Lambert Jan Anton Koster

List of Publications by Year
in descending order

97 papers	15,560 citations	38742 50 h-index	39675 94 g-index
99 all docs	99 docs citations	99 times ranked	12702 citing authors

#	Article	IF	Citations
1	Device Physics of Polymer:Fullerene Bulk Heterojunction Solar Cells. Advanced Materials, 2007, 19, 1551-1566.	21.0	2,000
2	Charge Transport and Photocurrent Generation in Poly(3-hexylthiophene): Methanofullerene Bulk-Heterojunction Solar Cells. Advanced Functional Materials, 2006, 16, 699-708.	14.9	1,235
3	Light intensity dependence of open-circuit voltage of polymer:fullerene solar cells. Applied Physics Letters, 2005, 86, 123509.	3.3	1,145
4	Photocurrent Generation in Polymer-Fullerene Bulk Heterojunctions. Physical Review Letters, 2004, 93, 216601.	7.8	922
5	Recombination in Perovskite Solar Cells: Significance of Grain Boundaries, Interface Traps, and Defect Ions. ACS Energy Letters, 2017, 2, 1214-1222.	17.4	826
6	Highly Reproducible Snâ€Based Hybrid Perovskite Solar Cells with 9% Efficiency. Advanced Energy Materials, 2018, 8, 1702019.	19.5	726
7	Origin of the light intensity dependence of the short-circuit current of polymer/fullerene solar cells. Applied Physics Letters, 2005, 87, 203502.	3.3	569
8	Competition between recombination and extraction of free charges determines the fill factor of organic solar cells. Nature Communications, 2015, 6, 7083.	12.8	517
9	The effect of three-dimensional morphology on the efficiency of hybrid polymer solar cells. Nature Materials, 2009, 8, 818-824.	27.5	511
10	Compositional Dependence of the Performance of Poly(p-phenylene vinylene):Methanofullerene Bulk-Heterojunction Solar Cells. Advanced Functional Materials, 2005, 15, 795-801.	14.9	383
11	Pathways to a New Efficiency Regime for Organic Solar Cells. Advanced Energy Materials, 2012, 2, 1246-1253.	19.5	343
12	Quantifying Bimolecular Recombination Losses in Organic Bulk Heterojunction Solar Cells. Advanced Materials, 2011, 23, 1670-1674.	21.0	328
13	Origin of the Reduced Fill Factor and Photocurrent in MDMOâ€PPV:PCNEPV Allâ€Polymer Solar Cells. Advanced Functional Materials, 2007, 17, 2167-2173.	14.9	280
14	Trap-Assisted Recombination in Disordered Organic Semiconductors. Physical Review Letters, 2011, 107, 256805.	7.8	260
15	Revealing Charge Carrier Mobility and Defect Densities in Metal Halide Perovskites via Space-Charge-Limited Current Measurements. ACS Energy Letters, 2021, 6, 1087-1094.	17.4	254
16	Origin of the enhanced performance in poly(3-hexylthiophene): [6,6]-phenyl C61-butyric acid methyl ester solar cells upon slow drying of the active layer. Applied Physics Letters, 2006, 89, 012107.	3.3	222
17	Enhanced n-Doping Efficiency of a Naphthalenediimide-Based Copolymer through Polar Side Chains for Organic Thermoelectrics. ACS Energy Letters, 2018, 3, 278-285.	17.4	220
18	15.34% efficiency all-small-molecule organic solar cells with an improved fill factor enabled by a fullerene additive. Energy and Environmental Science, 2020, 13, 2134-2141.	30.8	218

