Rainer F Mahrt

List of Publications by Year
in descending order

155 papers	9,320 citations	53751 45 h-index	38368 95 g-index
158 all docs	158 docs citations	158 times ranked	9130 citing authors

#	Article	IF	Citations
1	Efficient two layer leds on a polymer blend basis. Advanced Materials, 1995, 7, 551-554.	11.1	1,523
2	Bright triplet excitons in caesium lead halide perovskites. Nature, 2018, 553, 189-193.	13.7	716
3	Room-temperature Boseâ€“Einstein condensation of cavity excitonâ€“polaritons in a polymer. Nature Materials, 2014, 13, 247-252.	13.3	540
4	Superfluorescence from lead halide perovskite quantum dot superlattices. Nature, 2018, 563, 671-675.	13.7	416
5	Femtosecond energy relaxation in Ï€-conjugated polymers. Physical Review Letters, 1993, 70, 3820-3823.	2.9	410
6	Aggregate fluorescence in conjugated polymers. Chemical Physics Letters, 1995, 240, 373-378.	1.2	384
7	Ultrafast Field-Induced Dissociation of Excitons in Conjugated Polymers. Physical Review Letters, 1994, 73, 1440-1443.	2.9	310
8	Single Cesium Lead Halide Perovskite Nanocrystals at Low Temperature: Fast Single-Photon Emission, Reduced Blinking, and Exciton Fine Structure. ACS Nano, 2016, 10, 2485-2490.	7.3	299
9	Conjugated polymers: lasing and stimulated emission. Current Opinion in Solid State and Materials Science, 2001, 5, 143-154.	5.6	200
10	Conformational effects in poly(p-phenylene vinylene)s revealed by low-temperature site-selective fluorescence. Journal of Physics Condensed Matter, 1993, 5, 247-260.	0.7	189
11	A room-temperature organic polariton transistor. Nature Photonics, 2019, 13, 378-383.	15.6	176
12	Perovskite-type superlattices from lead halide perovskite nanocubes. Nature, 2021, 593, 535-542.	13.7	152
13	Probing the Wave Function Delocalization in CdSe/CdS Dot-in-Rod Nanocrystals by Time- and Temperature-Resolved Spectroscopy. ACS Nano, 2011, 5, 4031-4036.	7.3	148
14	Quaterrylenebis(dicarboximide)s: near infrared absorbing and emitting dyes. Journal of Materials Chemistry, 1998, 8, 2357-2369.	6.7	124
15	Time resolved luminescence study of recombination processes in electroluminescent polymers. Applied Physics Letters, 1993, 62, 2827-2829.	1.5	110
16	SU-8 for real three-dimensional subdiffraction-limit two-photon microfabrication. Applied Physics Letters, 2004, 84, 4095-4097.	1.5	103
17	Monte Carlo study of picosecond exciton relaxation and dissociation in poly(phenylenevinylene). Physical Review B, 1996, 54, 5536-5544.	1.1	99
18	Progress towards processible materials for light-emitting devices using poly(p-phenylphenylenevinylene). Advanced Materials, 1992, 4, 661-662.	11.1	94

