Matthias Auf der Maur

List of Publications by Year in Descending Order

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	Reverse bias breakdown and photocurrent gain in CH3NH3PbBr3 films. *Applied Physics Letters*, **2022**, 120, 113505	3.4	3
90	Optical design of InGaN/GaN nanoLED arrays on a chip: toward: highly resolved illumination. *Nanotechnology*, **2021**, 32, 105203	3.4	6
89	Piezo-electric fields and state-filling photo-luminescence in natural InP/GaInP2 Wigner molecule structures. *Applied Physics Letters*, **2021**, 118, 121101	3.4	2
88	Piezoelectric tunability and topological insulator transition in a GaN/InN/GaN quantum-well device. *JPhys Materials*, **2021**, 4, 034008	4.2	
87	A Novel Approach for a Chip-Sized Scanning Optical Microscope. *Micromachines*, **2021**, 12,	3.3	1
86	Pursuing the Diffraction Limit with Nano-LED Scanning Transmission Optical Microscopy. *Sensors*, **2021**, 21,	3.8	1
85	Methylamine Gas Treatment Affords Improving Semitransparency, Efficiency, and Stability of CH3NH3PbBr3-Based Perovskite Solar Cells. *Solar Rrl*, **2021**, 5, 2100277	7.1	5
84	Individually Switchable InGaN/GaN Nano-LED Arrays as Highly Resolved Illumination Engines. *Electronics (Switzerland)*, **2021**, 10, 1829	2.6	2
83	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
82	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
81	Compositionally Graded AlGaN Nanostructures: Strain Distribution and X-ray Diffraction Reciprocal Space Mapping. *Crystal Growth and Design*, **2020**, 20, 1543-1551	3.5	6
80	Nano illumination microscopy: a technique based on scanning with an array of individually addressable nanoLEDs. *Optics Express*, **2020**, 28, 19044-19057	3.3	7
79	Drift-Diffusion Study of the IQE Roll-Off in Blue Thermally Activated Delayed Fluorescence OLEDs. *Advanced Electronic Materials*, **2020**, 6, 2000245	6.4	4
78	Simulating random alloy effects in III-nitride light emitting diodes. *Journal of Applied Physics*, **2020**, 128, 041102	2.5	9
77	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
76	Nonlinear Work Function Tuning of Lead-Halide Perovskites by MXenes with Mixed Terminations. *Advanced Functional Materials*, **2020**, 30, 1909028	15.6	28
75	Titanium-carbide MXenes for work function and interface engineering in perovskite solar cells. *Nature Materials*, **2019**, 18, 1228-1234	27	199

74	Analytic approximations for solar cell open circuit voltage, short circuit current and fill factor. *Solar Energy*, **2019**, 187, 358-367	6.8	5
73	Characterization of non-uniform InGaN alloys: spatial localization of carriers and optical properties. *Japanese Journal of Applied Physics*, **2019**, 58, SCCC03	1.4	2
72	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
71	Impact of Compositional Nonuniformity in (In,Ga)N-Based Light-Emitting Diodes. *Physical Review Applied*, **2019**, 12,	4.3	7
70	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
69	On the importance of ferroelectric domains for the performance of perovskite solar cells. *Nano Energy*, **2018**, 48, 20-26	17.1	39
68	Multiscale Modeling of Photovoltaic Devices. *International Journal of Photoenergy*, **2018**, 2018, 1-1	2.1	1
67	InGaN/GaN nanoLED Arrays as a Novel Illumination Source for Biomedical Imaging and Sensing Applications. *Proceedings (mdpi)*, **2018**, 2, 892	0.3	7
66	Highly Accurate Discretizations for non-Boltzmann Charge Transport in Semiconductors **2018**,		1
65	Multiscale in modelling and validation for solar photovoltaics. *EPJ Photovoltaics*, **2018**, 9, 10	0.7	5
64	Carrier transport and emission efficiency in InGaN quantum-dot based light-emitting diodes. *Nanotechnology*, **2017**, 28, 275201	3.4	5
63	Influence of electromechanical coupling on optical properties of InGaN quantum-dot based light-emitting diodes. *Nanotechnology*, **2017**, 28, 015701	3.4	7
62	Efficiency Drop in Green InGaN/GaN Light Emitting Diodes: The Role of Random Alloy Fluctuations. *Physical Review Letters*, **2016**, 116, 027401	7.4	244
61	Role of Ferroelectric Nanodomains in the Transport Properties of Perovskite Solar Cells. *Nano Letters*, **2016**, 16, 988-92	11.5	64
60	Modeling of Filamentary Conduction in Organic Thin Film Memories and Comparison With Experimental Data. *IEEE Nanotechnology Magazine*, **2016**, 15, 60-69	2.6	3
59	Systematic Study of the PCE and Device Operation of Organic Tandem Solar Cells. *IEEE Journal of Photovoltaics*, **2016**, 6, 202-210	3.7	10
58	Multiscale Approaches for the Simulation of Optoelectronic Devices. *Journal of Green Engineering (discontinued)*, **2016**, 5, 133-156		4
57	Geometric conductive filament confinement by nanotips for resistive switching of HfO2-RRAM devices with high performance. *Scientific Reports*, **2016**, 6, 25757	4.9	50

