# Matthias Auf der Maur

## List of Publications by Citations



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|---|---|---|---|
| 91 papers | 1,608 citations | 21 h-index | 37 g-index |
| 124 ext. papers | 2,018 ext. citations | 4.2 avg, IF | 4.79 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 91 | Efficiency Drop in Green InGaN/GaN Light Emitting Diodes: The Role of Random Alloy Fluctuations. *Physical Review Letters*, **2016**, 116, 027401 | 7.4 | 244 |
| 90 | Titanium-carbide MXenes for work function and interface engineering in perovskite solar cells. *Nature Materials*, **2019**, 18, 1228-1234 | 27 | 199 |
| 89 | Pattern formation in hot embossing of thin polymer films. *Nanotechnology*, **2001**, 12, 173-177 | 3.4 | 111 |
| 88 | . *IEEE Transactions on Electron Devices*, **2011**, 58, 1425-1432 | 2.9 | 70 |
| 87 | Role of Ferroelectric Nanodomains in the Transport Properties of Perovskite Solar Cells. *Nano Letters*, **2016**, 16, 988-92 | 11.5 | 64 |
| 86 | Trap-assisted tunneling in InGaN/GaN single-quantum-well light-emitting diodes. *Applied Physics Letters*, **2014**, 105, 133504 | 3.4 | 59 |
| 85 | Strain evolution in GaN nanowires: From free-surface objects to coalesced templates. *Journal of Applied Physics*, **2013**, 114, 084307 | 2.5 | 50 |
| 84 | It's not easy being green: Strategies for all-nitrides, all-colour solid state lighting. *Physica Status Solidi - Rapid Research Letters*, **2012**, 6, 49-52 | 2.5 | 50 |
| 83 | Geometric conductive filament confinement by nanotips for resistive switching of HfO2-RRAM devices with high performance. *Scientific Reports*, **2016**, 6, 25757 | 4.9 | 50 |
| 82 | Nanofabrication using hot embossing lithography and electroforming. *Microelectronic Engineering*, **2001**, 57-58, 375-380 | 2.5 | 49 |
| 81 | On the importance of ferroelectric domains for the performance of perovskite solar cells. *Nano Energy*, **2018**, 48, 20-26 | 17.1 | 39 |
| 80 | Influence of the interface material layers and semiconductor energetic disorder on the open circuit voltage in polymer solar cells. *Journal of Polymer Science, Part B: Polymer Physics*, **2015**, 53, 690-699 | 2.6 | 31 |
| 79 | Nonlinear Work Function Tuning of Lead-Halide Perovskites by MXenes with Mixed Terminations. *Advanced Functional Materials*, **2020**, 30, 1909028 | 15.6 | 28 |
| 78 | Modeling of Dye sensitized solar cells using a finite element method. *Journal of Computational Electronics*, **2009**, 8, 398-409 | 1.8 | 27 |
| 77 | Modeling and simulation of energetically disordered organic solar cells. *Journal of Applied Physics*, **2014**, 116, 184502 | 2.5 | 25 |
| 76 | The real TiO2/HTM interface of solid-state dye solar cells: role of trapped states from a multiscale modelling perspective. *Nanoscale*, **2015**, 7, 1136-44 | 7.7 | 24 |
| 75 | Correlation between Cell Performance and Physical Transport Parameters in Dye Solar Cells. *Journal of Physical Chemistry C*, **2012**, 116, 1151-1157 | 3.8 | 23 |

