# Thomas Mueller

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 98 papers | 14,083 citations | 35 h-index | 118 g-index |
| 119 ext. papers | 16,507 ext. citations | 10.1 avg, IF | 6.9 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 98 | Sparse pixel image sensor.. *Scientific Reports*, **2022**, 12, 5650 | 4.9 | 1 |
| 97 | Inkjet-printed low-dimensional materials-based complementary electronic circuits on paper. *Npj 2D Materials and Applications*, **2021**, 5, | 8.8 | 3 |
| 96 | Tunable graphene plasmons in nanoribbon arrays: the role of interactions. *Optical Materials Express* , **2021**, 11, 1390 | 2.6 | 1 |
| 95 | 1/f Noise Characterization of Bilayer MoS2 Field-Effect Transistors on Paper with Inkjet-Printed Contacts and hBN Dielectrics. *Advanced Electronic Materials*, **2021**, 7, 2100283 | 6.4 | 1 |
| 94 | A SPICE Compact Model for Ambipolar 2-D-Material FETs Aiming at Circuit Design. *IEEE Transactions on Electron Devices*, **2021**, 68, 3096-3103 | 2.9 | 0 |
| 93 | High-responsivity graphene photodetectors integrated on silicon microring resonators. *Nature Communications*, **2021**, 12, 3733 | 17.4 | 10 |
| 92 | 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 | 28.4 | 53 |
| 91 | Band Nesting in Two-Dimensional Crystals: An Exceptionally Sensitive Probe of Strain. *Nano Letters*, **2020**, 20, 4242-4248 | 11.5 | 14 |
| 90 | Ultrafast machine vision with 2D material neural network image sensors. *Nature*, **2020**, 579, 62-66 | 50.4 | 226 |
| 89 | Insulators for 2D nanoelectronics: the gap to bridge. *Nature Communications*, **2020**, 11, 3385 | 17.4 | 85 |
| 88 | Resonant photocurrent from a single quantum emitter in tungsten diselenide. *2D Materials*, **2020**, 7, 045021 | 5.9 | 2 |
| 87 | Low-voltage 2D materials-based printed field-effect transistors for integrated digital and analog electronics on paper. *Nature Communications*, **2020**, 11, 3566 | 17.4 | 61 |
| 86 | Analogue two-dimensional semiconductor electronics. *Nature Electronics*, **2020**, 3, 486-491 | 28.4 | 31 |
| 85 | Nonvolatile Programmable WSe2 Photodetector. *Advanced Optical Materials*, **2020**, 8, 2000417 | 8.1 | 8 |
| 84 | Ultrathin calcium fluoride insulators for two-dimensional field-effect transistors. *Nature Electronics*, **2019**, 2, 230-235 | 28.4 | 68 |
| 83 | Reliability of scalable MoS 2 FETs with 2 nm crystalline CaF 2 insulators. *2D Materials*, **2019**, 6, 045004 | 5.9 | 15 |
| 82 | Electroluminescence from multi-particle exciton complexes in transition metal dichalcogenide semiconductors. *Nature Communications*, **2019**, 10, 1709 | 17.4 | 48 |

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|---|---|---|---|
| 81 | Nanoscale Thermal Transport in 2D Nanostructures from Cryogenic to Room Temperature. *Advanced Electronic Materials*, **2019**, 5, 1900331 | 6.4 | 9 |
| 80 | Localized Intervalley Defect Excitons as Single-Photon Emitters in WSe_{2}. *Physical Review Letters*, **2019**, 123, 146401 | 7.4 | 44 |
| 79 | Longest terrestrial migrations and movements around the world. *Scientific Reports*, **2019**, 9, 15333 | 4.9 | 52 |
| 78 | Cavity Enhanced Light-Matter Interaction in a Graphene Photodetector **2019**, | | 1 |
| 77 | 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 | 6.4 | 10 |
| 76 | Second harmonic generation in strained transition metal dichalcogenide monolayers: MoS2, MoSe2, WS2, and WSe2. *APL Photonics*, **2019**, 4, 034404 | 5.2 | 56 |
| 75 | Device physics of van der Waals heterojunction solar cells. *Npj 2D Materials and Applications*, **2018**, 2, | 8.8 | 65 |
| 74 | Atomically thin p-n junctions based on two-dimensional materials. *Chemical Society Reviews*, **2018**, 47, 3339-3358 | 58.5 | 158 |
| 73 | Optical imaging of strain in two-dimensional crystals. *Nature Communications*, **2018**, 9, 516 | 17.4 | 81 |
| 72 | A Physical Model for the Hysteresis in MoS2 Transistors. *IEEE Journal of the Electron Devices Society*, **2018**, 6, 972-978 | 2.3 | 25 |
| 71 | Femtosecond laser ablation of dielectric layers for high-efficiency silicon wafer solar cells. *Solar Energy*, **2018**, 164, 287-291 | 6.8 | 13 |
| 70 | PlasmonPlasmon Interactions and Radiative Damping of Graphene Plasmons. *ACS Photonics*, **2018**, 5, 3459-3465 | 6.3 | 11 |
| 69 | Reliability of next-generation field-effect transistors with transition metal dichalcogenides **2018**, | | 2 |
| 68 | Graphene Photodetector Integrated on a Photonic Crystal Defect Waveguide. *ACS Photonics*, **2018**, 5, 4758-4763 | 6.3 | 46 |
| 67 | Exciton physics and device application of two-dimensional transition metal dichalcogenide semiconductors. *Npj 2D Materials and Applications*, **2018**, 2, | 8.8 | 267 |
| 66 | 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 | 6.4 | 8 |
| 65 | A microprocessor based on a two-dimensional semiconductor. *Nature Communications*, **2017**, 8, 14948 | 17.4 | 200 |
| 64 | Thermal Light Emission from Monolayer MoS. *Advanced Materials*, **2017**, 29, 1701304 | 24 | 32 |