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19	Dynamics of optical excitations in a ladder-type Ï€-conjugated polymer containing aggregate states. Physical Review B, 1996, 54, 1759-1765.	1.1	94
20	Dynamics of singlet excitations in conjugated polymers: Poly(phenylenevinylene) and poly(phenylphenylenevinylene). Physical Review B, 1994, 50, 10769-10779.	1.1	93
21	Microcavity effects in a spinâ€coated polymer twoâ€layer system. Applied Physics Letters, 1995, 66, 1301-1303.	1.5	91
22	A Surface-Emitting Circular Grating Polymer Laser. Advanced Materials, 2001, 13, 1161-1164.	11.1	82
23	Enhanced Dipole-Dipole Interaction in a Polymer Microcavity. Physical Review Letters, 1999, 82, 4118-4121.	2.9	80
24	Electroluminescence from polymer blends and molecularly doped polymers. Synthetic Metals, 1994, 64, 141-145.	2.1	79
25	Field-induced exciton breaking in conjugated polymers. Physical Review B, 1995, 52, 4932-4940.	1.1	79
26	Majority carrier injection from ITO anodes into organic light-emitting diodes based upon polymer blends. Synthetic Metals, 1995, 68, 263-268.	2.1	78
27	Onâ€Chip Integrated Quantumâ€Dotâ€“Siliconâ€Nitride Microdisk Lasers. Advanced Materials, 2017, 29, 1604866.	11.1	77
28	Single-photon nonlinearity at room temperature. Nature, 2021, 597, 493-497.	13.7	77
29	Energy Transfer in Hybrid Organic/Inorganic Nanocomposites. Nano Letters, 2009, 9, 453-456.	4.5	75
30	Monodisperse Long-Chain Sulfobetaine-Capped CsPbBr₃ Nanocrystals and Their Superfluorescent Assemblies. ACS Central Science, 2021, 7, 135-144.	5.3	75
31	Nearly Temperatureâ€Independent Threshold for Amplified Spontaneous Emission in Colloidal CdSe/CdS Quantum Dotâ€inâ€Rods. Advanced Materials, 2012, 24, OP231-5.	11.1	74
32	Femtosecond dynamics of stimulated emission and photoinduced absorption in a PPP-type ladder polymer. Chemical Physics Letters, 1995, 244, 171-176.	1.2	73
33	Band structure engineering via piezoelectric fields in strained anisotropic CdSe/CdS nanocrystals. Nature Communications, 2015, 6, 7905.	5.8	65
34	Two-Photon Pumped Lasing from a Two-Dimensional Photonic Bandgap Structure with Polymeric Gain Material. Advanced Materials, 2002, 14, 673-676.	11.1	62
35	Picosecond hopping relaxation in conjugated polymers. Chemical Physics Letters, 1993, 209, 243-246.	1.2	60
36	Band-Edge Exciton Fine Structure of Small, Nearly Spherical Colloidal CdSe/ZnS Quantum Dots. ACS Nano, 2011, 5, 8033-8039.	7.3	60

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37	Long Exciton Dephasing Time and Coherent Phonon Coupling in CsPbBr₂Cl Perovskite Nanocrystals. Nano Letters, 2018, 18, 7546-7551.	4.5	60
38	Electro-optical studies of a soluble conjugated polymer with particularly low intrachain disorder. Physical Review B, 1999, 60, 8650-8658.	1.1	57
39	Site-selective fluorescence studies on polysilylenes. Chemical Physics, 1991, 150, 81-91.	0.9	54
40	Disorder influenced optical properties of Î±-sexithiophene single crystals and thin evaporated films. Chemical Physics, 1998, 227, 49-56.	0.9	54
41	Lasing Supraparticles Self-Assembled from Nanocrystals. ACS Nano, 2018, 12, 12788-12794.	7.3	51
42	Exciton versus band description of the absorption, luminescence and electro-absorption of poly(phenylphenylenevinylene) and poly(dodecylthiophene). Synthetic Metals, 1992, 49, 341-352.	2.1	50
43	Electroluminescence from phenylenevinylene-based polymer blends. Advanced Materials for Optics and Electronics, 1993, 2, 197-204.	0.5	48
44	Controlling the Exciton Fine Structure Splitting in CdSe/CdS Dot-in-Rod Nanojunctions. ACS Nano, 2012, 6, 1979-1987.	7.3	48
45	Observation of strong excitonâ€“photon coupling in an organic microcavity. Chemical Physics Letters, 2001, 344, 352-356.	1.2	47
46	The optical gain mechanism in solid conjugated polymers. Applied Physics Letters, 1998, 72, 2933-2935.	1.5	46
47	Energy transfer in molecularly doped conjugated polymers. Synthetic Metals, 1996, 78, 289-293.	2.1	44
48	A blue light emitting polymer with phenylenevinylene segments in the side-chains. Advanced Materials, 1995, 7, 388-390.	11.1	43
49	Picosecond time resolved photoluminescence spectroscopy of a tetracene film on highly oriented pyrolytic graphite: Dynamical relaxation, trap emission, and superradiance. Journal of Chemical Physics, 2007, 127, 114705.	1.2	43
50	Laser emission from a solid conjugated polymer:â€ƒGain, tunability, and coherence. Physical Review B, 1998, 57, R4218-R4221.	1.1	41
51	Evidence for bandedge lasing in a two-dimensional photonic bandgap polymer laser. Applied Physics Letters, 2002, 80, 734-736.	1.5	41
52	Electric field-induced fluorescence quenching and transient fluorescence studies in poly(p-terphenylene vinylene) related polymers. Chemical Physics, 1998, 227, 167-178.	0.9	39
53	Vertical microcavities with high<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Q</mml:mi></mml:math>and strong lateral mode confinement. Physical Review B, 2013, 87, .	1.1	37
54	Light and heavy excitonic polarons in conjugated polymers. Synthetic Metals, 1991, 45, 107-117.	2.1	36