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| 74 | Optoelectronic simulation and thickness optimization of energetically disordered organic solar cells. *Journal of Computational Electronics*, **2014**, 13, 933-942 | 1.8 | 22 |
| 73 | TiberCAD: towards multiscale simulation of optoelectronic devices. *Optical and Quantum Electronics*, **2008**, 40, 1077-1083 | 2.4 | 22 |
| 72 | Theoretical Investigation of a Dye Solar Cell Wrapped Around an Optical Fiber. *IEEE Journal of Quantum Electronics*, **2011**, 47, 1214-1221 | 2 | 21 |
| 71 | Simulation of dye solar cells: through and beyond one dimension. *Journal of Computational Electronics*, **2011**, 10, 424-436 | 1.8 | 21 |
| 70 | Multiscale approaches for the simulation of InGaN/GaN LEDs. *Journal of Computational Electronics*, **2015**, 14, 398-408 | 1.8 | 18 |
| 69 | Model of a realistic InP surface quantum dot extrapolated from atomic force microscopy results. *Nanotechnology*, **2014**, 25, 195201 | 3.4 | 18 |
| 68 | The relevance of correct injection model to simulate electrical properties of organic semiconductors. *Organic Electronics*, **2014**, 15, 1557-1570 | 3.5 | 16 |
| 67 | . *IEEE Transactions on Electron Devices*, **2012**, 59, 2979-2987 | 2.9 | 16 |
| 66 | Band gap engineering approaches to increase InGaN/GaN LED efficiency. *Optical and Quantum Electronics*, **2012**, 44, 83-88 | 2.4 | 16 |
| 65 | Strain effects in freestanding three-dimensional nitride nanostructures. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2005**, 2, 3891-3894 | | 15 |
| 64 | 3-D Simulation and Optimization of Organic Solar Cell With Periodic Back Contact Grating Electrode. *IEEE Journal of Photovoltaics*, **2015**, 5, 591-596 | 3.7 | 12 |
| 63 | Atomistic simulations of InGaN/GaN random alloy quantum well LEDs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2014**, 11, 632-634 | | 11 |
| 62 | Systematic Study of the PCE and Device Operation of Organic Tandem Solar Cells. *IEEE Journal of Photovoltaics*, **2016**, 6, 202-210 | 3.7 | 10 |
| 61 | Model of a GaAs Quantum Dot Embedded in a Polymorph AlGaAs Nanowire. *IEEE Journal of Selected Topics in Quantum Electronics*, **2013**, 19, 1-9 | 3.8 | 10 |
| 60 | Slot-Die-Printed Two-Dimensional ZrS Charge Transport Layer for Perovskite Light-Emitting Diodes. *ACS Applied Materials & Interfaces*, **2019**, 11, 48021-48028 | 9.5 | 10 |
| 59 | Inter-dot strain field effect on the optoelectronic properties of realistic InP lateral quantum-dot molecules. *Journal of Applied Physics*, **2015**, 117, 094306 | 2.5 | 9 |
| 58 | AlGaN/GaN HEMT Degradation: An Electro-Thermo-Mechanical Simulation. *IEEE Transactions on Electron Devices*, **2013**, 60, 3142-3148 | 2.9 | 9 |
| 57 | Coupling atomistic and continuous media models for electronic device simulation. *Journal of Computational Electronics*, **2013**, 12, 553-562 | 1.8 | 9 |

