DomaniÃ§ Lavery

List of Publications by Year
in descending order

143 papers	3,100 citations	201674 27 h-index	189892 50 g-index
143 all docs	143 docs citations	143 times ranked	1980 citing authors

#	Article	IF	Citations
1	Replacing the Soft-Decision FEC Limit Paradigm in the Design of Optical Communication Systems. Journal of Lightwave Technology, 2015, 33, 4338-4352.	4.6	312
2	End-to-End Deep Learning of Optical Fiber Communications. Journal of Lightwave Technology, 2018, 36, 4843-4855.	4.6	256
3	Digital Coherent Receivers for Long-Reach Optical Access Networks. Journal of Lightwave Technology, 2013, 31, 609-620.	4.6	106
4	Replacing the Soft-Decision FEC Limit Paradigm in the Design of Optical Communication Systems. Journal of Lightwave Technology, 2016, 34, 707-721.	4.6	92
5	4 Tb/s Transmission Reach Enhancement Using 10 Ã— 400 Gb/s Super-Channels and Polarization Insensitive Dual Band Optical Phase Conjugation. Journal of Lightwave Technology, 2016, 34, 1717-1723.	4.6	89
6	Optical Fibre Capacity Optimisation via Continuous Bandwidth Amplification and Geometric Shaping. IEEE Photonics Technology Letters, 2020, 32, 1021-1024.	2.5	85
7	Maximizing the optical network capacity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20140440.	3.4	79
8	Sensitivity Gains by Mismatched Probabilistic Shaping for Optical Communication Systems. IEEE Photonics Technology Letters, 2016, 28, 786-789.	2.5	74
9	Blind Equalization of Receiver In-Phase/Quadrature Skew in the Presence of Nyquist Filtering. IEEE Photonics Technology Letters, 2013, 25, 2446-2449.	2.5	73
10	Unrepeatered Nyquist PDM-16QAM transmission over 364â€‰â€‰km using Raman amplification and multi-channel digital back-propagation. Optics Letters, 2015, 40, 3025.	3.3	72
11	End-to-end optimized transmission over dispersive intensity-modulated channels using bidirectional recurrent neural networks. Optics Express, 2019, 27, 19650.	3.4	71
12	Design of a 1 Tb/s Superchannel Coherent Receiver. Journal of Lightwave Technology, 2016, 34, 1453-1463.	4.6	70
13	A long-reach ultra-dense 10 Gbit/s WDM-PON using a digital coherent receiver. Optics Express, 2010, 18, 25855.	3.4	61
14	Dual-Polarization Non-Linear Frequency-Division Multiplexed Transmission With <inline-formula> <tex-math notation="LaTeX">b</tex-math> </inline-formula>-Modulation. Journal of Lightwave Technology, 2019, 37, 1570-1578.	4.6	54
15	Comparison of Low Complexity Coherent Receivers for UDWDM-PONs ($lambda$-to-the-User). Journal of Lightwave Technology, 2018, 36, 3453-3464.	4.6	52
16	Increasing the information rates of optical communications via coded modulation: a study of transceiver performance. Scientific Reports, 2016, 6, 21278.	3.3	51
17	On the limits of digital back-propagation in the presence of transceiver noise. Optics Express, 2017, 25, 4564.	3.4	49
18	Networks for Future Services in a Smart City: Lessons Learned from the Connected OFCity Challenge 2017. IEEE Communications Magazine, 2018, 56, 138-144.	6.1	46

