

Delwin L Elder

List of Publications by Year in descending order

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126
papers

4,364
citations

94433

37
h-index

123424

61
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128
all docs

128
docs citations

128
times ranked

2613
citing authors

#	ARTICLE	IF	CITATIONS
1	All-plasmonic Mach-Zehnder modulator enabling optical high-speed communication at the microscale. <i>Nature Photonics</i> , 2015, 9, 525-528.	31.4	466
2	Low-loss plasmon-assisted electro-optic modulator. <i>Nature</i> , 2018, 556, 483-486.	27.8	312
3	High-speed plasmonic modulator in a single metal layer. <i>Science</i> , 2017, 358, 630-632.	12.6	236
4	Femtojoule electro-optic modulation using a silicon-organic hybrid device. <i>Light: Science and Applications</i> , 2015, 4, e255-e255.	16.6	187
5	500 GHz plasmonic Mach-Zehnder modulator enabling sub-THz microwave photonics. <i>APL Photonics</i> , 2019, 4, .	5.7	176
6	Ultra-high electro-optic activity demonstrated in a silicon-organic hybrid modulator. <i>Optica</i> , 2018, 5, 739.	9.3	131
7	High-Speed, Low Drive-Voltage Silicon-Organic Hybrid Modulator Based on a Binary-Chromophore Electro-Optic Material. <i>Journal of Lightwave Technology</i> , 2014, 32, 2726-2734.	4.6	130
8	Plasmonic modulator with >170 GHz bandwidth demonstrated at 100 GBd NRZ. <i>Optics Express</i> , 2017, 25, 1762.	3.4	125
9	Silicon-Organic and Plasmonic-Organic Hybrid Photonics. <i>ACS Photonics</i> , 2017, 4, 1576-1590.	6.6	123
10	Silicon-Organic Hybrid (SOH) and Plasmonic-Organic Hybrid (POH) Integration. <i>Journal of Lightwave Technology</i> , 2016, 34, 256-268.	4.6	119
11	Nonlinearities of organic electro-optic materials in nanoscale slots and implications for the optimum modulator design. <i>Optics Express</i> , 2017, 25, 2627.	3.4	114
12	Plasmonic IQ modulators with attojoule per bit electrical energy consumption. <i>Nature Communications</i> , 2019, 10, 1694.	12.8	112
13	Ultra-high Electro-Optic Coefficients, High Index of Refraction, and Long-Term Stability from Diels-Alder Cross-Linkable Binary Molecular Glasses. <i>Chemistry of Materials</i> , 2020, 32, 1408-1421.	6.7	98
14	A monolithic bipolar CMOS electronic-plasmonic high-speed transmitter. <i>Nature Electronics</i> , 2020, 3, 338-345.	26.0	89
15	Matrix-Assisted Poling of Monolithic Bridge-Disubstituted Organic NLO Chromophores. <i>Chemistry of Materials</i> , 2014, 26, 872-874.	6.7	86
16	Direct Conversion of Free Space Millimeter Waves to Optical Domain by Plasmonic Modulator Antenna. <i>Nano Letters</i> , 2015, 15, 8342-8346.	9.1	85
17	Compact and ultra-efficient broadband plasmonic terahertz field detector. <i>Nature Communications</i> , 2019, 10, 5550.	12.8	77
18	Plasmonic Organic Hybrid Modulators-Scaling Highest Speed Photonics to the Microscale. <i>Proceedings of the IEEE</i> , 2016, 104, 2362-2379.	21.3	76