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| 56 | Multiscale simulation of MOS systems based on high-□xides. *Journal of Computational Electronics*, **2008**, 7, 398-402 | 1.8 | 9 |
| 55 | Simulating random alloy effects in III-nitride light emitting diodes. *Journal of Applied Physics*, **2020**, 128, 041102 | 2.5 | 9 |
| 54 | InGaN/GaN multi-quantum-well solar cells under high solar concentration and elevated temperatures for hybrid solar thermal-photovoltaic power plants. *Progress in Photovoltaics: Research and Applications*, **2020**, 28, 1167-1174 | 6.8 | 9 |
| 53 | A Multiparticle Drift-Diffusion Model and its Application to Organic and Inorganic Electronic Device Simulation. *IEEE Transactions on Electron Devices*, **2019**, 66, 2715-2722 | 2.9 | 8 |
| 52 | Influence of electromechanical coupling on optical properties of InGaN quantum-dot based light-emitting diodes. *Nanotechnology*, **2017**, 28, 015701 | 3.4 | 7 |
| 51 | Impact of Compositional Nonuniformity in (In,Ga)N-Based Light-Emitting Diodes. *Physical Review Applied*, **2019**, 12, | 4.3 | 7 |
| 50 | A Parametric Study of InGaN/GaN Nanorod Core-Shell LEDs. *IEEE Transactions on Electron Devices*, **2013**, 60, 171-177 | 2.9 | 7 |
| 49 | Coupling atomistic and finite element approaches for the simulation of optoelectronic devices. *Optical and Quantum Electronics*, **2009**, 41, 671-679 | 2.4 | 7 |
| 48 | Nano illumination microscopy: a technique based on scanning with an array of individually addressable nanoLEDs. *Optics Express*, **2020**, 28, 19044-19057 | 3.3 | 7 |
| 47 | InGaN/GaN nanoLED Arrays as a Novel Illumination Source for Biomedical Imaging and Sensing Applications. *Proceedings (mdpi)*, **2018**, 2, 892 | 0.3 | 7 |
| 46 | Compositionally Graded AlGaN Nanostructures: Strain Distribution and X-ray Diffraction Reciprocal Space Mapping. *Crystal Growth and Design*, **2020**, 20, 1543-1551 | 3.5 | 6 |
| 45 | Accelerating atomistic calculations of quantum energy eigenstates on graphic cards. *Computer Physics Communications*, **2014**, 185, 2510-2518 | 4.2 | 6 |
| 44 | TiberCAD: A new multiscale simulator for electronic and optoelectronic devices. *Superlattices and Microstructures*, **2007**, 41, 381-385 | 2.8 | 6 |
| 43 | Optical design of InGaN/GaN nanoLED arrays on a chip: toward: highly resolved illumination. *Nanotechnology*, **2021**, 32, 105203 | 3.4 | 6 |
| 42 | Carrier transport and emission efficiency in InGaN quantum-dot based light-emitting diodes. *Nanotechnology*, **2017**, 28, 275201 | 3.4 | 5 |
| 41 | Analytic approximations for solar cell open circuit voltage, short circuit current and fill factor. *Solar Energy*, **2019**, 187, 358-367 | 6.8 | 5 |
| 40 | A comprehensive study of popular eigenvalue methods employed for quantum calculation of energy eigenstates in nanostructures using GPUs. *Journal of Computational Electronics*, **2015**, 14, 593-603 | 1.8 | 5 |
| 39 | Atomistic simulation of InGaN/GaN quantum disk LEDs. *Optical and Quantum Electronics*, **2012**, 44, 89-94 | 2.4 | 5 |

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| 38 | Methylamine Gas Treatment Affords Improving Semitransparency, Efficiency, and Stability of CH3NH3PbBr3-Based Perovskite Solar Cells. *Solar Rrl*, **2021**, 5, 2100277 | 7.1 | 5 |
| 37 | Multiscale in modelling and validation for solar photovoltaics. *EPJ Photovoltaics*, **2018**, 9, 10 | 0.7 | 5 |
| 36 | Drift-Diffusion Study of the IQE Roll-Off in Blue Thermally Activated Delayed Fluorescence OLEDs. *Advanced Electronic Materials*, **2020**, 6, 2000245 | 6.4 | 4 |
| 35 | Multiscale Approaches for the Simulation of Optoelectronic Devices. *Journal of Green Engineering (discontinued)*, **2016**, 5, 133-156 | | 4 |
| 34 | Modeling of Filamentary Conduction in Organic Thin Film Memories and Comparison With Experimental Data. *IEEE Nanotechnology Magazine*, **2016**, 15, 60-69 | 2.6 | 3 |
| 33 | Charge trapping models of resistance switching in organic bistable devices with embedded nanoparticles. *Organic Electronics*, **2014**, 15, 2792-2801 | 3.5 | 3 |
| 32 | Influence of random alloy fluctuations in InGaN/GaN quantum wells on LED efficiency **2015**, | | 3 |
| 31 | Effect of alloy fluctuations in InGaN/GaN quantum wells on optical emission strength **2014**, | | 3 |
| 30 | Reverse bias breakdown and photocurrent gain in CH3NH3PbBr3 films. *Applied Physics Letters*, **2022**, 120, 113505 | 3.4 | 3 |
| 29 | Characterization of non-uniform InGaN alloys: spatial localization of carriers and optical properties. *Japanese Journal of Applied Physics*, **2019**, 58, SCCC03 | 1.4 | 2 |
| 28 | Influence of polar surface properties on InGaN/GaN core-shell nanorod LED properties. *Optical and Quantum Electronics*, **2013**, 45, 617-622 | 2.4 | 2 |
| 27 | Strong free-carrier electro-optic response of sputtered ZnO films. *Journal of Applied Physics*, **2012**, 112, 053514 | 2.5 | 2 |
| 26 | Optoelectronic and transport properties of nanocolumnar InGaN/GaN quantum disk LEDs **2010**, | | 2 |
| 25 | Multiscale Simulation of Electronic and Optoelectronic Devices with TiberCAD **2007**, 245-248 | | 2 |
| 24 | Piezo-electric fields and state-filling photo-luminescence in natural InP/GaInP2 Wigner molecule structures. *Applied Physics Letters*, **2021**, 118, 121101 | 3.4 | 2 |
| 23 | Individually Switchable InGaN/GaN Nano-LED Arrays as Highly Resolved Illumination Engines. *Electronics (Switzerland)*, **2021**, 10, 1829 | 2.6 | 2 |
| 22 | Electromechanical field effects in InAs/GaAs quantum dots based on continuum k-□p-□and atomistic tight-binding methods. *Computational Materials Science*, **2021**, 197, 110678 | 3.2 | 2 |
| 21 | Temperature and intensity dependence of the open-circuit voltage of InGaN/GaN multi-quantum well solar cells. *Solar Energy Materials and Solar Cells*, **2021**, 230, 111253 | 6.4 | 2 |

