Bernhard Urbaszek

List of Publications by Citations

145 papers	8,061 citations	46 h-index	88 g-index
169 ext. papers	9,646 ext. citations	7 avg, IF	5.99 L-index

#	Paper	IF	Citations
145	Colloquium: Excitons in atomically thin transition metal dichalcogenides. *Reviews of Modern Physics*, **2018**, 90,	40.5	766
144	Giant enhancement of the optical second-harmonic emission of WSe(2) monolayers by laser excitation at exciton resonances. *Physical Review Letters*, **2015**, 114, 097403	7.4	365
143	Robust optical emission polarization in MoS2 monolayers through selective valley excitation. *Physical Review B*, **2012**, 86,	3.3	330
142	Strain tuning of optical emission energy and polarization in monolayer and bilayer MoS2. *Physical Review B*, **2013**, 88,	3.3	285
141	Carrier and polarization dynamics in monolayer MoS2. *Physical Review Letters*, **2014**, 112, 047401	7.4	273
140	Valley dynamics probed through charged and neutral exciton emission in monolayer WSe2. *Physical Review B*, **2014**, 90,	3.3	264
139	Exciton radiative lifetime in transition metal dichalcogenide monolayers. *Physical Review B*, **2016**, 93,	3.3	256
138	Nuclear spin physics in quantum dots: An optical investigation. *Reviews of Modern Physics*, **2013**, 85, 79-133	40.5	237
137	Excitonic Linewidth Approaching the Homogeneous Limit in MoS2-Based van der Waals Heterostructures. *Physical Review X*, **2017**, 7,	9.1	237
136	Direct observation of the electron spin relaxation induced by nuclei in quantum dots. *Physical Review Letters*, **2005**, 94, 116601	7.4	209
135	Exciton valley dynamics probed by Kerr rotation in WSe2 monolayers. *Physical Review B*, **2014**, 90,	3.3	207
134	Exciton fine structure and spin decoherence in monolayers of transition metal dichalcogenides. *Physical Review B*, **2014**, 89,	3.3	182
133	In-Plane Propagation of Light in Transition Metal Dichalcogenide Monolayers: Optical Selection Rules. *Physical Review Letters*, **2017**, 119, 047401	7.4	176
132	Two-dimensional semiconductors in the regime of strong light-matter coupling. *Nature Communications*, **2018**, 9, 2695	17.4	157
131	Splitting between bright and dark excitons in transition metal dichalcogenide monolayers. *Physical Review B*, **2016**, 93,	3.3	156
130	Spin-orbit engineering in transition metal dichalcogenide alloy monolayers. *Nature Communications* , **2015**, 6, 10110	17.4	142
129	Charged excitons in monolayer WSe2: Experiment and theory. *Physical Review B*, **2017**, 96,	3.3	137