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55	Lasing in organic circular grating structures. Journal of Applied Physics, 2004, 96, 3043-3049.	1.1	34
56	Ultrafast all-optical modulator with femtojoule absorbed switching energy in silicon-on-insulator. Optics Express, 2010, 18, 22485.	1.7	34
57	Room-Temperature Exciton-Polariton Condensation in a Tunable Zero-Dimensional Microcavity. ACS Photonics, 2018, 5, 85-89.	3.2	33
58	Spontaneous and stimulated emission from a ladder-type conjugated polymer. Physical Review B, 1999, 59, 4112-4118.	1.1	32
59	Integrated all-optical switch in a cross-waveguide geometry. Applied Physics Letters, 2006, 88, 171104.	1.5	32
60	Excitation dynamics in conjugated polymers. Pure and Applied Chemistry, 1995, 67, 377-385.	0.9	31
61	The Origin of Photoluminescence from Î±-Sexithienyl Thin Films. Journal of Physical Chemistry B, 1998, 102, 7563-7567.	1.2	31
62	The dynamics of gain-narrowing in a ladder-type Ï€-conjugated polymer. Chemical Physics Letters, 1999, 312, 376-384.	1.2	31
63	Time-resolved studies of two-photon absorption processes in poly(p-phenylenevinylene)s. Chemical Physics Letters, 1993, 203, 28-32.	1.2	29
64	Dynamics of excitation transfer in dye doped Î-conjugated polymers. Chemical Physics Letters, 1995, 245, 534-538.	1.2	29
65	Resonant energy transfer within a colloidal nanocrystal polymer host system. Applied Physics Letters, 2007, 90, 071108.	1.5	28
66	Plasmonic Nanohybrid with Ultrasmall Ag Nanoparticles and Fluorescent Dyes. ACS Nano, 2011, 5, 3536-3541.	7.3	28
67	Zero-Dimensional Organic Excitonâ€“Polaritons in Tunable Coupled Gaussian Defect Microcavities at Room Temperature. ACS Photonics, 2016, 3, 1542-1545.	3.2	28
68	Polarization-sensitive photoconductivity in aligned polyfluorene layers. Applied Physics Letters, 2002, 80, 4699-4701.	1.5	27
69	Organic mixed-order photonic crystal lasers with ultrasmall footprint. Applied Physics Letters, 2007, 91, .	1.5	25
70	Dye Molecules Encapsulated in a Micelle Structure: Nanoâ€Aggregates with Enhanced Optical Properties. Advanced Materials, 2010, 22, 3681-3684.	11.1	25
71	Shape-Directed Co-Assembly of Lead Halide Perovskite Nanocubes with Dielectric Nanodisks into Binary Nanocrystal Superlattices. ACS Nano, 2021, 15, 16488-16500.	7.3	25
72	Two-photon fluorescence and femtosecond two-photon absorption studies of MeLPPP, a ladder-type poly(phenylene) with low intra-chain disorder. Chemical Physics Letters, 1999, 313, 755-762.	1.2	24

