

Steffen Duhm

List of Publications by Year in descending order

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114
papers

7,431
citations

53789

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84
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116
all docs

116
docs citations

116
times ranked

8732
citing authors

#	ARTICLE	IF	CITATIONS
1	Orientation-dependent ionization energies and interface dipoles in ordered molecular assemblies. <i>Nature Materials</i> , 2008, 7, 326-332.	27.5	564
2	Charge-transfer crystallites as molecular electrical dopants. <i>Nature Communications</i> , 2015, 6, 8560.	12.8	317
3	On-Surface Synthesis of Rylene-Type Graphene Nanoribbons. <i>Journal of the American Chemical Society</i> , 2015, 137, 4022-4025.	13.7	278
4	Band-Aligned Polymeric Hole Transport Materials for Extremely Low Energy Loss $\hat{\pm}$ -CsPbI ₃ Perovskite Nanocrystal Solar Cells. <i>Joule</i> , 2018, 2, 2450-2463.	24.0	275
5	14.1% CsPbI ₃ Perovskite Quantum Dot Solar Cells via Cesium Cation Passivation. <i>Advanced Energy Materials</i> , 2019, 9, 1900721.	19.5	254
6	Optimized Hole Injection with Strong Electron Acceptors at Organic-Metal Interfaces. <i>Physical Review Letters</i> , 2005, 95, 237601.	7.8	248
7	Improved Performance and Stability of All-Inorganic Perovskite Light-Emitting Diodes by Antisolvent Vapor Treatment. <i>Advanced Functional Materials</i> , 2017, 27, 1700338.	14.9	221
8	PTCDA on Au(111), Ag(111) and Cu(111): Correlation of interface charge transfer to bonding distance. <i>Organic Electronics</i> , 2008, 9, 111-118.	2.6	220
9	Impact of Bidirectional Charge Transfer and Molecular Distortions on the Electronic Structure of a Metal-Organic Interface. <i>Physical Review Letters</i> , 2007, 99, 256801.	7.8	206
10	Design of Organic Semiconductors from Molecular Electrostatics. <i>Chemistry of Materials</i> , 2011, 23, 359-377.	6.7	193
11	Highest-Occupied-Molecular-Orbital Band Dispersion of Rubrene Single Crystals as Observed by Angle-Resolved Ultraviolet Photoelectron Spectroscopy. <i>Physical Review Letters</i> , 2010, 104, 156401.	7.8	189
12	Charged and metallic molecular monolayers through surface-induced aromatic stabilization. <i>Nature Chemistry</i> , 2013, 5, 187-194.	13.6	187
13	Intermolecular Hybridization Governs Molecular Electrical Doping. <i>Physical Review Letters</i> , 2012, 108, 035502.	7.8	178
14	Adsorption-Induced Intramolecular Dipole: Correlating Molecular Conformation and Interface Electronic Structure. <i>Journal of the American Chemical Society</i> , 2008, 130, 7300-7304.	13.7	152
15	Tuning the Ionization Energy of Organic Semiconductor Films: The Role of Intramolecular Polar Bonds. <i>Journal of the American Chemical Society</i> , 2008, 130, 12870-12871.	13.7	152
16	Strong Depletion in Hybrid Perovskite p-n Junctions Induced by Local Electronic Doping. <i>Advanced Materials</i> , 2018, 30, e1705792.	21.0	141
17	The Effect of Fluorination on Pentacene/Gold Interface Energetics and Charge Reorganization Energy. <i>Advanced Materials</i> , 2007, 19, 112-116.	21.0	139
18	Impact of White Light Illumination on the Electronic and Chemical Structures of Mixed Halide and Single Crystal Perovskites. <i>Advanced Optical Materials</i> , 2017, 5, 1700139.	7.3	136