56	An optical absorption model including absorber saturation. *Journal of Computational Electronics*, **2016**, 15, 1064-1070	1.8	1
55	Analytic approximations for solar cell open circuit voltage, short circuit current and fill factor **2016**,		1
54	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
53	Multiscale approaches for the simulation of InGaN/GaN LEDs. *Journal of Computational Electronics*, **2015**, 14, 398-408	1.8	18
52	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
51	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
50	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
49	Influence of random alloy fluctuations in InGaN/GaN quantum wells on LED efficiency **2015**,		3
48	Atomistic simulation of GaAs/AlGaAs quantum dot/ring nanostructures **2015**,		1
47	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
46	The relevance of correct injection model to simulate electrical properties of organic semiconductors. *Organic Electronics*, **2014**, 15, 1557-1570	3.5	16
45	Multiscale simulation of solid state dye sensitized solar cells including morphology effects **2014**,		1
44	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
43	Optoelectronic simulation and thickness optimization of energetically disordered organic solar cells. *Journal of Computational Electronics*, **2014**, 13, 933-942	1.8	22
42	Charge trapping models of resistance switching in organic bistable devices with embedded nanoparticles. *Organic Electronics*, **2014**, 15, 2792-2801	3.5	3
41	Accelerating atomistic calculations of quantum energy eigenstates on graphic cards. *Computer Physics Communications*, **2014**, 185, 2510-2518	4.2	6
40	Trap-assisted tunneling in InGaN/GaN single-quantum-well light-emitting diodes. *Applied Physics Letters*, **2014**, 105, 133504	3.4	59
39	Modeling and simulation of energetically disordered organic solar cells. *Journal of Applied Physics*, **2014**, 116, 184502	2.5	25