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19	Effect of Rigid Bridge-Protection Units, Quadrupolar Interactions, and Blending in Organic Electro-Optic Chromophores. <i>Chemistry of Materials</i> , 2017, 29, 6457-6471.	6.7	76
20	108 Gbit/s Plasmonic Mach-Zehnder Modulator with > 70-GHz Electrical Bandwidth. <i>Journal of Lightwave Technology</i> , 2016, 34, 393-400.	4.6	71
21	Microwave plasmonic mixer in a transparent fibre-wireless link. <i>Nature Photonics</i> , 2018, 12, 749-753.	31.4	67
22	Plasmonic-organic hybrid (POH) modulators for OOK and BPSK signaling at 40 Gbit/s. <i>Optics Express</i> , 2015, 23, 9938.	3.4	65
23	Structure-function relationship exploration for enhanced thermal stability and electro-optic activity in monolithic organic NLO chromophores. <i>Journal of Materials Chemistry C</i> , 2016, 4, 3119-3124.	5.5	65
24	Low-power silicon-organic hybrid (SOH) modulators for advanced modulation formats. <i>Optics Express</i> , 2014, 22, 29927.	3.4	64
25	Gigahertz free-space electro-optic modulators based on Mie resonances. <i>Nature Communications</i> , 2022, 13, .	12.8	63
26	Electro-optic spatial light modulator from an engineered organic layer. <i>Nature Communications</i> , 2021, 12, 5928.	12.8	58
27	Benzocyclobutene barrier layer for suppressing conductance in nonlinear optical devices during electric field poling. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	56
28	Harnessing nonlinearities near material absorption resonances for reducing losses in plasmonic modulators. <i>Optical Materials Express</i> , 2017, 7, 2168.	3.0	51
29	40 GBd 16QAM Signaling at 160 Gb/s in a Silicon-Organic Hybrid Modulator. <i>Journal of Lightwave Technology</i> , 2015, 33, 1210-1216.	4.6	50
30	High speed plasmonic modulator array enabling dense optical interconnect solutions. <i>Optics Express</i> , 2015, 23, 29746.	3.4	49
31	Electro-Optic Activity in Excess of 1000 pm V ⁻¹ Achieved via Theory-Guided Organic Chromophore Design. <i>Advanced Materials</i> , 2021, 33, e2104174.	21.0	49
32	Silicon-organic hybrid (SOH) Mach-Zehnder modulators for 100 GBd PAM4 signaling with sub-1-dB phase-shifter loss. <i>Optics Express</i> , 2020, 28, 24693.	3.4	47
33	Ultra-High-Speed 2:1 Digital Selector and Plasmonic Modulator IM/DD Transmitter Operating at 222-GBaud for Intra-Datacenter Applications. <i>Journal of Lightwave Technology</i> , 2020, 38, 2734-2739.	4.6	45
34	120 GBd plasmonic Mach-Zehnder modulator with a novel differential electrode design operated at a peak-to-peak drive voltage of 178 mV. <i>Optics Express</i> , 2019, 27, 16823.	3.4	44
35	Optimization of Plasmonic-Organic Hybrid Electro-Optics. <i>Journal of Lightwave Technology</i> , 2018, 36, 5036-5047.	4.6	41
36	Hybrid electro-optic modulator combining silicon photonic slot waveguides with high-k radio-frequency slotlines. <i>Optica</i> , 2021, 8, 511.	9.3	41

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37	Electro-optic interface for ultrasensitive intracavity electric field measurements at microwave and terahertz frequencies. <i>Optica</i> , 2020, 7, 498.	9.3	39
38	Integrated optical frequency shifter in silicon-organic hybrid (SOH) technology. <i>Optics Express</i> , 2016, 24, 11694.	3.4	35
39	Three-Dimensional Phase Modulator at Telecom Wavelength Acting as a Terahertz Detector with an Electro-Optic Bandwidth of 1.25 Terahertz. <i>ACS Photonics</i> , 2018, 5, 1398-1403.	6.6	34
40	Molecular Engineering of Structurally Diverse Dendrimers with Large Electro-Optic Activities. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 21058-21068.	8.0	34
41	Design and synthesis of chromophores with enhanced electro-optic activities in both bulk and plasmonic-organic hybrid devices. <i>Materials Horizons</i> , 2022, 9, 261-270.	12.2	34
42	Plasmonic phased array feeder enabling ultra-fast beam steering at millimeter waves. <i>Optics Express</i> , 2016, 24, 25608.	3.4	32
43	Bis(4-dialkylaminophenyl)heteroaryl amino donor chromophores exhibiting exceptional hyperpolarizabilities. <i>Journal of Materials Chemistry C</i> , 2021, 9, 2721-2728.	5.5	28
44	Ultra-Compact Terabit Plasmonic Modulator Array. <i>Journal of Lightwave Technology</i> , 2019, 37, 1484-1491.	4.6	26
45	Organic Semiconductors at the University of Washington: Advancements in Materials Design and Synthesis and toward Industrial Scale Production. <i>Advanced Materials</i> , 2021, 33, e1904239.	21.0	25
46	Transparent Optical-THz-Optical Link at 240/192 Gbit/s Over 5/115 m Enabled by Plasmonics. <i>Journal of Lightwave Technology</i> , 2022, 40, 1690-1697.	4.6	24
47	Optical Interconnect Solution With Plasmonic Modulator and Ge Photodetector Array. <i>IEEE Photonics Technology Letters</i> , 2017, 29, 1760-1763.	2.5	19
48	Broadband Metallic Fiber-to-Chip Couplers and a Low-Complexity Integrated Plasmonic Platform. <i>Nano Letters</i> , 2021, 21, 4539-4545.	9.1	18
49	Organic Electro-Optics and Optical Rectification: From Mesoscale to Nanoscale Hybrid Devices and Chip-Scale Integration of Electronics and Photonics. <i>Industrial & Engineering Chemistry Research</i> , 2022, 61, 1207-1231.	3.7	17
50	Reduced Equalization Needs of 100 GHz Bandwidth Plasmonic Modulators. <i>Journal of Lightwave Technology</i> , 2019, 37, 2050-2057.	4.6	14
51	100 GBd IM/DD transmission over 14 km SMF in the C-band enabled by a plasmonic SSB MZM. <i>Optics Express</i> , 2020, 28, 8601.	3.4	13
52	Plasmonics' high-speed photonics for co-integration with electronics. <i>Japanese Journal of Applied Physics</i> , 2021, 60, SB0806.	1.5	12
53	Driver-Less Sub 1 Vpp Operation of a Plasmonic-Organic Hybrid Modulator at 100 GBd NRZ. , 2018, , .		12
54	Transparent Optical-THz-Optical Link Transmission over 5/115 m at 240/190 Gbit/s Enabled by Plasmonics. , 2021, , .		12