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19	High-Performance Perovskite Light-Emitting Diode with Enhanced Operational Stability Using Lithium Halide Passivation. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 4099-4105.	13.8	130
20	Guanidinium-Assisted Surface Matrix Engineering for Highly Efficient Perovskite Quantum Dot Photovoltaics. <i>Advanced Materials</i> , 2020, 32, e2001906.	21.0	125
21	Energy Level Offsets at Lead Halide Perovskite/Organic Hybrid Interfaces and Their Impacts on Charge Separation. <i>Advanced Materials Interfaces</i> , 2015, 2, 1400528.	3.7	122
22	Surface-Controlled Mono/Disselective <i>ortho</i> C-H Bond Activation. <i>Journal of the American Chemical Society</i> , 2016, 138, 2809-2814.	13.7	120
23	Electric-Field-Assisted Charge Generation and Separation Process in Transition Metal Oxide-Based Interconnectors for Tandem Organic Light-Emitting Diodes. <i>Advanced Functional Materials</i> , 2012, 22, 600-608.	14.9	115
24	Epitaxial Growth of π -Stacked Perfluoropentacene on Graphene-Coated Quartz. <i>ACS Nano</i> , 2012, 6, 10874-10883.	14.6	108
25	Structural and electronic properties of pentacene-fullerene heterojunctions. <i>Journal of Applied Physics</i> , 2008, 104, .	2.5	97
26	Nanostructured Si/Organic Heterojunction Solar Cells with High Open-Circuit Voltage via Improving Junction Quality. <i>Advanced Functional Materials</i> , 2016, 26, 5035-5041.	14.9	86
27	Structural Order in Perfluoropentacene Thin Films and Heterostructures with Pentacene. <i>Langmuir</i> , 2008, 24, 7294-7298.	3.5	85
28	Interfacial Synthesis of Monodisperse CsPbBr ₃ Nanorods with Tunable Aspect Ratio and Clean Surface for Efficient Light-Emitting Diode Applications. <i>Chemistry of Materials</i> , 2019, 31, 1575-1583.	6.7	78
29	Constructing the Electronic Structure of CH ₃ NH ₃ PbI ₃ and CH ₃ NH ₃ PbBr ₃ Perovskite Thin Films from Single-Crystal Band Structure Measurements. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 601-609.	4.6	78
30	Tracking the formation of methylammonium lead triiodide perovskite. <i>Applied Physics Letters</i> , 2015, 107, .	3.3	73
31	Advanced Data Encryption using 2D Materials. <i>Advanced Materials</i> , 2021, 33, e2100185.	21.0	67
32	Influence of intramolecular polar bonds on interface energetics in perfluoro-pentacene on Ag(111). <i>Physical Review B</i> , 2010, 81, .	3.2	65
33	Charge Reorganization Energy and Small Polaron Binding Energy of Rubrene Thin Films by Ultraviolet Photoelectron Spectroscopy. <i>Advanced Materials</i> , 2012, 24, 901-905.	21.0	65
34	Intrinsic Surface Dipoles Control the Energy Levels of Conjugated Polymers. <i>Advanced Functional Materials</i> , 2009, 19, 3874-3879.	14.9	64
35	Crystallisation kinetics in thin films of dihexyl-terthiophene: the appearance of polymorphic phases. <i>RSC Advances</i> , 2012, 2, 4404.	3.6	64
36	A uranium carbide cluster stabilized inside a C80 fullerene cage. <i>Nature Communications</i> , 2018, 9, 2753.	12.8	63