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19	Polarization-Insensitive Single-Balanced Photodiode Coherent Receiver for Long-Reach WDM-PONs. Journal of Lightwave Technology, 2016, 34, 2034-2041.	4.6	45
20	Modulation format dependence of digital nonlinearity compensation performance in optical fibre communication systems. Optics Express, 2017, 25, 3311.	3.4	44
21	Nonlinearity-Free Coherent Transmission in Hollow-Core Antiresonant Fiber. Journal of Lightwave Technology, 2019, 37, 909-916.	4.6	43
22	Generation and long-haul transmission of polarization-switched QPSK at 429 Gb/s. Optics Express, 2011, 19, 9296.	3.4	38
23	Experimental Demonstration of Dual-Polarization NFDM Transmission With b -Modulation. IEEE Photonics Technology Letters, 2019, 31, 885-888.	2.5	38
24	Equalization enhanced phase noise in Nyquist-spaced superchannel transmission systems using multi-channel digital back-propagation. Scientific Reports, 2015, 5, 13990.	3.3	34
25	Characterization of long-haul 112Gbit/s PDM-QAM-16 transmission with and without digital nonlinearity compensation. Optics Express, 2010, 18, 12939.	3.4	33
26	Reduced Complexity Equalization for Coherent Long-Reach Passive Optical Networks [Invited]. Journal of Optical Communications and Networking, 2015, 7, A16.	4.8	32
27	A Simple Nonlinearity-Tailored Probabilistic Shaping Distribution for Square QAM. , 2018, , .		32
28	The Benefit of Split Nonlinearity Compensation for Single-Channel Optical Fiber Communications. IEEE Photonics Technology Letters, 2016, 28, 1803-1806.	2.5	31
29	PULSE: Optical Circuit Switched Data Center Architecture Operating at Nanosecond Timescales. Journal of Lightwave Technology, 2020, 38, 4906-4921.	4.6	31
30	Digital backpropagation accounting for polarization-mode dispersion. Optics Express, 2017, 25, 1903.	3.4	27
31	91 nm C+L Hybrid Distributed Ramanâ€“Erbium-Doped Fibre Amplifier for High Capacity Subsea Transmission. , 2018, , .		27
32	Recent Progress and Outlook for Coherent PON. , 2018, , .		27
33	Bidirectional wavelength-division multiplexing transmission over installed fibre using a simplified optical coherent access transceiver. Nature Communications, 2017, 8, 1043.	12.8	26
34	Geometric Shaping of 2-D Constellations in the Presence of Laser Phase Noise. Journal of Lightwave Technology, 2021, 39, 481-490.	4.6	26
35	Irregular Polar Coding for Complexity-Constrained Lightwave Systems. Journal of Lightwave Technology, 2018, 36, 2248-2258.	4.6	25
36	74.38 Tb/s Transmission Over 6300 km Single Mode Fibre Enabled by C+L Amplification and Geometrically Shaped PDM-64QAM. Journal of Lightwave Technology, 2020, 38, 531-537.	4.6	25

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37	Amplification Schemes and Multi-Channel DBP for Unrepeatered Transmission. Journal of Lightwave Technology, 2016, 34, 2221-2227.	4.6	24
38	Opportunities for Optical Access Network Transceivers Beyond OOK [Invited]. Journal of Optical Communications and Networking, 2019, 11, A186.	4.8	23
39	Impact of Perturbations on Nonlinear Frequency-Division Multiplexing. Journal of Lightwave Technology, 2018, 36, 485-494.	4.6	22
40	0.61 Pb/s S, C, and L-Band Transmission in a 125Î¼m Diameter 4-Core Fiber Using a Single Wideband Comb Source. Journal of Lightwave Technology, 2021, 39, 1027-1032.	4.6	22
41	Experimental Demonstration of Geometrically-Shaped Constellations Tailored to the Nonlinear Fibre Channel. , 2018, , .		20
42	Study on the Impact of Nonlinearity and Noise on the Performance of High-Capacity Broadband Hybrid Raman-EDFA Amplified System. Journal of Lightwave Technology, 2019, 37, 5507-5515.	4.6	20
43	74.38 Tb/s Transmission Over 6300 km Single Mode Fiber with Hybrid EDFA/Raman Amplifiers. , 2019, , .		20
44	Experimental Demonstration of 24-Dimensional Extended Golay Coded Modulation with LDPC. , 2014, , .		18
45	DSP Enabled Optical Detection Techniques for PON. Journal of Lightwave Technology, 2020, 38, 684-695.	4.6	18
46	Experimental characterization of nonlinear interference noise as a process of intersymbol interference. Optics Letters, 2018, 43, 1123.	3.3	18
47	Concept and Experimental Demonstration of Optical IM/DD End-to-End System Optimization using a Generative Model. , 2020, , .		18
48	Reach Enhancement of 100% for a DP-64QAM Super-Channel using MC-DBP. , 2015, , .		17
49	Experimental Analysis of Nonlinear Impairments in Fibre Optic Transmission Systems up to 7.3 THz. Journal of Lightwave Technology, 2017, 35, 4809-4816.	4.6	17
50	The Impact of Transceiver Noise on Digital Nonlinearity Compensation. Journal of Lightwave Technology, 2018, 36, 695-702.	4.6	17
51	Bidirectional 10 Gbit/s long-reach WDM-PON using digital coherent receivers. , 2011, , .		17
52	LDPC Codes for Optical Channels: Is the â€œFEC Limitâ€•a Good Predictor of Post-FEC BER?. , 2015, , .		16
53	Frequency Diversity MIMO Detection for DP- QAM Transmission. Journal of Lightwave Technology, 2015, 33, 1388-1394.	4.6	15
54	Digital nonlinearity compensation in high-capacity optical communication systems considering signal spectral broadening effect. Scientific Reports, 2017, 7, 12986.	3.3	15