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| 20 | Multiscale Modeling of Photovoltaic Devices. *International Journal of Photoenergy*, **2018**, 2018, 1-1 | 2.1 | 1 |
| 19 | Multiscale simulation of solid state dye sensitized solar cells including morphology effects **2014**, | | 1 |
| 18 | Atomistic simulation of GaAs/AlGaAs quantum dot/ring nanostructures **2015**, | | 1 |
| 17 | Electro-thermo-mechanical simulation of AlGaN/GaN HEMTs **2012**, | | 1 |
| 16 | Physics based simulation of dye solar cells. *Optical and Quantum Electronics*, **2011**, 42, 809-815 | 2.4 | 1 |
| 15 | Handshaking multiscale thermal model of nanostructured devices **2010**, | | 1 |
| 14 | Comparison of continuum and atomistic methods for the analysis of InAs/GaAs quantum dots **2011**, | | 1 |
| 13 | Simulations of Optical Properties of a GaN Quantum Dot Embedded in a AlGaN Nanocolumn within a Mixed FEM/atomistic Method **2009**, | | 1 |
| 12 | Concurrent multiscale simulation of electronic devices. *Journal of Computational Electronics*, **2010**, 9, 262-268 | 1.8 | 1 |
| 11 | TiberCAD: Towards multiscale simulation of optoelectronic devices **2008**, | | 1 |
| 10 | Simulation of exciton formation and transport in electrically driven polariton laser structures. *Superlattices and Microstructures*, **2007**, 41, 364-367 | 2.8 | 1 |
| 9 | A Novel Approach for a Chip-Sized Scanning Optical Microscope. *Micromachines*, **2021**, 12, | 3.3 | 1 |
| 8 | Pursuing the Diffraction Limit with Nano-LED Scanning Transmission Optical Microscopy. *Sensors*, **2021**, 21, | 3.8 | 1 |
| 7 | An optical absorption model including absorber saturation. *Journal of Computational Electronics*, **2016**, 15, 1064-1070 | 1.8 | 1 |
| 6 | Analytic approximations for solar cell open circuit voltage, short circuit current and fill factor **2016**, | | 1 |
| 5 | Highly Accurate Discretizations for non-Boltzmann Charge Transport in Semiconductors **2018**, | | 1 |
| 4 | Introduction to the OQE special issue on numerical simulation of optoelectronic devices NUSOD'12. *Optical and Quantum Electronics*, **2013**, 45, 571-571 | 2.4 | |
| 3 | Optoelectronic properties of nanocolumnar InGaN/GaN quantum disk LEDs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2012**, 9, 1315-1319 | | |

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| 2 | Simulation of piezoresistivity effect in FETs. *Journal of Computational Electronics*, **2007**, 5, 323-326 | 1.8 |
| 1 | Piezoelectric tunability and topological insulator transition in a GaN/InN/GaN quantum-well device. *JPhys Materials*, **2021**, 4, 034008 | 4.2 |