#	Article	IF	Citations
19	Optimum charge carrier mobility in organic solar cells. Applied Physics Letters, 2007, 90, 133504.	3.3	217
20	Enhancing Molecular nâ€Type Doping of Donorâ€“Acceptor Copolymers by Tailoring Side Chains. Advanced Materials, 2018, 30, 1704630.	21.0	217
21	Toward Understanding Space-Charge Limited Current Measurements on Metal Halide Perovskites. ACS Energy Letters, 2020, 5, 376-384.	17.4	211
22	Long-range exciton diffusion in molecular non-fullerene acceptors. Nature Communications, 2020, 11, 5220.	12.8	204
23	Strategy for Enhancing the Dielectric Constant of Organic Semiconductors Without Sacrificing Charge Carrier Mobility and Solubility. Advanced Functional Materials, 2015, 25, 150-157.	14.9	178
24	Thickness dependence of the efficiency of polymer:fullerene bulk heterojunction solar cells. Applied Physics Letters, 2006, 88, 243502.	3.3	166
25	Nâ€Type Organic Thermoelectrics of Donorâ€“Acceptor Copolymers: Improved Power Factor by Molecular Tailoring of the Density of States. Advanced Materials, 2018, 30, e1804290.	21.0	161
26	Effect of metal electrodes on the performance of polymer:fullerene bulk heterojunction solar cells. Applied Physics Letters, 2004, 85, 970-972.	3.3	134
27	Improving Perovskite Solar Cells: Insights From a Validated Device Model. Advanced Energy Materials, 2017, 7, 1602432.	19.5	132
28	Nâ€Type Organic Thermoelectrics: Improved Power Factor by Tailoring Hostâ€“Dopant Miscibility. Advanced Materials, 2017, 29, 1701641.	21.0	131
29	Charge Transport Layers Limiting the Efficiency of Perovskite Solar Cells: How To Optimize Conductivity, Doping, and Thickness. ACS Applied Energy Materials, 2019, 2, 6280-6287.	5.1	110
30	Overcoming Coulomb Interaction Improves Free-Charge Generation and Thermoelectric Properties for n-Doped Conjugated Polymers. ACS Energy Letters, 2019, 4, 1556-1564.	17.4	110
31	The Effect of the Microstructure on Trapâ€Assisted Recombination and Light Soaking Phenomenon in Hybrid Perovskite Solar Cells. Advanced Functional Materials, 2016, 26, 8094-8102.	14.9	108
32	A Conclusive View on Charge Generation, Recombination, and Extraction in Asâ€Prepared and Annealed P3HT:PCBM Blends: Combined Experimental and Simulation Work. Advanced Energy Materials, 2014, 4, 1301401.	19.5	104
33	Scaling Theory for Percolative Charge Transport in Disordered Molecular Semiconductors. Physical Review Letters, 2011, 107, 136601.	7.8	101
34	Discriminating between Bilayer and Bulk Heterojunction Polymer:Fullerene Solar Cells Using the External Quantum Efficiency. ACS Applied Materials & Interfaces, 2011, 3, 3252-3255.	8.0	99
35	A New Figure of Merit for Organic Solar Cells with Transport-limited Photocurrents. Scientific Reports, 2016, 6, 24861.	3.3	98
36	N-type organic thermoelectrics: demonstration of ZTâ€‰>â€‰0.3. Nature Communications, 2020, 11, 5694.	12.8	98

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37	Effect of Solvent Additive on Generation, Recombination, and Extraction in PTB7:PCBM Solar Cells: A Conclusive Experimental and Numerical Simulation Study. Journal of Physical Chemistry C, 2015, 119, 8310-8320.	3.1	96
38	Photostability of Fullerene and Non-Fullerene Polymer Solar Cells: The Role of the Acceptor. ACS Applied Materials & Interfaces, 2019, 11, 8310-8318.	8.0	91
39	Amphipathic Side Chain of a Conjugated Polymer Optimizes Dopant Location toward Efficient Nâ€Type Organic Thermoelectrics. Advanced Materials, 2021, 33, e2006694.	21.0	91
40	Voltage-Dependent Photoluminescence and How It Correlates with the Fill Factor and Open-Circuit Voltage in Perovskite Solar Cells. ACS Energy Letters, 2019, 4, 2887-2892.	17.4	86
41	Hybrid Polymer Solar Cells from Highly Reactive Diethylzinc: MDMOâ€"PPV versus P3HT. Chemistry of Materials, 2007, 19, 5856-5861.	6.7	84
42	Fullerene derivatives with increased dielectric constants. Chemical Communications, 2014, 50, 10645-10647.	4.1	84
43	Controlling the Morphology and Efficiency of Hybrid ZnO:Polythiophene Solar Cells Via Side Chain Functionalization. Advanced Energy Materials, 2011, 1, 90-96.	19.5	80
44	Device Operation of Conjugated Polymer/Zinc Oxide Bulk Heterojunction Solar Cells. Advanced Functional Materials, 2007, 17, 1297-1302.	14.9	77
45	Enhancing doping efficiency by improving host-dopant miscibility for fullerene-based n-type thermoelectrics. Journal of Materials Chemistry A, 2017, 5, 21234-21241.	10.3	73
46	Can ferroelectric polarization explain the high performance of hybrid halide perovskite solar cells?. Physical Chemistry Chemical Physics, 2016, 18, 331-338.	2.8	69
47	Quantifying Bimolecular Recombination in Organic Solar Cells in Steady State. Advanced Energy Materials, 2013, 3, 1130-1134.	19.5	65
48	High Gain Hybrid Grapheneâ€"Organic Semiconductor Phototransistors. ACS Applied Materials & Interfaces, 2015, 7, 11083-11088.	8.0	65
49	Modern plastic solar cells: materials, mechanisms and modeling. Materials Today, 2013, 16, 281-289.	14.2	64
50	Charge Carrier Extraction in Organic Solar Cells Governed by Steadyâ€State Mobilities. Advanced Energy Materials, 2017, 7, 1701138.	19.5	56
51	Efficient Perovskite Solar Cells over a Broad Temperature Window: The Role of the Charge Carrier Extraction. Advanced Energy Materials, 2017, 7, 1701305.	19.5	52
52	1,8-diiodooctane acts as a photo-acid in organic solar cells. Scientific Reports, 2019, 9, 4350.	3.3	50
53	Non-radiative recombination losses in polymer light-emitting diodes. Organic Electronics, 2012, 13, 969-974.	2.6	49
54	Influence of injected charge carriers on photocurrents in polymer solar cells. Physical Review B, 2012, 85, .	3.2	47

