

Richard Schatz

List of Publications by Year in descending order

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144
papers

2,059
citations

279798

23
h-index

315739

38
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144
all docs

144
docs citations

144
times ranked

1355
citing authors

#	ARTICLE	IF	CITATIONS
1	200 Gbps/Lane IM/DD Technologies for Short Reach Optical Interconnects. Journal of Lightwave Technology, 2020, 38, 492-503.	4.6	117
2	30 GHz direct modulation bandwidth in detuned loaded InGaAsP DBR lasers at 1.55 [micro sign]m wavelength. Electronics Letters, 1997, 33, 488.	1.0	110
3	Low-chirp isolator-free 65-GHz-bandwidth directly modulated lasers. Nature Photonics, 2021, 15, 59-63.	31.4	100
4	Extended modulation bandwidth of DBR and external cavity lasers by utilizing a cavity resonance for equalization. IEEE Journal of Quantum Electronics, 2000, 36, 1468-1475.	1.9	79
5	Analog modulation properties of oxide confined VCSELs at microwave frequencies. Journal of Lightwave Technology, 2002, 20, 1740-1749.	4.6	67
6	100 GHz Externally Modulated Laser for Optical Interconnects. Journal of Lightwave Technology, 2017, 35, 1174-1179.	4.6	64
7	Steady state model for facet heating leading to thermal runaway in semiconductor lasers. Journal of Applied Physics, 1994, 76, 2509-2521.	2.5	63
8	Monolithically Integrated 100 GHz DFB-TWEAM. Journal of Lightwave Technology, 2009, 27, 3410-3415.	4.6	63
9	55 GHz Bandwidth Distributed Reflector Laser. Journal of Lightwave Technology, 2017, 35, 397-403.	4.6	62
10	Longitudinal spatial instability in symmetric semiconductor lasers due to spatial hole burning. IEEE Journal of Quantum Electronics, 1992, 28, 1443-1449.	1.9	52
11	Temperature sensitivity of the threshold current of long-wavelength InGaAs-GaAs VCSELs with large gain-cavity detuning. IEEE Journal of Quantum Electronics, 2004, 40, 453-462.	1.9	49
12	Free-Space Communications Enabled by Quantum Cascade Lasers. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2000407.	1.8	48
13	55-GHz Bandwidth Short-Cavity Distributed Reflector Laser and its Application to 112-Gb/s PAM-4. , 2016, , .		45
14	Nonlinearity-aware 200-Gbit/s DMT transmission for C-band short-reach optical interconnects with a single packaged electro-absorption modulated laser. Optics Letters, 2018, 43, 182.	3.3	42
15	Comprehensive Study of Equalization-Enhanced Phase Noise in Coherent Optical Systems. Journal of Lightwave Technology, 2015, 33, 4834-4841.	4.6	39
16	<title>Modulation response measurements and evaluation of MQW InGaAsP lasers of various designs</title>. , 1996, 2684, 138.		35
17	Properties of highly strained InGaAs/GaAs quantum wells for 1.2-1.4μm laser diodes. Applied Physics Letters, 2002, 81, 2334-2336.	3.3	33
18	Bridging the Terahertz Gap: Photonics-Assisted Free-Space Communications From the Submillimeter-Wave to the Mid-Infrared. Journal of Lightwave Technology, 2022, 40, 3149-3162.	4.6	33