128	Fine structure of highly charged excitons in semiconductor quantum dots. *Physical Review Letters*, **2003**, 90, 247403	7.4	114
127	Polarization and time-resolved photoluminescence spectroscopy of excitons in MoSe2 monolayers. *Applied Physics Letters*, **2015**, 106, 112101	3.4	110
126	Hybridization of electronic states in quantum dots through photon emission. *Nature*, **2004**, 427, 135-8	50.4	109
125	Symmetric quantum dots as efficient sources of highly entangled photons: Violation of Bell inequality without spectral and temporal filtering. *Physical Review B*, **2013**, 88,	3.3	104
124	Magneto-optics in transition metal diselenide monolayers. *2D Materials*, **2015**, 2, 034002	5.9	100
123	Fine structure and lifetime of dark excitons in transition metal dichalcogenide monolayers. *Physical Review B*, **2017**, 96,	3.3	98
122	Enabling valley selective exciton scattering in monolayer WSe through upconversion. *Nature Communications*, **2017**, 8, 14927	17.4	97
121	Revealing exciton masses and dielectric properties of monolayer semiconductors with high magnetic fields. *Nature Communications*, **2019**, 10, 4172	17.4	97
120	Dynamic nuclear polarization of a single charge-tunable InAs□GaAs quantum dot. *Physical Review B*, **2006**, 74,	3.3	96
119	Bistability of the nuclear polarization created through optical pumping in In1□GaxAs quantum dots. *Physical Review B*, **2006**, 74,	3.3	95
118	Control of Exciton Valley Coherence in Transition Metal Dichalcogenide Monolayers. *Physical Review Letters*, **2016**, 117, 187401	7.4	89
117	Robust quantum dot exciton generation via adiabatic passage with frequency-swept optical pulses. *Physical Review Letters*, **2011**, 106, 166801	7.4	87
116	Spin and valley dynamics of excitons in transition metal dichalcogenide monolayers. *Physica Status Solidi (B): Basic Research*, **2015**, 252, 2349-2362	1.3	85
115	Discrete quantum dot like emitters in monolayer MoSe2: Spatial mapping, magneto-optics, and charge tuning. *Applied Physics Letters*, **2016**, 108, 142101	3.4	77
114	Exciton diffusion in WSe2 monolayers embedded in a van der Waals heterostructure. *Applied Physics Letters*, **2018**, 112, 152106	3.4	76
113	Gate-Controlled Spin-Valley Locking of Resident Carriers in WSe_{2} Monolayers. *Physical Review Letters*, **2017**, 119, 137401	7.4	74
112	Electrical control of hole spin relaxation in charge tunable InAs/GaAs quantum dots. *Physical Review Letters*, **2005**, 94, 147401	7.4	71
111	3D assembly of upconverting NaYF4 nanocrystals by AFM nanoxerography: creation of anti-counterfeiting microtags. *Nanoscale*, **2013**, 5, 9587-92	7.7	67

110	Domain Architectures and Grain Boundaries in Chemical Vapor Deposited Highly Anisotropic ReS2 Monolayer Films. *Nano Letters*, **2016**, 16, 5888-94	11.5	67
109	Observation of exciton-phonon coupling in MoSe2 monolayers. *Physical Review B*, **2018**, 98,	3.3	65
108	Impact of heavy hole-light hole coupling on optical selection rules in GaAs quantum dots. *Applied Physics Letters*, **2010**, 97, 051111	3.4	60
107	Optical spectroscopy of excited exciton states in MoS2 monolayers in van der Waals heterostructures. *Physical Review Materials*, **2018**, 2,	3.2	60
106	Exciton states in monolayer MoSe 2 : impact on interband transitions. *2D Materials*, **2015**, 2, 045005	5.9	55
105	Ultra-low power threshold for laser induced changes in optical properties of 2D molybdenum dichalcogenides. *2D Materials*, **2016**, 3, 045008	5.9	54
104	Double resonant Raman scattering and valley coherence generation in monolayer WSe_{2}. *Physical Review Letters*, **2015**, 115, 117401	7.4	52
103	Growth of zinc blende MgS/ZnSe single quantum wells by molecular-beam epitaxy using ZnS as a sulphur source. *Applied Physics Letters*, **2000**, 76, 3929-3931	3.4	52
102	Phonon-Assisted Photoluminescence from Indirect Excitons in Monolayers of Transition-Metal Dichalcogenides. *Nano Letters*, **2020**, 20, 2849-2856	11.5	51
101	Control of the Exciton Radiative Lifetime in van der Waals Heterostructures. *Physical Review Letters* , **2019**, 123, 067401	7.4	49
100	Interlayer excitons in bilayer MoS2 with strong oscillator strength up to room temperature. *Physical Review B*, **2019**, 99,	3.3	48
99	Temperature-dependent linewidth of charged excitons in semiconductor quantum dots: Strongly broadened ground state transitions due to acoustic phonon scattering. *Physical Review B*, **2004**, 69,	3.3	46
98	Well separated trion and neutral excitons on superacid treated MoS2 monolayers. *Applied Physics Letters*, **2016**, 108, 251106	3.4	46
97	Synthesis of Highly Anisotropic Semiconducting GaTe Nanomaterials and Emerging Properties Enabled by Epitaxy. *Advanced Materials*, **2017**, 29, 1605551	24	45
96	Efficient dynamical nuclear polarization in quantum dots: Temperature dependence. *Physical Review B*, **2007**, 76,	3.3	45
95	Intrinsic exciton-state mixing and nonlinear optical properties in transition metal dichalcogenide monolayers. *Physical Review B*, **2017**, 95,	3.3	42
94	Negative circular polarization as a general property of n-doped self-assembled InAs□GaAs quantum dots under nonresonant optical excitation. *Physical Review B*, **2006**, 73,	3.3	42
93	Excitonic properties of semiconducting monolayer and bilayer MoTe2. *Physical Review B*, **2016**, 94,	3.3	40