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55	A Closed-Form Expression to Evaluate Nonlinear Interference in Raman-Amplified Links. Journal of Lightwave Technology, 2017, 35, 4316-4328.	4.6	15
56	2048-QAM transmission at 15 GBd over 100 km using geometric constellation shaping. Optics Express, 2021, 29, 18743.	3.4	15
57	Long-Haul Transmission of PS-QPSK at 100 Gb/s Using Digital Backpropagation. IEEE Photonics Technology Letters, 2012, 24, 176-178.	2.5	13
58	Optical and Digital Phase Conjugation Techniques for Fiber Nonlinearity Compensation. , 2015, , .		13
59	On the bandwidth dependent performance of split transmitter-receiver optical fiber nonlinearity compensation. Optics Express, 2017, 25, 4554.	3.4	13
60	Geometrically-shaped 64-point Constellations via Achievable Information Rates. , 2018, , .		13
61	AI-optimised tuneable sources for bandwidth-scalable, sub-nanosecond wavelength switching. Optics Express, 2021, 29, 11221.	3.4	13
62	A comparison of modulation formats for passive optical networks. Optics Express, 2011, 19, B836.	3.4	12
63	80-km Coherent DWDM-PON on 20-GHz Grid With Injected Gain Switched Comb Source. IEEE Photonics Technology Letters, 2014, 26, 364-367.	2.5	12
64	Modified radius directed equaliser for high order QAM. , 2015, , .		12
65	Modulation order and code rate optimisation for digital coherent transceivers using generalised mutual information. , 2015, , .		12
66	Increasing achievable information rates with pilot-based DSP in standard intradyne detection. , 2019, , .		12
67	The Trade-off Between Transceiver Capacity and Symbol Rate. , 2018, , .		12
68	Experimental Investigation of Nonlinear Signal Distortions in Ultra-Wideband Transmission Systems. , 2017, , .		12
69	Gain-switched multicarrier transmitter in a long-reach UDWDM PON with a digital coherent receiver. Optics Letters, 2013, 38, 4797.	3.3	11
70	Spectral Shaping for Mitigating Backreflections in a Bidirectional 10 Gbit/s Coherent WDM-PON. , 2013, , .		11
71	The impact of phase conjugation on the nonlinear-Shannon limit: The difference between optical and electrical phase conjugation. , 2015, , .		11
72	Modeling of nonlinearity-compensated optical communication systems considering second-order signal-noise interactions. Optics Letters, 2017, 42, 3351.	3.3	11