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55	Power dependence of NF3 plasma stability for in situ chamber cleaning. Journal of Applied Physics, 2004, 95, 4446-4451.	2.5	10
56	High-speed plasmonic Mach-Zehnder modulator in a waveguide. , 2014, , .		10
57	All-Plasmonic IQ Modulator With a 36 μ m Fiber-to-Fiber Pitch. Journal of Lightwave Technology, 2019, 37, 1492-1497.	4.6	10
58	Record-High In-Device Electro-Optic Coefficient of 359 pm/V in a Silicon-Organic Hybrid (SOH) Modulator. , 2017, , .		10
59	SOH Mach-Zehnder Modulators for 100 GBd PAM4 Signaling With Sub-1 dB Phase-Shifter Loss. , 2020, , .		10
60	High-Speed Silicon-Organic Hybrid (SOH) Modulators with 230 pm/V Electro-Optic Coefficient Using Advanced Materials. , 2014, , .		7
61	Ultra-compact plasmonic IQ-modulator. , 2015, , .		7
62	Plasmonic devices for communications. , 2015, , .		7
63	100 GBd Plasmonic IQ Modulator. , 2018, , .		7
64	300 GHz Plasmonic Mixer. , 2019, , .		6
65	New paradigms in materials and devices for hybrid electro-optics and optical rectification. , 2021, , .		6
66	Optical Interconnect with Densely Integrated Plasmonic Modulator and Germanium Photodetector Arrays. , 2016, , .		6
67	Integrated Silicon-Organic Hybrid (SOH) Frequency Shifter. , 2014, , .		5
68	Silicon-Organic Hybrid (SOH) and Plasmonic-Organic Hybrid (POH) Integration. , 2015, , .		5
69	Antenna Coupled Plasmonic Modulator. , 2015, , .		5
70	Poling-induced birefringence in OEO materials under nanoscale confinement. , 2018, , .		5
71	Ultra-short silicon-organic hybrid (SOH) modulator for bidirectional polarization-independent operation. , 2014, , .		4
72	Next-generation materials for hybrid electro-optic systems (Conference Presentation). , 2019, , .		4

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73	Direct RF-to-Optical Detection by Plasmonic modulator integrated into a four-leaf-clover antenna. , 2016, , .		4
74	High-speed and low-power silicon-organic hybrid modulators for advanced modulation formats. Proceedings of SPIE, 2015, , .	0.8	3
75	Plasmonic Mach-Zehnder Modulator with >70 GHz Electrical Bandwidth Demonstrating 90 Gbit/s 4-ASK. , 2015, , .		3
76	Alternative bridging architectures in organic nonlinear optical materials: comparison of ĩ€- and ĩ‡-type structures. Journal of the Optical Society of America B: Optical Physics, 2016, 33, E160.	2.1	3
77	Ultra-Compact 0.8 Tbit/s Plasmonic Modulator Array. , 2018, , .		3
78	Derivatives of DANPY (Dialkylaminonaphthylpyridinium), a DNA-Binding Fluorophore: Practical Synthesis of Tricyclic 2-Amino-6-bromonaphthalenes by Bucherer Reaction. ACS Omega, 2020, 5, 537-546.	3.5	3
79	Advances in high-performance hybrid electro-optics. , 2020, , .		3
80	Broadband Plasmonic Modulator Enabling Single Carrier Operation Beyond 100 Gbit/s. , 2017, , .		3
81	Plasmonics for Communications. , 2018, , .		3
82	Optimizing Plasmonic Modulators for In-Device Nonlinearities of up to 275 pm/V. , 2016, , .		3
83	Microwave plasmonics: A novel platform for RF photonics. , 2016, , .		3
84	Organic electro-optic materials combining extraordinary nonlinearity with exceptional stability to enable commercial applications. , 2022, , .		3
85	Novel cationic dye and crosslinkable surfactant for DNA biophotonics. Proceedings of SPIE, 2012, , .	0.8	2
86	40 GBd 16QAM modulation at 160 Gbit/s in a silicon-organic hybrid (SOH) modulator. , 2014, , .		2
87	Femtojoule modulation and frequency comb generation in silicon-organic hybrid (SOH) devices. , 2014, , .		2
88	Dense Plasmonic Mach-Zehnder Modulator Array for High-Speed Optical Interconnects. , 2015, , .		2
89	DANPY (dimethylaminonaphthylpyridinium): an economical and biocompatible fluorophore. Organic and Biomolecular Chemistry, 2019, 17, 3765-3780.	2.8	2
90	Processing of organic electro-optic materials for commercial applications. , 2020, , .		2