92	Exciton dynamics in WSe2 bilayers. *Applied Physics Letters*, **2014**, 105, 182105	3.4	40
91	Spin dynamics in dilute nitride semiconductors at room temperature. *Applied Physics Letters*, **2005**, 87, 252115	3.4	40
90	High optical quality of MoS 2 monolayers grown by chemical vapor deposition. *2D Materials*, **2020**, 7, 015011	5.9	40
89	Highly confined excitons in MgS/ZnSe quantum wells grown by molecular beam epitaxy. *Physical Review B*, **2001**, 64,	3.3	39
88	Dark-bright mixing of interband transitions in symmetric semiconductor quantum dots. *Physical Review Letters*, **2011**, 107, 166604	7.4	38
87	Optically monitored nuclear spin dynamics in individual GaAs quantum dots grown by droplet epitaxy. *Physical Review B*, **2008**, 78,	3.3	37
86	Exciton States in Monolayer MoSe2 and MoTe2 Probed by Upconversion Spectroscopy. *Physical Review X*, **2018**, 8,	9.1	37
85	Controlling interlayer excitons in MoS layers grown by chemical vapor deposition. *Nature Communications*, **2020**, 11, 2391	17.4	36
84	Anomalous Hanle effect due to optically created transverse overhauser field in single InAs/GaAs quantum dots. *Physical Review Letters*, **2010**, 104, 056603	7.4	36
83	Measurement of the spin-forbidden dark excitons in MoS and MoSe monolayers. *Nature Communications*, **2020**, 11, 4037	17.4	35
82	Vanishing fine-structure splittings in telecommunication-wavelength quantum dots grown on (111)A surfaces by droplet epitaxy. *Physical Review B*, **2014**, 90,	3.3	34
81	Controlling the polarization eigenstate of a quantum dot exciton with light. *Physical Review Letters*, **2009**, 103, 086601	7.4	34
80	Exciton spin manipulation in InAs□GaAs quantum dots: Exchange interaction and magnetic field effects. *Physical Review B*, **2005**, 71,	3.3	34
79	Electrical spin injection into p-doped quantum dots through a tunnel barrier. *Applied Physics Letters*, **2007**, 90, 081111	3.4	33
78	Nuclear magnetization in gallium arsenide quantum dots at zero magnetic field. *Nature Communications*, **2014**, 5, 3268	17.4	32
77	Giant Stark splitting of an exciton in bilayer MoS. *Nature Nanotechnology*, **2020**, 15, 901-907	28.7	25
76	Bunching visibility for correlated photons from single GaAs quantum dots. *Physical Review B*, **2009**, 79,	3.3	23
75	Controlling the interaction of electron and nuclear spins in a tunnel-coupled quantum dot. *Physical Review Letters*, **2011**, 106, 046802	7.4	22