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37	Controlling energy level offsets in organic/organic heterostructures using intramolecular polar bonds. <i>Applied Physics Letters</i> , 2009, 94, .	3.3	57
38	Investigation of MoO _x /Si strong inversion layer interfaces via dopant-free heterocontact. <i>Physica Status Solidi - Rapid Research Letters</i> , 2017, 11, 1700107.	2.4	56
39	Accessing Surface Brillouin Zone and Band Structure of Picene Single Crystals. <i>Physical Review Letters</i> , 2012, 108, 226401.	7.8	55
40	Tuning the hole injection barrier height at organic/metal interfaces with (sub-) monolayers of electron acceptor molecules. <i>Applied Physics Letters</i> , 2005, 87, 101905.	3.3	52
41	Surface charge transfer doping induced inversion layer for high-performance graphene/silicon heterojunction solar cells. <i>Journal of Materials Chemistry A</i> , 2017, 5, 285-291.	10.3	52
42	Exploring the bonding of large hydrocarbons on noble metals: Diindoperylene on Cu(111), Ag(111), and Au(111). <i>Physical Review B</i> , 2013, 87, .	3.2	49
43	Molecular chains and carpets of sexithiophenes on Au(111). <i>Physical Review B</i> , 2007, 76, .	3.2	48
44	Site-Specific Geometric and Electronic Relaxations at Organic-Metal Interfaces. <i>Physical Review Letters</i> , 2010, 105, 046103.	7.8	48
45	Orientational Ordering of Nonplanar Phthalocyanines on Cu(111): Strength and Orientation of the Electric Dipole Moment. <i>Physical Review Letters</i> , 2011, 106, 156102.	7.8	48
46	Perovskite-Inspired Lead-Free Ag ₂ BiI ₅ for Self-Powered NIR-Blind Visible Light Photodetection. <i>Nano-Micro Letters</i> , 2020, 12, 27.	27.0	46
47	Interdiffusion of molecular acceptors through organic layers to metal substrates mimics doping-related energy level shifts. <i>Applied Physics Letters</i> , 2009, 95, 093305.	3.3	45
48	Pentacene on Au(111), Ag(111) and Cu(111): From physisorption to chemisorption. <i>Journal of Physics Condensed Matter</i> , 2016, 28, 094005.	1.8	45
49	Structure Solution of the 6,13-Pentacenequinone Surface-Induced Polymorph by Combining X-ray Diffraction Reciprocal-Space Mapping and Theoretical Structure Modeling. <i>Crystal Growth and Design</i> , 2011, 11, 600-606.	3.0	44
50	The effect of water on colloidal quantum dot solar cells. <i>Nature Communications</i> , 2021, 12, 4381.	12.8	44
51	Alternative Type Two-Dimensional/Three-Dimensional Lead Halide Perovskite with Inorganic Sodium Ions as a Spacer for High-Performance Light-Emitting Diodes. <i>ACS Nano</i> , 2019, 13, 1645-1654.	14.6	43
52	Surface modification of ZnO electron transport layers with glycine for efficient inverted non-fullerene polymer solar cells. <i>Organic Electronics</i> , 2019, 70, 25-31.	2.6	41
53	Orientation-Dependent Work-Function Modification Using Substituted Pyrene-Based Acceptors. <i>Journal of Physical Chemistry C</i> , 2017, 121, 24657-24668.	3.1	39
54	Impact of Oxygen Vacancy on Energy-Level Alignment at MoO _x /Organic Interfaces. <i>Applied Physics Express</i> , 2013, 6, 095701.	2.4	36

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55	Weak Charge Transfer between an Acceptor Molecule and Metal Surfaces Enabling Organic/Metal Energy Level Tuning. <i>Journal of Physical Chemistry B</i> , 2006, 110, 21069-21072.	2.6	35
56	Cu-Doped nickel oxide prepared using a low-temperature combustion method as a hole-injection layer for high-performance OLEDs. <i>Journal of Materials Chemistry C</i> , 2017, 5, 11751-11757.	5.5	34
57	Suppressing defect states in CsPbBr ₃ perovskite via magnesium substitution for efficient all-inorganic light-emitting diodes. <i>Nanoscale Horizons</i> , 2019, 4, 924-932.	8.0	34
58	Impact of low 6,13-pentacenequinone concentration on pentacene thin film growth. <i>Applied Physics Letters</i> , 2007, 91, 051919.	3.3	33
59	Binding and electronic level alignment of π -conjugated systems on metals. <i>Reports on Progress in Physics</i> , 2020, 83, 066501.	20.1	32
60	An Organic Borate Salt with Superior p-Doping Capability for Organic Semiconductors. <i>Advanced Science</i> , 2020, 7, 2001322.	11.2	32
61	Phase-separation and mixing in thin films of co-deposited rod-like conjugated molecules. <i>Journal of Materials Chemistry</i> , 2010, 20, 4055.	6.7	31
62	Surface Charge Transfer Doping via Transition Metal Oxides for Efficient p-Type Doping of II-VI Nanostructures. <i>ACS Nano</i> , 2016, 10, 10283-10293.	14.6	31
63	Direct Observation of Conductive Polymer Induced Inversion Layer in Si and Correlation to Solar Cell Performance. <i>Advanced Functional Materials</i> , 2020, 30, 1903440.	14.9	29
64	Bilayer Formation vs Molecular Exchange in Organic Heterostructures: Strong Impact of Subtle Changes in Molecular Structure. <i>Journal of Physical Chemistry C</i> , 2018, 122, 9480-9490.	3.1	27
65	Pentacene on Ag(111): Correlation of Bonding Distance with Intermolecular Interaction and Order. <i>ACS Applied Materials & Interfaces</i> , 2013, 5, 9377-9381.	8.0	25
66	The Relationship between Structural and Electrical Characteristics in Perylenecarboxydiimide-Based Nanoarchitectures. <i>Advanced Functional Materials</i> , 2015, 25, 2501-2510.	14.9	25
67	Influence of alkyl chain substitution on sexithienyl-metal interface morphology and energetics. <i>Applied Physics Letters</i> , 2006, 88, 203109.	3.3	24
68	Spontaneous charge transfer at organic-organic homointerfaces to establish thermodynamic equilibrium. <i>Applied Physics Letters</i> , 2007, 90, 122113.	3.3	24
69	Bright inverted quantum-dot light-emitting diodes by all-solution processing. <i>Journal of Materials Chemistry C</i> , 2018, 6, 7487-7492.	5.5	24
70	Electrostatic Interactions Shape Molecular Organization and Electronic Structure of Organic Semiconductor Blends. <i>Chemistry of Materials</i> , 2020, 32, 1261-1271.	6.7	24
71	CH ₃ NH ₃ PbI ₃ Cl _x under Different Fabrication Strategies: Electronic Structures and Energy-Level Alignment with an Organic Hole Transport Material. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 7859-7865.	8.0	23
72	Molecular Structure-Dependent Charge Injection and Doping Efficiencies of Organic Semiconductors: Impact of Side Chain Substitution. <i>Advanced Materials Interfaces</i> , 2014, 1, 1300128.	3.7	22

