70	Surface-modified GaAs terahertz plasmon emitter. *Applied Physics Letters*, **2002**, 81, 871-873	3.4	17
69	Strain transfer across grain boundaries in MoS 2 monolayers grown by chemical vapor deposition. *2D Materials*, **2018**, 5, 031003	5.9	16
68	Nano-antenna-assisted harmonic generation. *Applied Physics B: Lasers and Optics*, **2013**, 113, 75-79	1.9	16
67	Triggered single-photon emission in the red spectral range from optically excited InP/(Al,Ga)InP quantum dots embedded in micropillars up to 100 K. *Journal of Applied Physics*, **2011**, 110, 063108	2.5	16
66	Coherent terahertz emission from optically pumped intersubband plasmons in parabolic quantum wells. *Applied Physics Letters*, **2000**, 76, 3501-3503	3.4	16
65	Thermomagnetic control of spintronic THz emission enabled by ferrimagnets. *Applied Physics Letters*, **2020**, 116, 012402	3.4	16
64	Electron spin coherence in n-doped CdTe/CdMgTe quantum wells. *Applied Physics Letters*, **2006**, 89, 221113	3.4	15
63	Selective Raman modes and strong photoluminescence of gallium selenide flakes on sp2 carbon. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2014**, 32, 04E106	1.3	14
62	Exciton broadening and band renormalization due to Dexter-like intervalley coupling. *2D Materials*, **2018**, 5, 025011	5.9	12
61	Incorporation of oxygen atoms as a mechanism for photoluminescence enhancement of chemically treated MoS. *Physical Chemistry Chemical Physics*, **2018**, 20, 16918-16923	3.6	12

60	Strain-dependent exciton diffusion in transition metal dichalcogenides. *2D Materials*, **2021**, 8, 015030	5.9	11
59	Space- and time-resolved UV-to-NIR surface spectroscopy and 2D nanoscopy at 1 MHz repetition rate. *Review of Scientific Instruments*, **2019**, 90, 113103	1.7	11
58	Zeeman spectroscopy of excitons and hybridization of electronic states in few-layer WSe 2 , MoSe 2 and MoTe 2. *2D Materials*, **2019**, 6, 015010	5.9	11
57	Nano-antennae assisted emission of extreme ultraviolet radiation. *Annalen Der Physik*, **2014**, 526, 119-13	2.6	10
56	Assignment of the NV0 575-nm zero-phonon line in diamond to a 2E-2A2 transition. *Physical Review B*, **2013**, 87,	3.3	10
55	Spin valves as magnetically switchable spintronic THz emitters. *Applied Physics Letters*, **2020**, 117, 132407	3.4	10
54	Supercontinuum second harmonic generation spectroscopy of atomically thin semiconductors. *Review of Scientific Instruments*, **2019**, 90, 083102	1.7	8
53	Interference effects in transient Kerr spectra of a semiconductor multilayer structure. *Optics Letters*, **2005**, 30, 2320-2	3	8
52	Photoconductive response of InAs/GaAs quantum dot stacks. *Physica E: Low-Dimensional Systems and Nanostructures*, **2002**, 13, 190-193	3	8
51	Strain tuning of the Stokes shift in atomically thin semiconductors. *Nanoscale*, **2020**, 12, 20786-20796	7.7	8
50	Coherent THz plasmons in GaAs/AlGaAs superlattices. *Physica B: Condensed Matter*, **1999**, 272, 375-377	2.8	7
49	Facile synthesis of WS nanotubes by sulfurization of tungsten thin films: formation mechanism, and structural and optical properties. *Nanoscale*, **2018**, 10, 16683-16691	7.7	6
48	Theory of the Coherent Response of Magneto-Excitons and Magneto-Biexcitons in Monolayer Transition Metal Dichalcogenides. *Physical Review B*, **2020**, 102,	3.3	6
47	Assembly of large hBN nanocrystal arrays for quantum light emission. *2D Materials*, **2021**, 8, 035005	5.9	6
46	Magnetic and Optical Properties of Gold-Coated Iron Oxide Nanoparticles. *Journal of Nanoscience and Nanotechnology*, **2019**, 19, 4987-4993	1.3	5
45	Optical properties of red emitting self-assembled InP/(Al0.20Ga0.80)0.51In0.49P quantum dot based micropillars. *Optics Express*, **2010**, 18, 12543-51	3.3	5
44	Electron spin dephasing in n-doped CdTe/(Cd, Mg)Te quantum wells. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 2290-2292	1.3	5
43	Intersubband relaxation dynamics in semiconductor quantum structures. *Physica E: Low-Dimensional Systems and Nanostructures*, **2002**, 13, 908-911	3	4

