Thomas Mueller

List of Publications by Year
in descending order

119 papers	18,601 citations	71102 41 h-index	49909 87 g-index
119 all docs	119 docs citations	119 times ranked	18278 citing authors

#	Article	IF	Citations
1	Highâ€Speed Electroluminescence Modulation in Monolayer WS₂. Advanced Materials Technologies, 2022, 7, 2100915.	5.8	6
2	Low thermal conductivity in franckeite heterostructures. Nanoscale, 2022, 14, 2593-2598.	5.6	4
3	Sparse pixel image sensor. Scientific Reports, 2022, 12, 5650.	3.3	3
4	Signatures of bright-to-dark exciton conversion in corrugated MoS2 monolayers. Applied Surface Science, 2022, 600, 154078.	6.1	4
5	The performance limits of hexagonal boron nitride as an insulator for scaled CMOS devices based on two-dimensional materials. Nature Electronics, 2021, 4, 98-108.	26.0	161
6	Tunable graphene plasmons in nanoribbon arrays: the role of interactions. Optical Materials Express, 2021, 11, 1390.	3.0	2
7	1/<i>f</i> Noise Characterization of Bilayer MoS₂ Fieldâ€Effect Transistors on Paper with Inkjetâ€Printed Contacts and hBN Dielectrics. Advanced Electronic Materials, 2021, 7, 2100283.	5.1	4
8	A SPICE Compact Model for Ambipolar 2-D-Material FETs Aiming at Circuit Design. IEEE Transactions on Electron Devices, 2021, 68, 3096-3103.	3.0	9
9	High-responsivity graphene photodetectors integrated on silicon microring resonators. Nature Communications, 2021, 12, 3733.	12.8	57
10	Inkjet-printed low-dimensional materials-based complementary electronic circuits on paper. Npj 2D Materials and Applications, 2021, 5, .	7.9	16
11	Crystalline Calcium Fluoride: A Record-Thin Insulator for Nanoscale 2D Electronics. , 2020, , .		3
12	Low-voltage 2D materials-based printed field-effect transistors for integrated digital and analog electronics on paper. Nature Communications, 2020, 11, 3566.	12.8	120
13	Analogue two-dimensional semiconductor electronics. Nature Electronics, 2020, 3, 486-491.	26.0	74
14	Band Nesting in Two-Dimensional Crystals: An Exceptionally Sensitive Probe of Strain. Nano Letters, 2020, 20, 4242-4248.	9.1	30
15	Ultrafast machine vision with 2D material neural network image sensors. Nature, 2020, 579, 62-66.	27.8	546
16	Insulators for 2D nanoelectronics: the gap to bridge. Nature Communications, 2020, 11, 3385.	12.8	241
17	Nonvolatile Programmable WSe₂ Photodetector. Advanced Optical Materials, 2020, 8, 2000417.	7.3	16
18	Resonant photocurrent from a single quantum emitter in tungsten diselenide. 2D Materials, 2020, 7, 045021.	4.4	4