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73	Dependence of Rabi-splitting on the spatial position of the optically active layer in organic microcavities in the strong coupling regime. Chemical Physics, 2002, 285, 113-120.	0.9	23
74	Exciton Dynamics within the Band-Edge Manifold States: The Onset of an Acoustic Phonon Bottleneck. Nano Letters, 2012, 12, 5224-5229.	4.5	23
75	Relaxation dynamics of excitons in thin quaterthiophene films on different substrates. Chemical Physics Letters, 1999, 314, 9-15.	1.2	22
76	Nonequilibrium polariton dynamics in organic microcavities. Physical Review B, 2002, 66, .	1.1	22
77	Unraveling the Origin of the Long Fluorescence Decay Component of Cesium Lead Halide Perovskite Nanocrystals. ACS Nano, 2020, 14, 14939-14946.	7.3	22
78	Tunable excitonâ€“polariton condensation in a two-dimensional Lieb lattice at room temperature. Communications Physics, 2021, 4, .	2.0	22
79	Ultracompact Silicon/Polymer Laser with an Absorption-Insensitive Nanophotonic Resonator. Nano Letters, 2010, 10, 3675-3678.	4.5	20
80	Control of the Emission Properties of Conjugated Polymers: Trapping and Microcavity Effects. Molecular Crystals and Liquid Crystals, 1994, 256, 335-342.	0.3	19
81	Enhanced feedback in organic photonic-crystal lasers. Applied Physics Letters, 2005, 87, 151121.	1.5	19
82	Spectroscopy of Conjugated Polymers. Zeitschrift Fur Physikalische Chemie, 1994, 184, 233-252.	1.4	18
83	Structural Diversity in Multicomponent Nanocrystal Superlattices Comprising Lead Halide Perovskite Nanocubes. ACS Nano, 2022, 16, 7210-7232.	7.3	18
84	Observation of interface excitons and energy transfer processes in an oligo-thiophene multi-layer structure. Chemical Physics Letters, 1995, 242, 207-211.	1.2	17
85	Control of the interaction strength of photonic molecules by nanometer precise 3D fabrication. Scientific Reports, 2017, 7, 16502.	1.6	17
86	Circular Grating Resonators as Small Mode-Volume Microcavities for Switching. Optics Express, 2009, 17, 5953.	1.7	16
87	Enhanced Roomâ€Temperature Photoluminescence Quantum Yield in Morphology Controlled Jâ€Aggregates. Advanced Science, 2021, 8, 1903080.	5.6	16
88	Blue-green laser emission from a solid conjugated polymer. Solid State Communications, 1997, 104, 759-762.	0.9	15
89	Polarized Photoluminescence and Spectral Narrowing in an Oriented Polyfluorene Thin Film. ChemPhysChem, 2000, 1, 142-146.	1.0	15
90	Integrated vertical microcavity using a nano-scale deformation for strong lateral confinement. Applied Physics Letters, 2013, 103, .	1.5	15