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19	Dynamics of spatial hole burning effects in DFB lasers. IEEE Journal of Quantum Electronics, 1995, 31, 1981-1993.	1.9	32
20	Toward Terabit Digital Radio over Fiber Systems: Architecture and Key Technologies. IEEE Communications Magazine, 2019, 57, 131-137.	6.1	32
21	Impact of Losses in the Bragg Section on the Dynamics of Detuned Loaded DBR Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 1360-1367.	1.9	31
22	Real-time 100 Gbps/core NRZ and EDB IM/DD transmission over multicore fiber for intra-datacenter communication networks. Optics Express, 2018, 26, 10519.	3.4	31
23	Temperature insensitive 1.3-µm InGaAs-GaAs quantum dot distributed feedback lasers for 10-Gbit/s transmission over 21-km. Electronics Letters, 2006, 42, 1457.	1.0	29
24	The effect of stitching errors on the spectral characteristics of DFB lasers fabricated using electron beam lithography. Journal of Lightwave Technology, 1992, 10, 1256-1266.	4.6	26
25	24-GHz modulation bandwidth and passive alignment of flip-chip mounted DFB laser diodes. IEEE Photonics Technology Letters, 1997, 9, 306-308.	2.5	26
26	Design optimization of InGaAs/InGaAlAs 1.55-µm strain-compensated MQW lasers for direct modulation applications. Semiconductor Science and Technology, 2004, 19, 615-625.	2.0	25
27	Investigation on the spectral characteristics of DFB lasers with different grating configurations made by electron-beam lithography. Journal of Lightwave Technology, 1993, 11, 1405-1415.	4.6	23
28	Laser Frequency Noise in Coherent Optical Systems: Spectral Regimes and Impairments. Scientific Reports, 2017, 7, 844.	3.3	23
29	Parameter extraction from DFB lasers by means of a simple expression for the spontaneous emission spectrum. IEEE Photonics Technology Letters, 1994, 6, 1182-1184.	2.5	21
30	Experimental Study of 1.55-µm EML-Based Optical IM/DD PAM-4/8 Short Reach Systems. IEEE Photonics Technology Letters, 2017, 29, 523-526.	2.5	19
31	High-Speed PAM4-Based Optical SDM Interconnects With Directly Modulated Long-Wavelength VCSEL. Journal of Lightwave Technology, 2019, 37, 356-362.	4.6	19
32	A correct single-mode photon rate equation for multisection lasers. IEEE Photonics Technology Letters, 1996, 8, 614-616.	2.5	18
33	Field trial over 820 km installed SSMF and its potential Terabit/s superchannel application with up to 57.5-Gbaud DP-QPSK transmission. Optics Communications, 2015, 353, 133-138.	2.1	18
34	Real-Time 100 Gb/s Transmission Using Three-Level Electrical Duobinary Modulation for Short-Reach Optical Interconnects. Journal of Lightwave Technology, 2017, 35, 1313-1319.	4.6	18
35	Full-duplex DOCSIS/WirelessDOCSIS fiber-radio network employing packaged AFPM-based base-stations. IEEE Photonics Technology Letters, 2006, 18, 406-408.	2.5	16
36	Power efficiency of WDM networks using various modulation formats with spectral efficiency limited by linear crosstalk. Optics Communications, 2014, 318, 31-36.	2.1	16

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37	Carrier Phase Recovery Algorithms for Coherent Optical Circular mQAM Systems. Journal of Lightwave Technology, 2016, 34, 2717-2723.	4.6	16
38	Direct Modulation and Free-Space Transmissions of up to 6 Gbps Multilevel Signals With a 4.65- μm Quantum Cascade Laser at Room Temperature. Journal of Lightwave Technology, 2022, 40, 2370-2377.	4.6	16
39	Design of inductive p-i-n diode matching for optical receivers with increased bit-rate operation. Journal of Lightwave Technology, 2001, 19, 1956-1963.	4.6	15
40	High-speed direct Modulation of widely tunable MG-Y laser. IEEE Photonics Technology Letters, 2005, 17, 1157-1159.	2.5	15
41	100 Gbaud 4PAM Link for High Speed Optical Interconnects. , 2017, , .		15
42	Nonlinearity Tolerant High-Speed DMT Transmission With 1.5- μm Single-Mode VCSEL and Multi-Core Fibers for Optical Interconnects. Journal of Lightwave Technology, 2019, 37, 380-388.	4.6	14
43	Beyond 200 Gbps per Lane Intensity Modulation Direct Detection (IM/DD) Transmissions for Optical Interconnects: Challenges and Recent Developments. , 2019, , .		14
44	400-Gb/s direct modulation using a DFB+R laser. Optics Letters, 2020, 45, 3337.	3.3	14
45	Isolator-free μm ; 67-GHz bandwidth DFB+R laser with suppressed chirp. , 2020, , .		14
46	50-GHz Repetition Gain Switching Using a Cavity-Enhanced DFB Laser Assisted by Optical Injection Locking. Journal of Lightwave Technology, 2020, 38, 1844-1850.	4.6	13
47	DFB laser with nonuniform coupling coefficient realized by double-layer buried grating. IEEE Photonics Technology Letters, 1993, 5, 1128-1131.	2.5	12
48	Improved spectral characteristics of MQW-DFB lasers by incorporation of multiple phase-shifts. Journal of Lightwave Technology, 1995, 13, 434-441.	4.6	12
49	Spectral and energy efficiency considerations in mixed-line rate WDM networks with signal quality guarantee. , 2013, , .		12
50	Laser Rate Equation-Based Filtering for Carrier Recovery in Characterization and Communication. Journal of Lightwave Technology, 2015, 33, 3271-3279.	4.6	12
51	Long-Term Reliable μm ;200-Gb/s Directly Modulated Lasers with 800GbE-Compliant DSP. , 2021, , .		12
52	Relative intensity noise and linewidth measurements of a widely tunable GCSR laser. IEEE Photonics Technology Letters, 1998, 10, 481-483.	2.5	11
53	Optical Amplification-Free 200 Gbaud On-Off Keying Link for Intra-Data Center Communications. , 2022, , .		11
54	40 Gb/s transmission experiment using directly modulated 1.55 μm DBR lasers. , 0, , .		10