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73	Sub-nanometer Control of the Interlayer Spacing in Thin Films of Intercalated Rodlike Conjugated Molecules. <i>Journal of Physical Chemistry B</i> , 2007, 111, 14097-14101.	2.6	21
74	Internal Structure of Nanoporous TiO ₂ /Polyion Thin Films Prepared by Layer-by-Layer Deposition. <i>Langmuir</i> , 2007, 23, 9860-9865.	3.5	20
75	Oxygen Vacancies Allow Tuning the Work Function of Vanadium Dioxide. <i>Advanced Materials Interfaces</i> , 2018, 5, 1801033.	3.7	20
76	Vacuum sublimed 1,6-dihexylsexithiophene thin films: Correlating electronic structure and molecular orientation. <i>Journal of Applied Physics</i> , 2008, 104, 033717.	2.5	19
77	Impact of alkyl side chains at self-assembly, electronic structure and charge arrangement in sexithiophene thin films. <i>Organic Electronics</i> , 2011, 12, 903-910.	2.6	18
78	Doped copper phthalocyanine via an aqueous solution process for high-performance organic light-emitting diodes. <i>Organic Electronics</i> , 2019, 68, 236-241.	2.6	18
79	Metal-organic interface functionalization via acceptor end groups: PTCDI on coinage metals. <i>Physical Review Materials</i> , 2017, 1, .	2.4	18
80	Transient Monolayer Structure of Rubrene on Graphite: Impact on Hole-Phonon Coupling. <i>Journal of Physical Chemistry C</i> , 2016, 120, 14568-14574.	3.1	16
81	Nitrogen substitution impacts organic-metal interface energetics. <i>Physical Review B</i> , 2016, 94, .	3.2	15
82	Electronic non-equilibrium conditions at C ₆₀ -pentacene heterostructures. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2009, 174, 40-44.	1.7	13
83	Stoichiometric and Oxygen-Deficient VO ₂ as Versatile Hole Injection Electrode for Organic Semiconductors. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 10552-10559.	8.0	13
84	Impact of Nitrogen Substitution and Molecular Orientation on the Energy-Level Alignment of Heteroacene Films. <i>Journal of Physical Chemistry C</i> , 2011, 115, 15502-15508.	3.1	12
85	HATCN-based Charge Recombination Layers as Effective Interconnectors for Tandem Organic Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 15604-15609.	8.0	12
86	Solvent-resistant ITO work function tuning by an acridine derivative enables high performance inverted polymer solar cells. <i>Organic Electronics</i> , 2016, 35, 6-11.	2.6	12
87	Energy-level alignment at strongly coupled organic-metal interfaces. <i>Journal of Physics Condensed Matter</i> , 2019, 31, 194002.	1.8	12
88	Seleno groups control the energy-level alignment between conjugated organic molecules and metals. <i>Journal of Chemical Physics</i> , 2014, 140, 014705.	3.0	11
89	Characteristics of Organic-Metal Interaction: A Perspective from Bonding Distance to Orbital Delocalization. <i>Journal of the Physical Society of Japan</i> , 2018, 87, 061008.	1.6	10
90	Resolving intramolecular-distortion changes induced by the partial fluorination of pentacene adsorbed on Cu(111). <i>Physical Review Materials</i> , 2018, 2, .	2.4	10