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91	Exciton Dynamics and Effects of Structural Order in Morphologyâ€Controlled Jâ€Aggregate Assemblies. Advanced Functional Materials, 2019, 29, 1806997.	7.8	15
92	Hampered excimer formation in a perylene derivative with bulky functional groups. Chemical Physics Letters, 2001, 341, 213-218.	1.2	14
93	Analytical calculation of the Q factor for circular-grating microcavities. Journal of the Optical Society of America B: Optical Physics, 2007, 24, 906.	0.9	14
94	Design and optical characterization of photonic crystal lasers with organic gain material. Journal of Optics (United Kingdom), 2010, 12, 065003.	1.0	14
95	Enhancement of the mode coupling in photonic-crystal-based organic lasers. Journal of Optics, 2005, 7, S230-S234.	1.5	12
96	Impact of the Bandâ€Edge Fine Structure on the Energy Transfer between Colloidal Quantum Dots. Advanced Optical Materials, 2014, 2, 126-130.	3.6	12
97	Conjugated polymer lasers: emission characteristics and gain mechanism. Physical Chemistry Chemical Physics, 1999, 1, 1795-1800.	1.3	11
98	Observation of strong excitonâ€“photon coupling in an organic microcavity in transmission and photoluminescence. Journal of Luminescence, 2001, 94-95, 821-826.	1.5	11
99	Control of Fano line shapes by means of photonic crystal structures in a dye-doped polymer. Applied Physics Letters, 2007, 90, 201105.	1.5	11
100	Low-loss optical waveguides made with a high-loss material. Light: Science and Applications, 2021, 10, 15.	7.7	11
101	Spectroscopic assessment of the role of disorder and polaron formation on electronic transport in molecularly doped polymers. Chemical Physics Letters, 1992, 192, 576-580.	1.2	8
102	Fabrication and characterization of Ta2O5 photonic feedback structures. Microelectronic Engineering, 2008, 85, 1425-1428.	1.1	8
103	Optical and electroemission properties of thin films of supermolecular anthracene-based rotaxanes. Applied Surface Science, 2001, 175-176, 369-373.	3.1	7
104	Ultra-high quality-factor resonators with perfect azimuthal modal-symmetry. Optics Express, 2009, 17, 20998.	1.7	7
105	Microresonator effects in optically and electrically pumped thin-film light-emitting diodes. Synthetic Metals, 1996, 83, 257-260.	2.1	6
106	Excitation dynamics in Î±-sexithiophene single crystals and UHV-grown films. Journal of Luminescence, 1998, 76-77, 416-419.	1.5	6
107	A Tunable Blue-Green Laser from a Solid Conjugated Polymer. Physica Status Solidi (B): Basic Research, 1998, 206, 437-441.	0.7	6
108	Site-selection spectroscopy of poly(di-n-butylgermylene) (PDBG). Chemical Physics Letters, 1991, 177, 389-393.	1.2	5

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109	Ultrafast Fluorescence Spectroscopy of PPV. Molecular Crystals and Liquid Crystals, 1994, 256, 9-16.	0.3	5
110	<title>Excitation dynamics in conjugated polymers</title>. , 1995, , .		4
111	Field-induced dissociation of optical excitations in conjugated polymers. Journal of Non-Crystalline Solids, 1996, 198-200, 661-664.	1.5	4
112	Femtosecond Differential Transmission Spectroscopy of Î±-Sexithienyl Single Crystals at Low Temperature. Journal of Physical Chemistry B, 2000, 104, 12210-12214.	1.2	4
113	Femtosecond Differential Transmission Spectroscopy of Î±-Sexithienyl Thin Film at Low Temperature. Journal of Physical Chemistry B, 2000, 104, 6536-6540.	1.2	4
114	Photophysical properties of thin films and solid phase of switchable supermolecular anthracene-based rotaxanes. Synthetic Metals, 2001, 122, 63-65.	2.1	4
115	CONTROL OF THE ENERGY TRANSFER WITH THE OPTICAL MICROCAVITY. International Journal of Modern Physics B, 2001, 15, 3704-3708.	1.0	4
116	Integrated Silicon Nitride Microdisk Lasers Based on Quantum Dots. , 2016, , .		4
117	Vibronic hole burning in acene-doped MTHF glasses. Chemical Physics Letters, 1990, 165, 125-130.	1.2	3
118	Time resolved luminescence spectroscopy of conjugated polymers. Journal of Luminescence, 1994, 60-61, 479-481.	1.5	3
119	Femtosecond differential transmission spectroscopy of Î±-sexithienyl thin film. Journal of Luminescence, 2000, 87-89, 736-738.	1.5	3
120	Charge-induced dephasing in thin polythiophene films. Physical Review B, 2001, 64, .	1.1	3
121	Lasing in interferometrically structured organic materials. Applied Physics Letters, 2005, 87, 241124.	1.5	3
122	Enhanced feedback and experimental band mapping of organic photonic-crystal lasers. Journal of Optics, 2006, 8, S273-S277.	1.5	3
123	A pump-and-probe method for the characterization of nonlinear material parameters within Fabry-PÃ©rot microcavities. Journal of Applied Physics, 2006, 100, 043112.	1.1	3
124	Polarization-Independent Photodetectors With Enhanced Responsivity in a Standard Silicon-on-Insulator Complementary Metalâ€“Oxideâ€“Semiconductor Process. Journal of Lightwave Technology, 2009, 27, 4892-4896.	2.7	3
125	Organic nonlinear Kerr materials in Fabry-Perot cavities for all optical switching. , 2006, 6128, 202.		2
126	Exciton-polariton Bose-Einstein condensation with a polymer at room temperature. , 2015, , .		2