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|---|---|---|---|
| 63 | Energetic mapping of oxide traps in MoS 2 field-effect transistors. *2D Materials*, **2017**, 4, 025108 | 5.9 | 35 |
| 62 | (Invited) Impact of Gate Dielectrics on the Threshold Voltage in MoS2Transistors. *ECS Transactions*, **2017**, 80, 203-217 | 1 | 5 |
| 61 | Photovoltaics in Van der Waals Heterostructures. *IEEE Journal of Selected Topics in Quantum Electronics*, **2017**, 23, 106-116 | 3.8 | 44 |
| 60 | Growth, structure and stability of sputter-deposited MoS thin films. *Beilstein Journal of Nanotechnology*, **2017**, 8, 1115-1126 | 3 | 30 |
| 59 | Black Phosphorus Mid-Infrared Photodetectors with High Gain. *Nano Letters*, **2016**, 16, 4648-55 | 11.5 | 476 |
| 58 | 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 | 6.4 | 22 |
| 57 | 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 | 3.7 | 6 |
| 56 | Optoelectronic Devices Based on Atomically Thin Transition Metal Dichalcogenides. *Applied Sciences (Switzerland)*, **2016**, 6, 78 | 2.6 | 74 |
| 55 | Controlled Generation of a p-n Junction in a Waveguide Integrated Graphene Photodetector. *Nano Letters*, **2016**, 16, 7107-7112 | 11.5 | 119 |
| 54 | The role of charge trapping in MoS 2 /SiO 2 and MoS 2 /hBN field-effect transistors. *2D Materials*, **2016**, 3, 035004 | 5.9 | 117 |
| 53 | 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 | 2.9 | 20 |
| 52 | 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 | 3.7 | 14 |
| 51 | 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 | 2.5 | 6 |
| 50 | Hot-carrier degradation in single-layer double-gated graphene field-effect transistors **2015**, | | 1 |
| 49 | 2D materials and heterostructures for applications in optoelectronics **2015**, | | 1 |
| 48 | Introduction to the issue on graphene optoelectronics. *IEEE Journal of Selected Topics in Quantum Electronics*, **2014**, 20, 6-8 | 3.8 | 3 |
| 47 | Solar-energy conversion and light emission in an atomic monolayer p-n diode. *Nature Nanotechnology*, **2014**, 9, 257-61 | 28.7 | 981 |
| 46 | Bias-temperature instability in single-layer graphene field-effect transistors. *Applied Physics Letters*, **2014**, 105, 143507 | 3.4 | 29 |

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|---|---|---|---|
| 45 | Photovoltaic effect in an electrically tunable van der Waals heterojunction. *Nano Letters*, **2014**, 14, 4785-91 | 11.5 | 759 |
| 44 | Mechanisms of photoconductivity in atomically thin MoS2. *Nano Letters*, **2014**, 14, 6165-70 | 11.5 | 443 |
| 43 | Photodetectors based on graphene, other two-dimensional materials and hybrid systems. *Nature Nanotechnology*, **2014**, 9, 780-93 | 28.7 | 2318 |
| 42 | Electric field modulation of thermovoltage in single-layer MoS2. *Applied Physics Letters*, **2014**, 105, 253103 | 3.4 | 10 |
| 41 | Bias-temperature instability in single-layer graphene field-effect transistors: A reliability challenge **2014**, | | 2 |
| 40 | Differential electroluminescence imaging and the current transport efficiency of silicon wafer solar cells **2014**, | | 7 |
| 39 | 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 | 17 |
| 38 | CMOS-compatible graphene photodetector covering all optical communication bands. *Nature Photonics*, **2013**, 7, 892-896 | 33.9 | 531 |
| 37 | Metal-graphene-metal photodetectors **2013**, | | 5 |
| 36 | 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, 234310 | 2.5 | 26 |
| 35 | Heterojunction Silicon Wafer Solar Cells using Amorphous Silicon Suboxides for Interface Passivation. *Energy Procedia*, **2012**, 15, 97-106 | 2.3 | 33 |
| 34 | Nano- and microstructuring of graphene using UV-NIL. *Nanotechnology*, **2012**, 23, 335301 | 3.4 | 8 |
| 33 | Microcavity-integrated graphene photodetector. *Nano Letters*, **2012**, 12, 2773-7 | 11.5 | 623 |
| 32 | Silver nanoisland enhanced Raman interaction in graphene. *Applied Physics Letters*, **2012**, 101, 153113 | 3.4 | 40 |
| 31 | Intrinsic response time of graphene photodetectors. *Nano Letters*, **2011**, 11, 2804-8 | 11.5 | 196 |
| 30 | Efficient narrow-band light emission from a single carbon nanotube p-n diode. *Nature Nanotechnology*, **2010**, 5, 27-31 | 28.7 | 155 |
| 29 | Graphene photodetectors for high-speed optical communications. *Nature Photonics*, **2010**, 4, 297-301 | 33.9 | 1782 |
| 28 | Graphene-based fast electronics and optoelectronics **2010**, | | 7 |