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91	Morphology, interfacial electronic structure, and optical properties of oligothiophenes grown on ZnSe(100) by molecular beam deposition. <i>Physical Review B</i> , 2006, 73, .	3.2	9
92	Surface CH_3/NH_3 to CH_3 Ratio Impacts the Work Function of Solution-Processed and Vacuum-Sublimed $\text{CH}_3/\text{NH}_3/\text{PbI}_3$ Thin Films. <i>Advanced Materials Interfaces</i> , 2019, 6, 1801827.	3.7	9
93	Substrate-Independent Energy-Level Pinning of an Organic Semiconductor Providing Versatile Hole-Injection Electrodes. <i>ACS Applied Electronic Materials</i> , 2020, 2, 3994-4001.	4.3	9
94	Unraveling the Role of Substrates on Interface Energetics and Morphology of PCDTBT:PC ₇₀ BM Bulk Heterojunction. <i>Advanced Materials Interfaces</i> , 2015, 2, 1500095.	3.7	8
95	Picene thin films on metal surfaces: Impact of molecular shape on interfacial coupling. <i>Physica Status Solidi - Rapid Research Letters</i> , 2017, 11, 1700012.	2.4	8
96	Ultraviolet photoelectron spectroscopy reveals energy-band dispersion for <i>i</i> -stacked 7,8,15,16-tetraazaterrylene thin films in a donor-acceptor bulk heterojunction. <i>Nanotechnology</i> , 2018, 29, 194002.	2.6	8
97	High-Performance Perovskite Light-Emitting Diode with Enhanced Operational Stability Using Lithium Halide Passivation. <i>Angewandte Chemie</i> , 2020, 132, 4128-4134.	2.0	8
98	Heteromolecular Bilayers on a Weakly Interacting Substrate: Physisorptive Bonding and Molecular Distortions of Copper-Hexadecafluorophthalocyanine. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 14542-14551.	8.0	8
99	Pentacene/perfluoropentacene bilayers on Au(111) and Cu(111): impact of organic-metal coupling strength on molecular structure formation. <i>Nanoscale Advances</i> , 2021, 3, 2598-2606.	4.6	8
100	Schottky contact formation by an insulator: Lithium fluoride on silicon. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	7
101	Revealing a Zinc Oxide/Perovskite Luminescence Quenching Mechanism Targeting Low-Roll-off Light-Emitting Diodes. <i>Journal of Physical Chemistry Letters</i> , 2022, 13, 3121-3129.	4.6	7
102	The morphology of organic nanocolumn arrays: Amorphous versus crystalline solids. <i>Journal of Materials Research</i> , 2009, 24, 1492-1497.	2.6	6
103	Formation of intra-island grain boundaries in pentacene monolayers. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 21102.	2.8	6
104	Vertical Bonding Distances Impact Organic-Metal Interface Energetics. <i>Springer Series in Materials Science</i> , 2015, , 89-107.	0.6	6
105	X-ray standing waves reveal lack of OH termination at hydroxylated ZnO(0001) surfaces. <i>Physical Review Materials</i> , 2020, 4, .	2.4	6
106	Impact of Substrate Hydrophobicity on Layer Composition and Work Function of PEDOT:PSS Thin Films. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, 2100434.	2.4	6
107	Dipolar Substitution Impacts Growth and Electronic Properties of Para-Substituted Phenyl Thin Films. <i>Advanced Materials Interfaces</i> , 2020, 7, 1901707.	3.7	5
108	Impact of room temperature on pentacene thin film growth and electronic structure. <i>Canadian Journal of Chemistry</i> , 2017, 95, 1130-1134.	1.1	4

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109	Carrier injection in organic electronics: Injection hotspot effect beyond barrier reduction effect. Applied Physics Letters, 2018, 113, 043302.	3.3	4
110	Impact of fluorination on interface energetics and growth of pentacene on Ag(111). Beilstein Journal of Nanotechnology, 2020, 11, 1361-1370.	2.8	4
111	Photoelectron spectroscopy reveals molecular diffusion through physisorbed template layers on Au(111). Electronic Structure, 2021, 3, 024002.	2.8	4
112	Modification of TiO ₂ /organic hole transport layer interface energy levels by a dipolar perylene derivative. Electronic Structure, 2019, 1, 015007.	2.8	3
113	Interface energetics in organic electronic devices. , 2021, , 143-164.		3
114	Enhanced carrier injection hotspot effect by direct and simple ITO surface engineering. Applied Physics Letters, 2021, 118, 223301.	3.3	2