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73	Experimental Investigation of Deep Learning for Digital Signal Processing in Short Reach Optical Fiber Communications. , 2020, , .		11
74	Enhanced superchannel transmission using phase conjugation. , 2015, , .		10
75	Relative impact of channel symbol rate on transmission capacity. Journal of Optical Communications and Networking, 2020, 12, B1.	4.8	10
76	Performance Oriented DSP for Flexible Long Haul Coherent Transmission. Journal of Lightwave Technology, 2022, 40, 1256-1272.	4.6	10
77	Reducing the Power Consumption of the CMA Equalizer Update for a Digital Coherent Receiver. , 2014, , .		9
78	Transceiver-Limited High Spectral Efficiency Nyquist-WDM Systems. , 2015, , .		9
79	Realizing High Sensitivity at 40 Gbit/s and 100 Gbit/s. , 2012, , .		9
80	Nonlinear Frequency-Division Multiplexing in the Focusing Regime. , 2017, , .		9
81	Digital Coherence Enhancement Enabling 6-GBd DP-64QAM Using a 1.4-MHz Linewidth Laser. IEEE Photonics Technology Letters, 2013, 25, 2213-2216.	2.5	8
82	Fast Wavelength Switching 6 GBd Dual Polarization 16QAM Digital Coherent Burst Mode Receiver. IEEE Photonics Technology Letters, 2014, 26, 297-300.	2.5	8
83	On the Impact of Fixed Point Hardware for Optical Fiber Nonlinearity Compensation Algorithms. Journal of Lightwave Technology, 2018, 36, 5016-5022.	4.6	8
84	Deep Learning for Communication over Dispersive Nonlinear Channels: Performance and Comparison with Classical Digital Signal Processing. , 2019, , .		8
85	Digital Coherent Technology for Long-Reach Optical Access. , 2014, , .		7
86	Frequency diversity MIMO detection for dual-carrier DP-16QAM transmission. , 2014, , .		7
87	Irregular Polar Coding for Multi-Level Modulation in Complexity-Constrained Lightwave Systems. , 2017, , .		7
88	Packet Timescale Wavelength Switching Enabled by Regression Optimisation. IEEE Photonics Technology Letters, 2020, 32, 477-480.	2.5	7
89	A Baud-Rate Sampled Coherent Transceiver with Digital Pulse Shaping and Interpolation. , 2013, , .		7
90	Polarization-insensitive single balanced photodiode coherent receiver for passive optical networks. , 2015, , .		6

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91	Corrections to â€œReplacing the Soft-Decision FEC Limit Paradigm in the Design of Optical Communication Systemsâ€•[no. 20, Oct 15 4338-4352]. Journal of Lightwave Technology, 2016, 34, 722-722.	4.6	6
92	Span length and information rate optimisation in optical transmission systems using single-channel digital backpropagation. Optics Express, 2017, 25, 25353.	3.4	6
93	Performance of Kramersâ€“Kronig Receivers in the Presence of Local Oscillator Relative Intensity Noise. Journal of Lightwave Technology, 2019, 37, 3035-3043.	4.6	6
94	Coded Modulation for 100G Coherent EPON. Journal of Lightwave Technology, 2020, 38, 564-572.	4.6	6
95	A Simplified Dual-Carrier DP-64QAM 1 Tb/s Transceiver. , 2017, , .		6
96	A Low Complexity Hybrid Time-Frequency Domain Adaptive Equalizer for Coherent Optical Receivers. , 2016, , .		6
97	Performance of momentum-based frequency-domain MIMO equalizer in the presence of feedback delay. Optics Express, 2020, 28, 19133.	3.4	6
98	Time-Domain Learned Digital Back-Propagation. , 2020, , .		5
99	Demonstration of 10 Gbit/s Colorless Coherent PON Incorporating Tunable DS-DBR Lasers and Low-Complexity Parallel DSP. , 2012, , .		5
100	Low Complexity Multichannel Nonlinear Predistortion for Passive Optical Networks. , 2015, , .		4
101	Nonlinearity Mitigation in the Presence of Intercore-Crosstalk. , 2018, , .		4
102	Rate-Adaptive Coded Modulation with Geometrically-shaped Constellations. , 2018, , .		4
103	On the Impact of Backreflections in a Bidirectional 10 Gbit/s Coherent WDM-PON. , 2012, , .		4
104	Ultra-long-haul transmission of 7Ã—429 Gbit/s PS-QPSK and PDM-BPSK. Optics Express, 2011, 19, B581.	3.4	3
105	Distributed abstraction and verification of an installed optical fibre network. Scientific Reports, 2021, 11, 10750.	3.3	3
106	The Partially-Coherent AWGN Channel: Transceiver Strategies for Low-Complexity Fibre Links. Journal of Lightwave Technology, 2021, 39, 5423-5431.	4.6	3
107	A Comparison of Impairment Abstractions by Multiple Users of an Installed Fiber Infrastructure. , 2019, , .		3
108	Record High Capacity (6.8 Tbit/s) WDM Coherent Transmission in Hollow-Core Antiresonant Fiber. , 2017, , .		3