38	Effect of alloy fluctuations in InGaN/GaN quantum wells on optical emission strength **2014**,		3
37	Model of a realistic InP surface quantum dot extrapolated from atomic force microscopy results. *Nanotechnology*, **2014**, 25, 195201	3.4	18
36	Introduction to the OQE special issue on numerical simulation of optoelectronic devices NUSOD 12. *Optical and Quantum Electronics*, **2013**, 45, 571-571	2.4	
35	Strain evolution in GaN nanowires: From free-surface objects to coalesced templates. *Journal of Applied Physics*, **2013**, 114, 084307	2.5	50
34	AlGaN/GaN HEMT Degradation: An Electro-Thermo-Mechanical Simulation. *IEEE Transactions on Electron Devices*, **2013**, 60, 3142-3148	2.9	9
33	Coupling atomistic and continuous media models for electronic device simulation. *Journal of Computational Electronics*, **2013**, 12, 553-562	1.8	9
32	Influence of polar surface properties on InGaN/GaN core-shell nanorod LED properties. *Optical and Quantum Electronics*, **2013**, 45, 617-622	2.4	2
31	A Parametric Study of InGaN/GaN Nanorod Core-Shell LEDs. *IEEE Transactions on Electron Devices*, **2013**, 60, 171-177	2.9	7
30	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
29	Electro-thermo-mechanical simulation of AlGaN/GaN HEMTs **2012**,		1
28	Correlation between Cell Performance and Physical Transport Parameters in Dye Solar Cells. *Journal of Physical Chemistry C*, **2012**, 116, 1151-1157	3.8	23
27	Strong free-carrier electro-optic response of sputtered ZnO films. *Journal of Applied Physics*, **2012**, 112, 053514	2.5	2
26	. *IEEE Transactions on Electron Devices*, **2012**, 59, 2979-2987	2.9	16
25	Optoelectronic properties of nanocolumnar InGaN/GaN quantum disk LEDs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2012**, 9, 1315-1319		
24	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
23	Band gap engineering approaches to increase InGaN/GaN LED efficiency. *Optical and Quantum Electronics*, **2012**, 44, 83-88	2.4	16
22	Atomistic simulation of InGaN/GaN quantum disk LEDs. *Optical and Quantum Electronics*, **2012**, 44, 89-94	2.4	5
21	Theoretical Investigation of a Dye Solar Cell Wrapped Around an Optical Fiber. *IEEE Journal of Quantum Electronics*, **2011**, 47, 1214-1221	2	21

20	. *IEEE Transactions on Electron Devices*, **2011**, 58, 1425-1432	2.9	70
19	Simulation of dye solar cells: through and beyond one dimension. *Journal of Computational Electronics*, **2011**, 10, 424-436	1.8	21
18	Physics based simulation of dye solar cells. *Optical and Quantum Electronics*, **2011**, 42, 809-815	2.4	1
17	Comparison of continuum and atomistic methods for the analysis of InAs/GaAs quantum dots **2011**,		1
16	Optoelectronic and transport properties of nanocolumnar InGaN/GaN quantum disk LEDs **2010**,		2
15	Handshaking multiscale thermal model of nanostructured devices **2010**,		1
14	Concurrent multiscale simulation of electronic devices. *Journal of Computational Electronics*, **2010**, 9, 262-268	1.8	1
13	Modeling of Dye sensitized solar cells using a finite element method. *Journal of Computational Electronics*, **2009**, 8, 398-409	1.8	27
12	Coupling atomistic and finite element approaches for the simulation of optoelectronic devices. *Optical and Quantum Electronics*, **2009**, 41, 671-679	2.4	7
11	Simulations of Optical Properties of a GaN Quantum Dot Embedded in a AlGaN Nanocolumn within a Mixed FEM/atomistic Method **2009**,		1
10	TiberCAD: Towards multiscale simulation of optoelectronic devices **2008**,		1
9	TiberCAD: towards multiscale simulation of optoelectronic devices. *Optical and Quantum Electronics*, **2008**, 40, 1077-1083	2.4	22
8	Multiscale simulation of MOS systems based on high-κ oxides. *Journal of Computational Electronics*, **2008**, 7, 398-402	1.8	9
7	Simulation of exciton formation and transport in electrically driven polariton laser structures. *Superlattices and Microstructures*, **2007**, 41, 364-367	2.8	1
6	Simulation of piezoresistivity effect in FETs. *Journal of Computational Electronics*, **2007**, 5, 323-326	1.8	
5	TiberCAD: A new multiscale simulator for electronic and optoelectronic devices. *Superlattices and Microstructures*, **2007**, 41, 381-385	2.8	6
4	Multiscale Simulation of Electronic and Optoelectronic Devices with TiberCAD **2007**, 245-248		2
3	Strain effects in freestanding three-dimensional nitride nanostructures. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2005**, 2, 3891-3894		15

List of Publications

2 Nanofabrication using hot embossing lithography and electroforming. *Microelectronic Engineering*, **2001**, 57-58, 375-380 2.5 49

1 Pattern formation in hot embossing of thin polymer films. *Nanotechnology*, **2001**, 12, 173-177 3.4 111