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19	Nanoscale Thermal Transport in 2D Nanostructures from Cryogenic to Room Temperature. Advanced Electronic Materials, 2019, 5, 1900331.	5.1	15
20	Localized Intervalley Defect Excitons as Single-Photon Emitters in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>WSe</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></r Physical Review Letters, 2019, 123, 146401.	7.8	82
21	Longest terrestrial migrations and movements around the world. Scientific Reports, 2019, 9, 15333.	3.3	91
22	Impact of Strain on the Second-Harmonic Generation in Transition Metal Dichalcogenide Monolayers. , 2019, , .		0
23	Cavity Enhanced Light-Matter Interaction in a Graphene Photodetector. , 2019, , .		1
24	Ultrathin calcium fluoride insulators for two-dimensional field-effect transistors. Nature Electronics, 2019, 2, 230-235.	26.0	156
25	Reliability of scalable MoS₂ FETs with 2â€‰nm crystalline CaF₂ insulators. 2D Materials, 2019, 6, 045004.	4.4	29
26	Electroluminescence from multi-particle exciton complexes in transition metal dichalcogenide semiconductors. Nature Communications, 2019, 10, 1709.	12.8	100
27	Analysis of nanosecond and femtosecond laser ablation of rear dielectrics of silicon wafer solar cells. Solar Energy Materials and Solar Cells, 2019, 192, 117-122.	6.2	18
28	Second harmonic generation in strained transition metal dichalcogenide monolayers: MoS2, MoSe2, WS2, and WSe2. APL Photonics, 2019, 4, .	5.7	92
29	Second Harmonic Generation and Electroluminescence in 2D Semiconductors. , 2019, , .		0
30	Device physics of van der Waals heterojunction solar cells. Npj 2D Materials and Applications, 2018, 2, .	7.9	100
31	Atomically thin pâ€“n junctions based on two-dimensional materials. Chemical Society Reviews, 2018, 47, 3339-3358.	38.1	231
32	Optical imaging of strain in two-dimensional crystals. Nature Communications, 2018, 9, 516.	12.8	144
33	A Physical Model for the Hysteresis in MoS₂ Transistors. IEEE Journal of the Electron Devices Society, 2018, 6, 972-978.	2.1	43
34	Femtosecond laser ablation of dielectric layers for high-efficiency silicon wafer solar cells. Solar Energy, 2018, 164, 287-291.	6.1	18
35	Graphene Photodetector Integrated on a Photonic Crystal Defect Waveguide. ACS Photonics, 2018, 5, 4758-4763.	6.6	73
36	Exciton physics and device application of two-dimensional transition metal dichalcogenide semiconductors. Npj 2D Materials and Applications, 2018, 2, .	7.9	526

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37	21% efficient screen-printed n-type silicon wafer solar cells with implanted phosphorus front surface field. Solar Energy Materials and Solar Cells, 2018, 186, 124-130.	6.2	12
38	Plasmonâ€“Plasmon Interactions and Radiative Damping of Graphene Plasmons. ACS Photonics, 2018, 5, 3459-3465.	6.6	17
39	Reliability of next-generation field-effect transistors with transition metal dichalcogenides. , 2018, , .		2
40	Second harmonic generation and light emission in 2D semiconductors (Conference Presentation). , 2018, , .		0
41	A microprocessor based on a two-dimensional semiconductor. Nature Communications, 2017, 8, 14948.	12.8	299
42	Thermal Light Emission from Monolayer MoS₂. Advanced Materials, 2017, 29, 1701304.	21.0	45
43	Energetic mapping of oxide traps in MoS ₂ field-effect transistors. 2D Materials, 2017, 4, 025108.	4.4	49
44	(Invited) Impact of Gate Dielectrics on the Threshold Voltage in MoS₂Transistors. ECS Transactions, 2017, 80, 203-217.	0.5	5
45	Photovoltaics in Van der Waals Heterostructures. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 106-116.	2.9	58
46	Growth, structure and stability of sputter-deposited MoS₂ thin films. Beilstein Journal of Nanotechnology, 2017, 8, 1115-1126.	2.8	44
47	Optoelectronic Devices Based on Atomically Thin Transition Metal Dichalcogenides. Applied Sciences (Switzerland), 2016, 6, 78.	2.5	96
48	Reliability of single-layer MoS<inf>2</inf> field-effect transistors with SiO<inf>2</inf> and hBN gate insulators. , 2016, , .		2
49	Controlled Generation of a pâ€“n Junction in a Waveguide Integrated Graphene Photodetector. Nano Letters, 2016, 16, 7107-7112.	9.1	166
50	The role of charge trapping in MoS ₂ /SiO ₂ and MoS ₂ /hBN field-effect transistors. 2D Materials, 2016, 3, 035004.	4.4	174
51	Black Phosphorus Mid-Infrared Photodetectors with High Gain. Nano Letters, 2016, 16, 4648-4655.	9.1	616
52	Impact of the phosphorus emitter doping profile on metal contact recombination of silicon wafer solar cells. Solar Energy Materials and Solar Cells, 2016, 147, 171-176.	6.2	26
53	Investigation of Low-Temperature Hydrogen Plasma-Etching Processes for Silicon Wafer Solar Cell Surface Passivation in an Industrial Inductively Coupled Plasma Deposition Tool. IEEE Journal of Photovoltaics, 2016, 6, 10-16.	2.5	9
54	Optoelectronics with two-dimensional atomic crystals. , 2016, , .		0