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55	Improved photostability in ternary blend organic solar cells: the role of [70]PCBM. Journal of Materials Chemistry C, 2019, 7, 5104-5111.	5.5	46
56	Side-chain effects on N-type organic thermoelectrics: A case study of fullerene derivatives. Nano Energy, 2018, 52, 183-191.	16.0	45
57	Charge transport in MDMO-PPV:PCNEPV all-polymer solar cells. Journal of Applied Physics, 2007, 101, 104512.	2.5	43
58	Relating polymer chemical structure to the stability of polymer:fullerene solar cells. Journal of Materials Chemistry C, 2017, 5, 6611-6619.	5.5	41
59	Doping Engineering Enables Highly Conductive and Thermally Stable n-Type Organic Thermoelectrics with High Power Factor. ACS Applied Energy Materials, 2019, 2, 6664-6671.	5.1	38
60	Compatibility of PTB7 and [70]PCBM as a Key Factor for the Stability of PTB7:[70]PCBM Solar Cells. Advanced Energy Materials, 2016, 6, 1502338.	19.5	35
61	Electrical Conductivity of Doped Organic Semiconductors Limited by Carrierâ€“Carrier Interactions. ACS Applied Materials & Interfaces, 2020, 12, 56222-56230.	8.0	32
62	Energy level modulation of ITIC derivatives: Effects on the photodegradation of conventional and inverted organic solar cells. Organic Electronics, 2019, 69, 255-262.	2.6	31
63	Controlling n-Type Molecular Doping <i>via</i> Regiochemistry and Polarity of Pendant Groups on Low Band Gap Donorâ€“Acceptor Copolymers. Macromolecules, 2021, 54, 3886-3896.	4.8	31
64	Rough Electrode Creates Excess Capacitance in Thin-Film Capacitors. ACS Applied Materials & Interfaces, 2017, 9, 27290-27297.	8.0	30
65	Understanding Dark Current-Voltage Characteristics in Metal-Halide Perovskite Single Crystals. Physical Review Applied, 2021, 15, .	3.8	30
66	Bilayerâ€“Ternary Polymer Solar Cells Fabricated Using Spontaneous Spreading on Water. Advanced Energy Materials, 2018, 8, 1802197.	19.5	26
67	A New Approach to Modelâ€Based Simulation of Disordered Polymer Blend Solar Cells. Advanced Functional Materials, 2012, 22, 1236-1244.	14.9	25
68	Charge transport and recombination in PDPP5T:[70]PCBM organic solar cells: The influence of morphology. Organic Electronics, 2014, 15, 3191-3202.	2.6	23
69	Identification of the dominant recombination process for perovskite solar cells based on machine learning. Cell Reports Physical Science, 2021, 2, 100346.	5.6	21
70	Deposition of LiF onto Films of Fullerene Derivatives Leads to Bulk Doping. ACS Applied Materials & Interfaces, 2016, 8, 22623-22628.	8.0	19
71	Dielectric Effects at Organic/Inorganic Interfaces in Nanostructured Devices. ACS Applied Materials & Interfaces, 2015, 7, 11881-11889.	8.0	15
72	The Effect of Electrostatic Interaction on nâ€Type Doping Efficiency of Fullerene Derivatives. Advanced Electronic Materials, 2019, 5, 1800959.	5.1	15