74	Magnetic field induced valence band mixing in [111] grown semiconductor quantum dots. *Physical Review B*, **2013**, 87,	3.3	21
73	Growth and characterization of MgS/CdSe self-assembled quantum dots. *Journal of Crystal Growth*, **2003**, 251, 581-585	1.6	19
72	Electron and hole spin cooling efficiency in InAs quantum dots: The role of nuclear field. *Applied Physics Letters*, **2010**, 96, 172108	3.4	18
71	Hyperfine interaction in InAs/GaAs self-assembled quantum dots: dynamical nuclear polarization versus spin relaxation. *Comptes Rendus Physique*, **2008**, 9, 874-884	1.4	18
70	Spectrally narrow exciton luminescence from monolayer MoS2 and MoSe2 exfoliated onto epitaxially grown hexagonal BN. *Applied Physics Letters*, **2018**, 113, 032106	3.4	17
69	Identifying short surface ligands on metal phosphide quantum dots. *Physical Chemistry Chemical Physics*, **2016**, 18, 17330-4	3.6	14
68	Electron spin quantum beats in positively charged quantum dots: Nuclear field effects. *Physical Review B*, **2007**, 75,	3.3	14
67	MBE growth of ZnS and ZnCdS layers on GaP. *Journal of Crystal Growth*, **2000**, 214-215, 197-201	1.6	14
66	2D materials: Ultrafast exciton dynamics. *Nature Materials*, **2015**, 14, 860-1	27	13
65	Electrical Initialization of Electron and Nuclear Spins in a Single Quantum Dot at Zero Magnetic Field. *Nano Letters*, **2018**, 18, 2381-2386	11.5	13
64	L-valley electron spin dynamics in GaAs. *Physical Review B*, **2013**, 87,	3.3	13
63	Excitonic properties of ZnS quantum wells. *Physical Review B*, **2001**, 64,	3.3	13
62	Excitonic properties of MgS/ZnSe quantum wells. *Applied Physics Letters*, **2000**, 77, 3755-3757	3.4	13
61	Guide to optical spectroscopy of layered semiconductors. *Nature Reviews Physics*, **2021**, 3, 39-54	23.6	13
60	Charge tuning in [111] grown GaAs droplet quantum dots. *Applied Physics Letters*, **2014**, 105, 082111	3.4	12
59	Carrier storage and capture dynamics in quantum-dot heterostructures. *Applied Physics Letters*, **2003**, 82, 3761-3763	3.4	12
58	Efficient phonon cascades in WSe monolayers. *Nature Communications*, **2021**, 12, 538	17.4	12
57	Growth of zinc blende MgS and MgS/ZnSe quantum wells by MBE using ZnS as a sulphur source. *Journal of Crystal Growth*, **2001**, 227-228, 634-638	1.6	11