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55	Hot-carrier degradation in single-layer double-gated graphene field-effect transistors. , 2015, , .		1
56	2D materials and heterostructures for applications in optoelectronics. , 2015, , .		1
57	Hot-Carrier Degradation and Bias-Temperature Instability in Single-Layer Graphene Field-Effect Transistors: Similarities and Differences. IEEE Transactions on Electron Devices, 2015, 62, 3876-3881.	3.0	23
58	Influence of discharge power and annealing temperature on the properties of indium tin oxide thin films prepared by pulsed-DC magnetron sputtering. Vacuum, 2015, 121, 187-193.	3.5	15
59	Atomically-thin van der Waals Heterostructure Solar Cells. , 2015, , .		0
60	Excellent passivation of thin silicon wafers by HF-free hydrogen plasma etching using an industrial ICPECVD tool. Physica Status Solidi - Rapid Research Letters, 2015, 9, 47-52.	2.4	6
61	Electric field modulation of thermovoltage in single-layer MoS2. Applied Physics Letters, 2014, 105, .	3.3	16
62	Bias-temperature instability in single-layer graphene field-effect transistors: A reliability challenge. , 2014, , .		3
63	Solar Cells based on Atomically Thin Crystals. , 2014, , .		0
64	Differential electroluminescence imaging and the current transport efficiency of silicon wafer solar cells. , 2014, , .		8
65	Nanophotonics with two-dimensional atomic crystals. , 2014, , .		1
66	Introduction to the issue on graphene optoelectronics. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 6-8.	2.9	7
67	Solar-energy conversion and light emission in an atomic monolayer pâ€“n diode. Nature Nanotechnology, 2014, 9, 257-261.	31.5	1,175
68	Bias-temperature instability in single-layer graphene field-effect transistors. Applied Physics Letters, 2014, 105, .	3.3	37
69	Photovoltaic Effect in an Electrically Tunable van der Waals Heterojunction. Nano Letters, 2014, 14, 4785-4791.	9.1	943
70	Mechanisms of Photoconductivity in Atomically Thin MoS₂. Nano Letters, 2014, 14, 6165-6170.	9.1	563
71	Photodetectors based on graphene, other two-dimensional materials and hybrid systems. Nature Nanotechnology, 2014, 9, 780-793.	31.5	3,017
72	Photodetectors based on Atomically Thin Transition Metal Dichalcogenides. , 2014, , .		0

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73	Electrically driven light emission from an atomic monolayer crystal. , 2014, , .		0
74	Deposition temperature independent excellent passivation of highly boron doped silicon emitters by thermal atomic layer deposited Al2O3. Journal of Applied Physics, 2013, 114, 094505.	2.5	18
75	CMOS-compatible graphene photodetector covering all optical communication bands. Nature Photonics, 2013, 7, 892-896.	31.4	679
76	Metal-graphene-metal photodetectors. Proceedings of SPIE, 2013, , .	0.8	5
77	Integration of Graphene Photodetectors with Silicon-on-Insulator Waveguides. , 2013, , .		0
78	Analysis of intrinsic hydrogenated amorphous silicon passivation layer growth for use in heterojunction silicon wafer solar cells by optical emission spectroscopy. Journal of Applied Physics, 2013, 113, .	2.5	34
79	New concepts and geometries for graphene-based photodetectors. , 2012, , .		0
80	Intrinsic Speed Limit of Graphene-based Photodetectors. , 2012, , .		0
81	Silver nanoisland enhanced Raman interaction in graphene. Applied Physics Letters, 2012, 101, 153113.	3.3	45
82	Heterojunction Silicon Wafer Solar Cells using Amorphous Silicon Suboxides for Interface Passivation. Energy Procedia, 2012, 15, 97-106.	1.8	40
83	Nano- and microstructuring of graphene using UV-NIL. Nanotechnology, 2012, 23, 335301.	2.6	9
84	Microcavity-Integrated Graphene Photodetector. Nano Letters, 2012, 12, 2773-2777.	9.1	753
85	Intrinsic Response Time of Graphene Photodetectors. Nano Letters, 2011, 11, 2804-2808.	9.1	244
86	Efficient narrow-band light emission from a single carbon nanotube pâ€“n diode. Nature Nanotechnology, 2010, 5, 27-31.	31.5	181
87	Detecting light with graphene. Nature Photonics, 2010, 4, 338-338.	31.4	0
88	Graphene photodetectors for high-speed optical communications. Nature Photonics, 2010, 4, 297-301.	31.4	2,122
89	Zero-dark current operation of a metal-graphene-metal photodetector at 10 Gbit/s data rate. , 2010, , .		0
90	Graphene-based fast electronics and optoelectronics. , 2010, , .		10