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73	Effects of Fluorination on Fused Ring Electron Acceptor for Active Layer Morphology, Exciton Dissociation, and Charge Recombination in Organic Solar Cells. ACS Applied Materials & Interfaces, 2020, 12, 56231-56239.	8.0	15
74	Cross-Conjugated n-Dopable Aromatic Polyketone. Macromolecules, 2015, 48, 7007-7014.	4.8	14
75	Conjugated Polyions Enable Organic Photovoltaics Processed from Green Solvents. ACS Applied Energy Materials, 2019, 2, 2197-2204.	5.1	13
76	Reliability of charge carrier recombination data determined with charge extraction methods. Journal of Applied Physics, 2019, 126, .	2.5	13
77	Reaching a Double-Digit Dielectric Constant with Fullerene Derivatives. Journal of Physical Chemistry C, 2020, 124, 8633-8638.	3.1	13
78	Understanding the Limitations of Charge Transporting Layers in Mixed Leadâ€"Tin Halide Perovskite Solar Cells. Advanced Energy and Sustainability Research, 2022, 3, .	5.8	13
79	The Effect of Large Compositional Inhomogeneities on the Performance of Organic Solar Cells: A Numerical Study. Advanced Functional Materials, 2015, 25, 2013-2023.	14.9	12
80	Impact of Electrodes on Recombination in Bulk Heterojunction Organic Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 12013-12020.	8.0	12
81	Molecular Doping Directed by a Neutral Radical. ACS Applied Materials & Interfaces, 2021, 13, 29858-29865.	8.0	12
82	Charge Recombination Suppressed by Destructive Quantum Interference in Heterojunction Materials. Journal of Physical Chemistry Letters, 2016, 7, 198-203.	4.6	10
83	Effects of the Reduction and/or Fluorination of the TTâ€Units in BDTâ€TT Polymers on the Photostability of Polymer:Fullerene Solar Cells. Solar Rrl, 2019, 3, 1800301.	5.8	9
84	A MULTISCALE APPROACH TO THE REPRESENTATION OF 3D IMAGES, WITH APPLICATION TO POLYMER SOLAR CELLS. Image Analysis and Stereology, 2011, 30, 19.	0.9	8
85	Backbone-driven hostâ€"dopant miscibility modulates molecular doping in NDI conjugated polymers. Materials Horizons, 2022, 9, 500-508.	12.2	8
86	Organic Photovoltaics. Advanced Energy Materials, 2018, 8, 1802706.	19.5	7
87	Engineering the Thermoelectrical Properties of PEDOT:PSS by Alkali Metal Ion Effect. Engineering, 2021, 7, 647-654.	6.7	7
88	Experimental and theoretical study of phase separation in ZnPc:C60 blends. Organic Electronics, 2015, 27, 183-191.	2.6	5
89	Effect of the layer thickness on the efficiency enhancement in bilayer polymer light-emitting diodes. Synthetic Metals, 2016, 215, 64-67.	3.9	5
90	Can Ferroelectricity Improve Organic Solar Cells?. Macromolecular Rapid Communications, 2020, 41, e2000124.	3.9	4

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91	Response to Comment on â€œCharge Carrier Extraction in Organic Solar Cells Governed by Steadyâ€State Mobilitiesâ€. Advanced Energy Materials, 2018, 8, 1803125.	19.5	3
92	Protonic acid doping of low band-gap conjugated polyions. Materials Chemistry Frontiers, 2020, 4, 3585-3593.	5.9	3
93	Performance enhancement of poly(3- hexylthiophene): methanofullerene bulk-heterojunction solar cells. , 2006, 6334, 27.		2
94	Carrierâ€“carrier Coulomb interactions reduce power factor in organic thermoelectrics. Applied Physics Letters, 2021, 119, 143301.	3.3	2
95	Extraction of photo-generated charge carriers from polymer-fullerene bulk heterojunction solar cells. , 2004, 5464, 239.		0
96	Modeling of poly(3-hexylthiophene): methanofullerene bulk-heterojunction solar cells. , 2006, , .		0
97	Charge carrier mobility in disordered organic blends. Proceedings of SPIE, 2010, , .	0.8	0