56	Magnetospectroscopy of excited states in charge-tunable GaAs/AlGaAs [111] quantum dots. *Physical Review B*, **2016**, 93,	3.3	10
55	Intervalley polaron in atomically thin transition metal dichalcogenides. *Physical Review B*, **2019**, 100,	3.3	10
54	Electron spin dephasing and optical pumping of nuclear spins in GaN. *Physical Review B*, **2014**, 90,	3.3	9
53	Voltage control of electron-nuclear spin correlation time in a single quantum dot. *Physical Review B*, **2013**, 88,	3.3	9
52	Role of hyperfine interaction on electron spin optical orientation in charge-controlled InAs□GaAs single quantum dots. *Physica Status Solidi (A) Applications and Materials Science*, **2007**, 204, 202-207	1.6	9
51	Growth and characterization of CdSe:Mn quantum dots. *Journal of Crystal Growth*, **2003**, 251, 586-590	1.6	9
50	Growth of (Zn,Cd)S and (Zn,Mg)S containing structures on GaP. *Journal of Crystal Growth*, **2001**, 227-228, 655-659	1.6	9
49	Excitons with large binding energies in MgS/ZnSe/MgS and ZnMgS/ZnS/ZnMgS quantum wells. *Journal of Physics Condensed Matter*, **2001**, 13, 2317-2329	1.8	9
48	Hyperfine coupling of hole and nuclear spins in symmetric (111)-grown GaAs quantum dots. *Physical Review B*, **2016**, 94,	3.3	9
47	Probing dark exciton navigation through a local strain landscape in a WSe monolayer.. *Nature Communications*, **2022**, 13, 232	17.4	8
46	Monolayer Boron Nitride: Hyperspectral Imaging in the Deep Ultraviolet. *Nano Letters*, **2021**, 21, 10133-10138	10.8	8
45	Charged excitons in individual quantum dots: effects of vertical electric fields and optical pump power. *Physica E: Low-Dimensional Systems and Nanostructures*, **2003**, 17, 35-36	3	7
44	Interlayer exciton mediated second harmonic generation in bilayer MoS. *Nature Communications*, **2021**, 12, 6894	17.4	7
43	Strained InGaAsP multi-quantum-well structures for InP-based wide linewidth and polarization-insensitive semiconductor optical amplifiers. *Microelectronics Journal*, **2009**, 40, 827-829	1.8	6
42	Exciton Spin Dynamics in Semiconductor Quantum Dots. *Springer Series in Solid-state Sciences*, **2008**, 91-113	0.4	6
41	Temperature dependent photoluminescence of CdSe quantum dots grown in MgS and ZnSe. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2004**, 1, 755-758		5
40	Growth and Spectroscopy of CdSe: Mn Quantum Dots. *Journal of Superconductivity and Novel Magnetism*, **2003**, 16, 19-22		5
39	Measurement of the critical thickness of ZnCdSe quantum wells in ZnSe barrier layers by the piezoelectric effect. *Applied Physics Letters*, **1998**, 73, 3141-3143	3.4	5

38	The influence of magnesium on p-type doping and optoelectronic properties of Zn1−xMgxSe-based heterostructures. *Journal of Crystal Growth*, **1999**, 201-202, 950-953	1.6	5
37	Measurement of Conduction and Valence Bands g-Factors in a Transition Metal Dichalcogenide Monolayer. *Physical Review Letters*, **2021**, 126, 067403	7.4	5
36	Magneto photoluminescence in droplet epitaxial GaAs quantum rings. *Physica Status Solidi (B): Basic Research*, **2009**, 246, 861-863	1.3	4
35	Excitonic Properties of ZnS Quantum Wells in ZnMgS. *Physica Status Solidi (B): Basic Research*, **2002**, 229, 549-552	1.3	4
34	Unveiling the Optical Emission Channels of Monolayer Semiconductors Coupled to Silicon Nanoantennas. *ACS Photonics*, **2020**, 7, 3106-3115	6.3	4
33	Spin/valley pumping of resident electrons in WSe and WS monolayers. *Nature Communications*, **2021**, 12, 5455	17.4	4
32	Spin dynamics and hyperfine interaction in InAs semiconductor quantum dots. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 2266-2273	1.3	3
31	Spin relaxation of positive trions in InAs/GaAs quantum dots: the role of hyperfine interaction. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 3917-3921	1.3	3
30	Temperature dependence of the spin dynamics in undoped and n-doped InAs/GaAs quantum dots. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2004**, 1, 594-597		3
29	Spin dynamics in p-doped InAs/GaAs quantum dots. *Physica Status Solidi (B): Basic Research*, **2005**, 242, 1233-1236	1.3	3
28	On the impact of the stress situation on the optical properties of WSe_2 monolayers under high pressure. *Papers in Physics*,11, 110005		3
27	Physical Origins of Extreme Cross-Polarization Extinction in Confocal Microscopy. *Physical Review X*, **2021**, 11,	9.1	3
26	Control of the exciton valley dynamics in atomically thin semiconductors by tailoring the environment. *Physical Review B*, **2021**, 103,	3.3	3
25	Room Temperature Micro-Photoluminescence Studies of Colloidal WS2 Nanosheets. *Journal of Physical Chemistry C*, **2021**, 125, 18841-18848	3.8	3
24	Spin dynamics of electrons and holes in p-doped InAs/GaAs quantum dots. *Brazilian Journal of Physics*, **2006**, 36, 482-487	1.2	2
23	Charged magneto-exciton states in semiconductor quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **2005**, 26, 45-50	3	2
22	Controlling hole spin relaxation in charge tunable InAs/GaAs quantum dots. *AIP Conference Proceedings*, **2005**,	0	2
21	Electrical detection of light helicity using a quantum-dot-based hybrid device at zero magnetic field. *Physical Review Materials*, **2020**, 4,	3.2	2