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127	All-Optical Exciton-Polariton Transistor at Room Temperature. , 2019, , .		2
128	Optical characterization of tris-(stilbene)amine and application in microcavities. Synthetic Metals, 1996, 76, 117-119.	2.1	1
129	Organic heteromultilayers: electronic structure of sexithienyl/ thin films grown in ultra-high vacuum. Journal of Optics, 1998, 7, 151-157.	0.5	1
130	Femtosecond Transient Absorption Spectroscopy in Î±-sexithienyl thin films. Synthetic Metals, 1999, 101, 555-556.	2.1	1
131	In-Plane Coupling into Circular-Grating Resonators for All-Optical Switching. , 2006, , .		1
132	Circular Grating Resonators as Micro-Cavities for Optical Modulators. , 2007, , .		1
133	Ultra-small footprint photonic crystal lasers with organic gain material. , 2008, , .		1
134	Energy transfer in hybrid organic/inorganic nanocomposites. , 2009, , .		1
135	Tunable laser emission from a solid conjugated polymer. , 0, , .		0
136	<title>Gain mechanisms in conjugated polymer lasers</title>. , 1998, , .		0
137	The effect of intermolecular interaction on the electronic properties of quaterylene. Synthetic Metals, 1999, 102, 1589-1590.	2.1	0
138	Observation of Phonon Resonances in the Optical Nonlinearity in an ?-Sexithienyl Thin Film. Physica Status Solidi (B): Basic Research, 2000, 221, 561-565.	0.7	0
139	Time-resolved stimulated emission in an Î±-sexithienyl thin film. Synthetic Metals, 2001, 116, 49-51.	2.1	0
140	<title>Circular dielectric gratings acting as resonators for solid state polymer lasers</title>. , 2001, , .		0
141	Solid-state optical properties of the methyl-exopyridineâ€“anthracene rotaxane. Chemical Physics, 2001, 269, 381-388.	0.9	0
142	One- and two-photon lasing in an organic 2-D photonic band gap structure. , 0, , .		0
143	Lasing in a 2D photonic bandgap structure. , 2004, , .		0
144	Photonic engineering of nonlinear-optical properties of hybrid materials for efficient ultrafast optical switching (PHOENIX). , 2004, 5464, 39.		0

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145	Feedback enhancement in lasers with organic gain material. , 2005, , .		0
146	Circular grating resonators as candidates for ultra-small photonic devices. Proceedings of SPIE, 2008, , .	0.8	0
147	Circular grating resonators as nano-photonic modulators. , 2008, , .		0
148	Silicon photonic microcavities for optical switching. , 2009, , .		0
149	Lasing from defect states in mixed-order organic laser structures. Proceedings of SPIE, 2010, , .	0.8	0
150	Fantastic plastic makes the quantum leap. Europhysics News, 2014, 45, 23-26.	0.1	0
151	Quantum fluids in solid materials. Materials Today, 2014, 17, 258-259.	8.3	0
152	Creating a quantum fluid in a polymer. SPIE Newsroom, 0, , .	0.1	0
153	Superfluorescence from Lead Halide Perovskite Quantum Dot Superlattices. , 0, , .		0
154	Tunable Nanoscale defect Cavities for Exciton-Polariton Condensates at Room Temperature. , 0, , .		0
155	Bright Triplet Emission from Lead Halide Perovskite Nanocrystals. , 0, , .		0