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55	Full-Duplex DOCSIS/WirelessDOCSIS Fiber-Optic Radio Network Employing Packaged AFPMs as Optical/Electrical Transducers. Journal of Lightwave Technology, 2007, 25, 673-684.	4.6	10
56	Analysis of Spectral and Energy Efficiency Tradeoff in Single-Line Rate WDM Links. Journal of Lightwave Technology, 2017, 35, 1847-1857.	4.6	10
57	200-Gb/s Direct Modulation of a 50-GHz Class Laser With Advanced Digital Modulations. Journal of Lightwave Technology, 2021, 39, 845-852.	4.6	10
58	Measurement of a VPE-transported DFB laser with blue-shifted frequency modulation response from DC to 2 GHz. Electronics Letters, 1988, 24, 746.	1.0	9
59	High-Speed 1.56- μm Multiple Quantum Well Asymmetric Fabry-Perot Modulator/Detector (AFPMD) for Radio-Over-Fibre Applications. , 2005, , .		9
60	Experimental characterization of high-speed 155- μm buried heterostructure InGaAsP/InGaAlAs quantum-well lasers. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 318.	2.1	9
61	Evaluation of an automatic method to extract the grating coupling coefficient in different types of fabricated DFB lasers. IEEE Journal of Quantum Electronics, 1998, 34, 141-146.	1.9	8
62	Quest for very high speed VCSELs: pitfalls and clues. , 2001, , .		8
63	The Effect of Barrier Composition on the Vertical Carrier Transport and Lasing Properties of 1.55- μm Multiple Quantum-Well Structures. IEEE Journal of Quantum Electronics, 2006, 42, 713-724.	1.9	8
64	Linewidth Enhancement Factor of Semiconductor Lasers: Results from Round-Robin Measurements in COST 288. , 2007, , .		8
65	Short Reach Communication Technologies for Client-Side Optics Beyond 400 Gbps. IEEE Photonics Technology Letters, 2021, 33, 1046-1049.	2.5	8
66	Feedforward Neural Network-Based EVM Estimation: Impairment Tolerance in Coherent Optical Systems. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-10.	2.9	8
67	Pure frequency modulation or intensity modulation with suppressed frequency chirp using active Bragg reflector integrated laser. Electronics Letters, 1989, 25, 304.	1.0	7
68	Amplitude and frequency modulation characteristics of widely tunable GCSR lasers. IEEE Photonics Technology Letters, 1998, 10, 1383-1385.	2.5	7
69	Bandwidth enhancement and chirp reduction in DBR lasers by strong optical injection. , 2000, , .		7
70	Modeling spatial hole burning and mode competition in index-guided VCSELs. , 2003, , .		7
71	Blind Phase Search with Angular Quantization Noise Mitigation for Efficient Carrier Phase Recovery. Photonics, 2017, 4, 37.	2.0	7
72	Recent developments in high-speed optical modulators. , 2008, , 183-220.		6