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91	Graphene-based fast electronics and optoelectronics. , 2010, , .		2
92	Graphene nanophotonics. , 2010, , .		1
93	Graphene and carbon nanotube photonics. , 2009, , .		0
94	Quantitative nanoscale characterization. Materials Today, 2009, 12, 40-43.	14.2	25
95	Ultrafast graphene photodetector. Nature Nanotechnology, 2009, 4, 839-843.	31.5	2,748
96	Intersubband gain-induced dispersion. Optics Letters, 2009, 34, 208.	3.3	8
97	Role of contacts in graphene transistors: A scanning photocurrent study. Physical Review B, 2009, 79, .	3.2	347
98	Photocurrent Imaging and Efficient Photon Detection in a Graphene Transistor. Nano Letters, 2009, 9, 1039-1044.	9.1	543
99	Acoustic phonon-assisted damping of Rabi oscillations in InAs quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 2013-2015.	2.7	1
100	Terahertz Quantum Cascade Devices: From Intersubband Transition to Microcavity Laser. IEEE Journal of Selected Topics in Quantum Electronics, 2008, 14, 307-314.	2.9	2
101	Ultrafast phase-resolved pump-probe measurements on a quantum cascade laser. Applied Physics Letters, 2008, 93, 151106.	3.3	26
102	Photocurrent imaging of the potential profiles in a graphene transistor. , 2008, , .		1
103	High quality passivation for heterojunction solar cells by hydrogenated amorphous silicon suboxide films. Applied Physics Letters, 2008, 92, .	3.3	68
104	Acoustic phonon damping of Rabi oscillations in In(Ga)As quantum dots. , 2007, , .		0
105	Ultrafast spectral hole burning spectroscopy of exciton spin flip processes in InAsâˆ•GaAs quantum dots. Applied Physics Letters, 2006, 88, 192105.	3.3	11
106	THz collective oscillations of ballistic electrons in wide potential wells: Bridging classical transport with quantum dynamics. Europhysics Letters, 2005, 70, 534-540.	2.0	4
107	Intraband relaxation of photoexcited electrons in GaAs/AlGaAs quantum wells and InAs/GaAs self-assembled quantum dots. Semiconductor Science and Technology, 2004, 19, S287-S289.	2.0	4
108	Exotic transport regime in GaAs: absence of intervalley scattering leading to quasi-ballistic, real-space THz oscillations. Semiconductor Science and Technology, 2004, 19, S195-S198.	2.0	5

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109	Pulse-induced quantum interference of intersubband transitions in coupled quantum wells. Applied Physics Letters, 2004, 84, 64-66.	3.3	33
110	Intersublevel dynamics of semiconductor nanostructures. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 25, 271-279.	2.7	2
111	Ultrafast intraband spectroscopy of electron capture and relaxation in InAs/GaAs quantum dots. Applied Physics Letters, 2003, 83, 3572-3574.	3.3	99
112	Surface-modified GaAs terahertz plasmon emitter. Applied Physics Letters, 2002, 81, 871-873.	3.3	18
113	Terahertz emission from magnetoplasma oscillations in semiconductors. , 2002, 4643, 12.		2
114	Direct measurement of intersubband dynamics. Physica B: Condensed Matter, 2002, 314, 259-262.	2.7	0
115	Few-cycle THZ spectroscopy of semiconductor quantum structures. Physica E: Low-Dimensional Systems and Nanostructures, 2001, 9, 76-83.	2.7	2
116	Intersubband absorption dynamics in coupled quantum wells. Applied Physics Letters, 2001, 79, 2755-2757.	3.3	32
117	Coherent terahertz emission from optically pumped intersubband plasmons in parabolic quantum wells. Applied Physics Letters, 2000, 76, 3501-3503.	3.3	22
118	Graphene: Optoelectronic Devices. , 0, , 180-196.		0
119	TMDs â€“ Optoelectronic Devices. , 0, , 329-343.		0