20	Optical Orientation of Trions in Charge-Tunable InAs/GaAs Quantum Dots. *Acta Physica Polonica A*, **2004**, 106, 185-192	0.6	2
19	Electrically tunable dynamic nuclear spin polarization in GaAs quantum dots at zero magnetic field. *Applied Physics Letters*, **2018**, 112, 142103	3.4	1
18	Nuclear spin effects in quantum dot optics237-252		1
17	Carrier and nuclear spin pumping in strain free GaAs/AlGaAs quantum dots grown by droplet epitaxy **2011**,		1
16	Electrical spin injection in InAs/GaAs p-doped quantum dots through Co/Al2O3/GaAs tunnel barrier. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2007**, 4, 567-569		1
15	Charged Excitons in Self-assembled Quantum Dots. *Materials Research Society Symposia Proceedings*, **2002**, 737, 75		1
14	Relaxation and darkening of excitonic complexes in electrostatically doped monolayer WSe2 : Roles of exciton-electron and trion-electron interactions. *Physical Review B*, **2022**, 105,	3.3	1
13	Spin-Dependent Coupling of Charged Quantum Dot Excitons with Continuum States. *Acta Physica Polonica A*, **2004**, 106, 395-402	0.6	1
12	Asymmetric photoelectric effect: Auger-assisted hot hole photocurrents in transition metal dichalcogenides. *Nanophotonics*, **2020**, 10, 105-113	6.3	1
11	Exciton-phonon coupling in wide bandgap II□VI quantum wells. *Springer Proceedings in Physics*, **2001**, 549-550	0.2	1
10	Imaging Seebeck drift of excitons and trions in MoSe2 monolayers. *2D Materials*, **2021**, 8, 045014	5.9	1
9	Exciton Spin Dynamics in Semiconductor Quantum Dots. *Springer Series in Solid-state Sciences*, **2017**, 105-129	0.4	
8	Optical orientation of electron and nuclear spins in strain free GaAs quantum dots grown by droplet epitaxy. *Physica Status Solidi (B): Basic Research*, **2009**, 246, 762-765	1.3	
7	Charge-controlled nuclear polarization of a single InAs/GaAs quantum dot under optical pumping. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 3752-3756		
6	Fine structure of highly charged quantum dot excitons: turning dark into bright states. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2004**, 1, 421-425		
5	Coherent spin dynamics in semiconductor quantum dots. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2005**, 2, 3157-3162		
4	Strain relaxation of ZnCdSe quantum wells grown on (211)B GaAs measured using the piezoelectric effect. *Journal of Crystal Growth*, **1999**, 201-202, 510-513	1.6	
3	Les dichalcog□ures de m□aux de transition, nouveaux mat□iaux bidimensionnels **2016**, 21-25	0.1	

2	Tuning absorption and emission in monolayer semiconductors: a brief survey. *Comptes Rendus Physique*, **2021**, 22, 1-10	1.4
1	Spin dependent charge transfer in MoSe2/hBN/Ni hybrid structures. *Applied Physics Letters*, **2021**, 119, 263103	3.4