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73	50 Gb/s Modulation and/or Detection with a Travelling-Wave Electro-Absorption Transceiver. , 2008, , .		6
74	Effective Linewidth of Semiconductor Lasers for Coherent Optical Data Links. Photonics, 2016, 3, 39.	2.0	6
75	100 Gbaud PAM4 link without EDFA and post-equalization for optical interconnects. , 2019, , .		6
76	Enhanced linear dynamic range of asymmetric Fabry-Pe/spl acute/rot modulator/detector. IEEE Photonics Technology Letters, 2006, 18, 770-772.	2.5	5
77	Modulation and chirp evaluation of 100 GHz DFB-TWEAM. , 2010, , .		5
78	Fabrication of an electro-absorption transceiver with a monolithically integrated optical amplifier for fiber transmission of 40â€“60 GHz radio signals. Semiconductor Science and Technology, 2011, 26, 014042.	2.0	5
79	Kernel Affine Projection for Nonlinearity Tolerant Optical Short Reach Systems. IEEE Transactions on Communications, 2020, 68, 6403-6412.	7.8	5
80	Unrepeated 240-km 64-QAM Transmission Using Distributed Raman Amplification over SMF Fiber. Applied Sciences (Switzerland), 2020, 10, 1433.	2.5	5
81	Two-section InGaAsP DBR-lasers at 1.55 Î¼m wavelength with 31 GHz direct modulation bandwidth. , 0, , .		4
82	Broadband measurements of frequency noise spectrum in two section DBR laser. Electronics Letters, 1991, 27, 289.	1.0	4
83	On the modulation bandwidth of semiconductor microcavity lasers. IEEE Photonics Technology Letters, 1994, 6, 1312-1314.	2.5	4
84	Enhanced modulation bandwidth and self-pulsations in detuned loaded InGaAsP DBR-lasers. , 0, , .		4
85	Impact of spatial hole burning on modulation response of vertical cavity surface emitting lasers. , 0, , .		4
86	Influence of Electrical Parasitics and Drive Impedance on the Laser Modulation Response. IEEE Photonics Technology Letters, 2004, 16, 21-23.	2.5	4
87	Single-mode 1.27Î¼m InGaAs vertical cavity surface-emitting lasers with temperature-tolerant modulation characteristics. Applied Physics Letters, 2005, 86, 211109.	3.3	4
88	A path to use large linewidth LO in 28 Gbd 16-QAM metro links. , 2015, , .		4
89	Equalization Enhanced Phase Noise in Coherent Optical Systems with Digital Pre- and Post-Processing. Photonics, 2016, 3, 12.	2.0	4
90	Thermal Reflow Engineered Cylindrical Polymer Waveguides for Optical Interconnects. IEEE Photonics Technology Letters, 2018, 30, 447-450.	2.5	4

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91	Experimental validation of CNNs versus FFNNs for time- and energy-efficient EVM estimation in coherent optical systems. Journal of Optical Communications and Networking, 2021, 13, E63.	4.8	4
92	MCF-Enabled Self-Homodyne 16/64QAM Transmission for SDM Optical Access Networks. , 2018, , .		4
93	<title>High-speed visible VCSEL for POF data links</title>. , 2000, 3946, 88.		3
94	Rate Equation-Based Phase Recovery for Semiconductor Laser Coherent Transmitters. , 2015, , .		3
95	Adaptive Boundaries Scheme for Cycle-Slip Mitigation in C-mQAM Coherent Systems. IEEE Photonics Technology Letters, 2015, 27, 2154-2157.	2.5	3
96	Coupled-Cavity VCSEL with an Integrated Electro-Absorption Modulator: Small- and Large-Signal Modulation Analysis. Applied Sciences (Switzerland), 2020, 10, 6128.	2.5	3
97	100 Gbaud Onâ€“Off Keying/Pulse Amplitude Modulation Links in C-Band for Short-Reach Optical Interconnects. Applied Sciences (Switzerland), 2021, 11, 4284.	2.5	3
98	Laser Linewidth Tolerant EVM Estimation Approach for Intelligent Signal Quality Monitoring Relying on Feedforward Neural Networks. , 2021, , .		3
99	Correlation measurements of intensity noise from the two facets of DFB lasers during linewidth rebroadening. Electronics Letters, 1992, 28, 1542.	1.0	2
100	High speed modulation characteristics of long wavelength vertical cavity lasers based on an integrated InP Bragg reflector. , 0, , .		2
101	Design and evaluation of high speed DBR lasers for analog and digital transmission. , 0, , .		2
102	Detuned-loading effects on directly-modulated high-speed lasers. , 0, , .		2
103	High-Speed Performance of 1.55 Åµm Buried Hetero-Structure Lasers with 20 InGaAsP/InGaAlAs Quantum-Wells. , 2006, , .		2
104	Enhanced linear dynamic range of asymmetric Fabry-Pe/spl acute/rot modulator/detector. IEEE Photonics Technology Letters, 2006, 18, 1040-1042.	2.5	2
105	Round-Robin Measurements of Linewidth Enhancement Factor of Semiconductor Lasers in COST 288 Action. , 2007, , .		2
106	Widely Tunable Wavelength Conversion 10 Gb/s Using a Modulated Grating Y-branch Laser Integrated with an Optical Amplifier. , 2007, , .		2
107	400km transmission of STM-16 data on baseband and DVBT on 40GHz subcarrier. , 2008, , .		2
108	Reduction of Dispersion Induced Distortions in Radio over Fibre links. , 2008, , .		2