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91	Dielectric Layers in Plasmonic-Organic Hybrid Modulators. , 2018, , .		2
92	Enhanced lifetime of polymer light-emitting diodes using poly(thieno[3,4-b]thiophene)-based conductive polymers. , 2006, , .		1
93	SFG characterization of a cationic ONLO dye in biological thin films. Proceedings of SPIE, 2013, , .	0.8	1
94	16QAM Silicon-Organic Hybrid (SOH) Modulator Operating with 0.6 Vpp and 19 fJ/bit at 112 Gbit/s. , 2014, , .		1
95	From silicon-organic hybrid to plasmonic modulation. , 2014, , .		1
96	Wired and wireless high-speed communications enabled by plasmonics. , 2016, , .		1
97	Nonlinear Distortions in Plasmonic Mach-Zehnder Modulators. , 2018, , .		1
98	Bypassing Loss in Plasmonic Modulators. , 2018, , .		1
99	Electrically tunable metasurfaces by a single electro-optic layer. , 2021, , .		1
100	Mie-driven free-space electro-optic transducers. , 2021, , .		1
101	Birefringence, dimensionality, and surface influences on organic hybrid electro-optic performance. , 2021, , .		1
102	High-Speed Plasmonic Modulator for Simultaneous C- and O-Band Modulation with Simplified Fabrication. , 2020, , .		1
103	Plasmonic Modulators for Microwave Photonics Applications. , 2017, , .		1
104	Multi-scale theory-assisted nano-engineering of plasmonic-organic hybrid electro-optic device performance. , 2018, , .		1
105	Low-Power Data Center Transponders Enabled by Micrometer-scale Plasmonic Modulators. , 2020, , .		1
106	Mie-driven free-space electro-optic transducers. , 2021, , .		1
107	Demonstration of Difference Frequency Generation in a Silicon Slot Waveguide. , 2014, , .		0
108	Data Transmission at Terabit/s Data Rates Using Silicon-Organic Hybrid (SOH) Frequency Combs. , 2014, , .		0

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109	Plasmonic-organic hybrid (POH) modulators for OOK and BPSK signaling at 40 Gbit/s. , 2015, , .		0
110	Silicon-organic (SOH) and plasmonic-organic (POH) hybrid integration: Extending the capabilities of silicon photonics and plasmonics. , 2015, , .		0
111	Silicon-organic hybrid (SOH) integration and photonic multi-chip systems: Extending the capabilities of the silicon photonic platform. , 2015, , .		0
112	Silicon-organic hybrid (SOH) integration for low-power and high-speed signal generation. , 2015, , .		0
113	Plasmonic interconnects - a dense and fast interconnect solution. , 2017, , .		0
114	Organics-Based Phase Modulator for Terahertz Detection up to 1.25 THz. , 2018, , .		0
115	All-Plasmonic IQ Modulator with $36 \mu\text{m}$ Fiber-to-Fiber Pitch. , 2018, , .		0
116	What can Plasmonics Bring to Microwave Photonics?. , 2018, , .		0
117	A 325 GHz Analog Photonic Link. , 2019, , .		0
118	Nano-engineered spatial-light modulators from electro-optic nano-molecules. , 2021, , .		0
119	Integration of New Organic Electro-Optic Materials into Silicon and Silicon Nitride Photonics and into Metamaterial and Plasmonic Device Structures. , 2011, , .		0
120	Exploiting Material Resonances to Reduce Losses in Plasmonic Modulators. , 2017, , .		0
121	Hybrid Photonic Integration and Plasmonic Devices: New Perspectives for High-Speed Communications and Ultra-Fast Signal Processing. , 2018, , .		0
122	Dual-Drive Plasmonic Transmitter with Co-Designed Driver Electronics operated at 120 GBd On-Off Keying. , 2019, , .		0
123	All-Plasmonic 100 GBd Optical Communication Link. , 2019, , .		0
124	Terahertz quantum optics in the time-domain: from field correlation measurements on vacuum field fluctuations in free space towards cavity electro-optics. , 2020, , .		0
125	Integrated Plasmonic Terahertz Field Detector. , 2020, , .		0
126	Electrically Tunable Graphene Organic Hybrid Ring Resonators. , 2021, , .		0