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109	Long-haul WDM transmission of PDM-8PSK and PDM-8QAM with nonlinear DSP. , 2012, , .		2
110	Fixed Point and Power Consumption Analysis of a Coherent Receiver for Optical Access Networks Implemented in FPGA. , 2013, , .		2
111	The benefit of split nonlinearity compensation for single channel optical fiber communications. , 2016, , .		2
112	Coherent Technologies for Passive Optical Networks. , 2019, , .		2
113	Improved Power Budget of 112 Gb/s/$lambda$ Intra-Datacentre Links Using a Split-Carrier Transmitter Architecture. IEEE Photonics Journal, 2019, 11, 1-15.	2.0	2
114	Experimental Demonstration of Dual-Polarisation NFDM Transmission with B-Modulation. , 2019, , .		2
115	Extending Phase Noise Tolerance in UDWDM Access Networks. , 2020, , .		2
116	Multi-Channel DBP for Reach Enhancement of High Capacity M-QAM Super-Channels. , 2015, , .		2
117	Digital Nonlinearity Compensation Considering Signal Spectral Broadening Effects in Dispersion-managed Systems. , 2018, , .		2
118	Impact of Transceiver Subsystems on High-Capacity Optical Transmission. , 2018, , .		2
119	Optical Fiber Communication Systems Based on End-to-End Deep Learning : (Invited Paper). , 2020, , .		2
120	Nonlinearity Compensation and Information Rates in Fully-Loaded C-band Optical Fibre Transmission Systems. , 2017, , .		1
121	Impact of Intercore Crosstalk on Achievable Information Rates. , 2018, , .		1
122	Bidirectional Symmetric 25G Coherent ONU Using a Single Laser, Single-Ended PIN and a 2-bit ADC. , 2018, , .		1
123	A Low-Loss Split-Carrier Transmitter Architecture for Intra-Datacentre Communications. , 2018, , .		1
124	Ultra-long-haul transmission of 7Ã—42.9Gbit/s PS-QPSK and PM-BPSK. , 2011, , .		1
125	Modified Digital Backpropagation Accounting for Polarization-Mode Dispersion. , 2017, , .		1
126	Coherent ONU Designs for 50 Gb/s/Î» PON. , 2019, , .		1

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127	End-to-End Learning in Optical Fiber Communications: Experimental Demonstration and Future Trends. , 2020, , .		1
128	0.596 Pb/s S, C, L-Band Transmission in a 125Âµm Diameter 4-core Fiber Using a Single Wideband Comb Source. , 2020, , .		1
129	Fast Wavelength Switching DP-OFDM Transceiver in a 5-Node 800km Coherent OBS Network. , 2014, , .		0
130	Unrepeated transmission over 253.4 km ultra low loss fiber achieving 6.95 b/s/Hz SE using EDFA-only pre-amplification. , 2014, , .		0
131	Real time 100 Gbit/s electrical Nyquist WDM transmitter. , 2014, , .		0
132	Digital nonlinearity compensation in high-capacity optical fibre communication systems: Performance and optimisation. , 2017, , .		0
133	Digital Back-Propagation Performance in Wideband Optical Fibre Transmission Systems. , 2017, , .		0
134	Digital back-propagation for unrepeatered transmission. , 2017, , .		0
135	Experimental Realisation of Single-Carrier Alamouti-Coded QPSK Using Frequency-Diverse Dual-Polarisation RF Pilot Tones. , 2018, , .		0
136	Spectral Broadening of Gaussian Process in Optical Fibre and Implication on the Spectral Efficiency. , 2018, , .		0
137	Self-Suppression of Signal-Signal Beating Interference using a Split-Carrier Transmitter. , 2019, , .		0
138	Inter-Channel Interference in Non-Linear Frequency-Division Multiplexed Networks on Fibre Links with Lumped Amplification. , 2019, , .		0
139	Demonstration of 10 Gbit/s Colorless Coherent PON Incorporating Tunable DS-DBR Lasers and Low-Complexity Parallel DSP. , 2012, , .		0
140	Algorithms and Reach Enhancement for Ultra High Bandwidth Transceivers. , 2016, , .		0
141	Experimental Evaluation of Phase Noise Tolerance for Polarization-Insensitive Coherent Receiver. , 2016, , .		0
142	Achievable Information Rates of Square MQAM Modulation Formats after Carrier Phase Estimation. , 2017, , .		0
143	Transmission Schemes for Future Access Networks. , 2018, , .		0