42	Ultrafast spin phenomena in highly excited n-doped GaAs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2003**, 1506-1508		4
41	Single-Photon Emitters: Nanoscale Positioning of Single-Photon Emitters in Atomically Thin WSe2 (Adv. Mater. 33/2016). *Advanced Materials*, **2016**, 28, 7032-7032	24	3
40	Nanoantenna-controlled radiation pattern of the third-harmonic emission. *Applied Physics B: Lasers and Optics*, **2016**, 122, 1	1.9	3
39	Magneto-optical response of ferrimagnetic Tb-Fe thin films in the visible and ultraviolet range. *Journal Physics D: Applied Physics*, **2015**, 48, 245001	3	3
38	The lower branch of plasmon-phonon coupled modes. *Semiconductor Science and Technology*, **2000**, 15, 813-817	1.8	3
37	Single-photon emitters in layered van der Waals materials. *Physica Status Solidi (B): Basic Research*,	1.3	3
36	Biaxial strain in atomically thin transition metal dichalcogenides **2017**,		3
35	Photoluminescence Emission and Raman Response of MoS2, MoSe2, and WSe2 Nanolayers **2013**,		3
34	Dispersionless Propagation of Ultrashort Spin-Wave Pulses in Ultrathin Yttrium Iron Garnet Waveguides. *Physical Review Applied*, **2021**, 16,	4.3	3
33	InP quantum dots in pillar microcavities mode spectra and single-photon emission. *Journal of Physics: Conference Series*, **2010**, 210, 012010	0.3	2
32	Few-cycle THz generation for imaging and tomography applications. *Physics in Medicine and Biology*, **2002**, 47, 3691-7	3.8	2
31	Resonant photocurrent from a single quantum emitter in tungsten diselenide. *2D Materials*, **2020**, 7, 045021	5.9	2
30	Dark exciton anti-funneling in atomically thin semiconductors. *Nature Communications*, **2021**, 12, 7221	17.4	2
29	Buckling 2D Materials: Revisiting the Buckling Metrology Method to Determine the Young's Modulus of 2D Materials (Adv. Mater. 10/2019). *Advanced Materials*, **2019**, 31, 1970074	24	1
28	Ultrafast spin dynamics in magnetic wide-bandgap semiconductors. *Physica Status Solidi (B): Basic Research*, **2014**, 251, 1685-1693	1.3	1
27	Mehr Licht! Femtosekunden-Quantenoptik mit Festk per-Nanostrukturen. *Physik in Unserer Zeit*, **2010**, 41, 191-196	0.1	1
26	Coherent THz Plasmons in GaAs: Transition from Pure Plasmons to Coupled Plasmon Phonon Modes. *Physica Status Solidi (B): Basic Research*, **1997**, 204, 64-66	1.3	1
25	Few-cycle THZ spectroscopy of semiconductor quantum structures. *Physica E: Low-Dimensional Systems and Nanostructures*, **2001**, 9, 76-83	3	1

24	Few-cycle THz spectroscopy of nanostructures. *Physica E: Low-Dimensional Systems and Nanostructures*, **2000**, 7, 693-697	3	1
23	Monitoring the ultrafast electric field change at a mid-infrared plasma Bragg mirror. *Optics Letters*, **2001**, 26, 1618-20	3	1
22	Composition-dependent ultrafast THz emission of spintronic CoFe/Pt thin films. *Applied Physics Letters*, **2022**, 120, 042404	3.4	1
21	Anisotropic exciton diffusion in atomically-thin semiconductors. *2D Materials*, **2022**, 9, 025008	5.9	1
20	Ultrafast coherent electron transport in quantum cascade structures. *Springer Series in Chemical Physics*, **2003**, 356-358	0.3	1
19	Covalent photofunctionalization and electronic repair of 2H-MoSvia nitrogen incorporation. *Physical Chemistry Chemical Physics*, **2021**, 23, 18517-18524	3.6	1
18	Polarization contrast scattering spectroscopy of individual metal nanoantennas. *Applied Physics B: Lasers and Optics*, **2017**, 123, 1	1.9	
17	Ultrafast electron spin dynamics in ZnO and Zn1-xCoxO sol-gel thin films. *EPJ Web of Conferences*, **2013**, 41, 03015	0.3	
16	Coulomb correlations in quantum dots and their signatures in single dot femtosecond pump-probe signals. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2011**, 8, 1117-1120		
15	Femtosecond quantum optics with semiconductor nanostructures **2012**, 487-527		
14	Femtosecond probing of few-fermion dynamics and deterministic single-photon gain in a single semiconductor quantum dot. *Journal of Physics: Conference Series*, **2010**, 210, 012035	0.3	
13	Direct measurement of intersubband dynamics. *Physica B: Condensed Matter*, **2002**, 314, 259-262	2.8	
12	Coherent vs. incoherent charge transport in semiconductor quantum cascade structures **2004**, 5352, 333		
11	Coherent THz emission from optically pumped intersubband plasmons in parabolic quantum wells. *Springer Series in Chemical Physics*, **2001**, 203-205	0.3	
10	Few-Cycle THz Spectroscopy of Semiconductor Quantum Structures. *Springer Proceedings in Physics*, **2001**, 579-582	0.2	
9	Excitation Dynamics beyond the Slowly-Varying Envelope Approximation. *Springer Series in Chemical Physics*, **2001**, 235-237	0.3	
8	Population dynamics in quantum structures. *Springer Series in Chemical Physics*, **2003**, 392-394	0.3	
7	TERAHERTZ TECHNOLOGY | Terahertz Physics of Semiconductor Heterostructures **2005**, 168-176		

6	Thermally Assisted All-Optical Helicity Dependent Switching of Ferrimagnetic Amorphous Fe100Tbx Thin Films. *Springer Proceedings in Physics*, **2015**, 238-240	0.2
5	Nonlinear Optical Response of Metal Nanoantennas. *Springer Series in Chemical Physics*, **2009**, 711-713	0.3
4	Correlative Luminescence and Absorption Spectroscopy from Monolayer WSe2 at the Nanoscale. *Microscopy and Microanalysis*, **2021**, 27, 1470-1472	0.5
3	Understanding transition metal dichalcogenide absorption line widths in electron energy loss spectroscopy. *Microscopy and Microanalysis*, **2021**, 27, 1170-1172	0.5
2	MoirAngle Dependent Excitonic Absorption in Twisted Bilayer WSe2 by EELS. *Microscopy and Microanalysis*, **2021**, 27, 122-123	0.5
1	Quantitative Strain and Topography Mapping of 2D Materials Using Nanobeam Electron Diffraction.. *Microscopy and Microanalysis*, **2022**, 1-15	0.5