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109	Spatial division multiplexing for optical data center networks. , 2018, , .		2
110	Deep Learning Assisted Pre-Carrier Phase Recovery EVM Estimation for Coherent Transmission Systems. , 2021, , .		2
111	Towards 1.6T datacentre interconnect technologies: the TWILIGHT perspective. JPhys Photonics, 2020, 2, 041002.	4.6	2
112	Quasi Real-Time 230-Gbit/s Coherent Transmission Field Trial over 820 km SSMF Using 57.5-Gbaud Dual-Polarization QPSK. , 2013, , .		2
113	Generation of RZ-AMI using a Widely Tuneable Modulated Grating Y-Branch Chirp Managed Laser. , 2010, , .		2
114	Performance Evaluation of PAM and DMT for Short-range Optical Transmission with High Speed InGaAsP DFB-TWEAM. , 2016, , .		2
115	Extraction of a large set of laser parameters from different measurements. , 0, , .		1
116	Modulation and noise measurements from 1520 to 1560 nm in monolithic widely tunable semiconductor lasers. , 1998, , .		1
117	20 GHz bandwidth of lasers flip-chip-mounted on microstructured carriers with integrated electrical waveguides. , 0, , .		1
118	Enhanced direct modulation efficiency by FM to IM conversion. , 0, , .		1
119	High-frequency analog modulation of oxide confined 670-nm vertical-cavity surface-emitting lasers. Optical Engineering, 2004, 43, 3138.	1.0	1
120	10 Gb/s direct modulation of 40 nm tunable modulated-grating Y-branch laser. , 2005, , .		1
121	Effects of detuned loading on the modulation performance of widely tunable MG-Y lasers. , 2008, , .		1
122	Digital signal processing approaches for semiconductor phase noise tolerant coherent transmission systems. Proceedings of SPIE, 2015, , .	0.8	1
123	300+ Gbps Short-Reach Optical Communications. , 2020, , .		1
124	High-Speed Short Reach Optical Communications: Technological Options and Challenges. , 2020, , .		1
125	Effect of stitching errors on the performance of DFB lasers fabricated using e-beam lithography (Poster Paper). , 1992, , .		0
126	Cross-correlation measurements of intensity noise from the two facets of DFB lasers during linewidth rebroadening. , 0, , .		0

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127	Measurement of amplitude and frequency modulation responses of widely tunable GCSR lasers. , 0, , .		0
128	Measurement and parameter extraction of semiconductor lasers: experiences of the pan-European action COST 240. , 1998, 3415, 152.		0
129	Selectively oxidized vertical-cavity surface-emitting lasers for high-speed data communication. , 2001, 4286, 96.		0
130	High-performance 1.2- μm highly strained InGaAs/GaAs quantum well lasers. , 0, , .		0
131	III-V materials growth by hydride VPE for high frequency optoelectronic devices. , 0, , .		0
132	Influence of gain nonlinearity on the second order harmonic distortion in semiconductor lasers. , 0, , .		0
133	Design optimization of InGaAsP-InAlAs/ 1.55 μm strain-compensated MQW lasers for direct modulation applications. , 0, , .		0
134	<title>The influence of gain nonlinearities on distortion in semiconductor lasers</title>. , 2004, , .		0
135	A silicon optical bench for flip chip mounting of widely tunable modulated grating Y-branch lasers. , 0, , .		0
136	Experimental Demonstration of Full-Duplex DOCSIS Signal Transmissions over a Wireline/Wireless-Fibre Access Network. , 2006, , .		0
137	Low-cost packaging of a reflective electroabsorption modulator/detector with optimized spurious free dynamic range. , 2006, , .		0
138	Intermodulation Distortion Suppression in a Full-Duplex Radio-over-Fibre System Employing Asymmetric Fabry-Perot Modulator/Detector. , 2006, , .		0
139	<title>Silicon optical bench for flip-chip integration of high speed widely tunable lasers</title>. Proceedings of SPIE, 2008, , .	0.8	0
140	Dynamic properties of electrically p ⁿ confined, epitaxially regrown 1.27 μm InGaAs single-mode vertical-cavity surface-emitting lasers. IET Optoelectronics, 2009, 3, 163-167.	3.3	0
141	Extension of 40 Gbps link with a directly detected 2.5 Gbps subcarrier channel. , 2009, , .		0
142	Experimental Evaluation of Impairments in Unrepeated DP-16QAM Link with Distributed Raman Amplification. Photonics, 2017, 4, 16.	2.0	0
143	Parameter extraction. , 1999, , 235-268.		0
144	GaAs/AlGaAs buried-heterostructure laser diodes with semi-insulating GaInP:Fe regrowth. , 0, , .		0