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| 27 | Graphene-based fast electronics and optoelectronics **2010**, | | 1 |
| 26 | Quantitative nanoscale characterization. *Materials Today*, **2009**, 12, 40-43 | 21.8 | 25 |
| 25 | Ultrafast graphene photodetector. *Nature Nanotechnology*, **2009**, 4, 839-43 | 28.7 | 2309 |
| 24 | Intersubband gain-induced dispersion. *Optics Letters*, **2009**, 34, 208-10 | 3 | 5 |
| 23 | Role of contacts in graphene transistors: A scanning photocurrent study. *Physical Review B*, **2009**, 79, | 3.3 | 319 |
| 22 | Photocurrent imaging and efficient photon detection in a graphene transistor. *Nano Letters*, **2009**, 9, 1039-44 | 11.5 | 486 |
| 21 | Terahertz Quantum Cascade Devices: From Intersubband Transition to Microcavity Laser. *IEEE Journal of Selected Topics in Quantum Electronics*, **2008**, 14, 307-314 | 3.8 | 2 |
| 20 | Ultrafast phase-resolved pump-probe measurements on a quantum cascade laser. *Applied Physics Letters*, **2008**, 93, 151106 | 3.4 | 20 |
| 19 | Photocurrent imaging of the potential profiles in a graphene transistor **2008**, | | 1 |
| 18 | High quality passivation for heterojunction solar cells by hydrogenated amorphous silicon suboxide films. *Applied Physics Letters*, **2008**, 92, 033504 | 3.4 | 57 |
| 17 | Acoustic phonon-assisted damping of Rabi oscillations in InAs quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **2008**, 40, 2013-2015 | 3 | 1 |
| 16 | Ultrafast spectral hole burning spectroscopy of exciton spin flip processes in InAs□GaAs quantum dots. *Applied Physics Letters*, **2006**, 88, 192105 | 3.4 | 7 |
| 15 | THz collective oscillations of ballistic electrons in wide potential wells: Bridging classical transport with quantum dynamics. *Europhysics Letters*, **2005**, 70, 534-540 | 1.6 | 4 |
| 14 | 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 | 1.8 | 4 |
| 13 | 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 | 1.8 | 5 |
| 12 | Pulse-induced quantum interference of intersubband transitions in coupled quantum wells. *Applied Physics Letters*, **2004**, 84, 64-66 | 3.4 | 31 |
| 11 | Intersublevel dynamics of semiconductor nanostructures. *Physica E: Low-Dimensional Systems and Nanostructures*, **2004**, 25, 271-279 | 3 | 2 |
| 10 | Ultrafast intraband spectroscopy of electron capture and relaxation in InAs/GaAs quantum dots. *Applied Physics Letters*, **2003**, 83, 3572-3574 | 3.4 | 90 |

# List of Publications

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|---|---|---|---|
| 9 | Direct measurement of intersubband dynamics. *Physica B: Condensed Matter*, **2002**, 314, 259-262 | 2.8 | |
| 8 | Surface-modified GaAs terahertz plasmon emitter. *Applied Physics Letters*, **2002**, 81, 871-873 | 3.4 | 17 |
| 7 | Terahertz emission from magnetoplasma oscillations in semiconductors **2002**, 4643, 12 | | 2 |
| 6 | Few-cycle THZ spectroscopy of semiconductor quantum structures. *Physica E: Low-Dimensional Systems and Nanostructures*, **2001**, 9, 76-83 | 3 | 1 |
| 5 | Intersubband absorption dynamics in coupled quantum wells. *Applied Physics Letters*, **2001**, 79, 2755-2757 | 3.4 | 24 |
| 4 | Coherent terahertz emission from optically pumped intersubband plasmons in parabolic quantum wells. *Applied Physics Letters*, **2000**, 76, 3501-3503 | 3.4 | 16 |
| 3 | Graphene: Optoelectronic Devices180-196 | | |
| 2 | TMDs Optoelectronic Devices329-343 | | |
| 1 | High-Speed Electroluminescence Modulation in Monolayer WS2. *Advanced Materials Technologies*,2100965 | 6.8 | 0 |