Francesco Da Ros

List of Publications by Year
in descending order

166 papers	2,503 citations	257450 24 h-index	233421 45 g-index
166 all docs	166 docs citations	166 times ranked	2028 citing authors

#	Article	IF	Citations
1	On-chip two-mode division multiplexing using tapered directional coupler-based mode multiplexer and demultiplexer. Optics Express, 2013, 21, 10376.	3.4	367
2	Single-source chip-based frequency comb enabling extreme parallel data transmission. Nature Photonics, 2018, 12, 469-473.	31.4	165
3	0.4 THz Photonic-Wireless Link With 106 Gb/s Single Channel Bitrate. Journal of Lightwave Technology, 2018, 36, 610-616.	4.6	113
4	Dual-polarization nonlinear Fourier transform-based optical communication system. Optica, 2018, 5, 263.	9.3	111
5	Constellation Shaping for WDM Systems Using 256QAM/1024QAM With Probabilistic Optimization. Journal of Lightwave Technology, 2016, 34, 5146-5156.	4.6	105
6	12 mode, WDM, MIMO-free orbital angular momentum transmission. Optics Express, 2018, 26, 20225.	3.4	77
7	Phase regeneration of DPSK signals in a silicon waveguide with reverse-biased p-i-n junction. Optics Express, 2014, 22, 5029.	3.4	75
8	Experimental Comparison of Probabilistic Shaping Methods for Unrepeated Fiber Transmission. Journal of Lightwave Technology, 2017, 35, 4871-4879.	4.6	65
9	Inverse System Design Using Machine Learning: The Raman Amplifier Case. Journal of Lightwave Technology, 2020, 38, 736-753.	4.6	63
10	Kerr Nonlinearity Mitigation: Mid-Link Spectral Inversion Versus Digital Backpropagation in 5×28-GBd PDM 16-QAM Signal Transmission. Journal of Lightwave Technology, 2015, 33, 1821-1827.	4.6	52
11	Boosting the secret key rate in a shared quantum and classical fibre communication system. Communications Physics, 2019, 2, .	5.3	48
12	260 Gbit/s photonic-wireless link in the THz band. , 2016, , .		47
13	THz photonic wireless links with 16-QAM modulation in the 375-450 GHz band. Optics Express, 2016, 24, 23777.	3.4	44
14	Characterization and Optimization of a High-Efficiency AlGaAs-On-Insulator-Based Wavelength Converter for 64- and 256-QAM Signals. Journal of Lightwave Technology, 2017, 35, 3750-3757.	4.6	41
15	Dual-Polarization NFDM Transmission With Continuous and Discrete Spectral Modulation. Journal of Lightwave Technology, 2019, 37, 2335-2343.	4.6	41
16	Kerr nonlinearity mitigation in 5 × 28-GBd PDM 16-QAM signal transmission over a dispersion-uncompensated link with backward-pumped distributed Raman amplification. Optics Express, 2014, 22, 27381.	3.4	37
17	Multi—Band Programmable Gain Raman Amplifier. Journal of Lightwave Technology, 2021, 39, 429-438.	4.6	36
18	QPSK-to-2×BPSK wavelength and modulation format conversion through phase-sensitive four-wave mixing in a highly nonlinear optical fiber. Optics Express, 2013, 21, 28743.	3.4	35

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19	End-to-End Optimization of Coherent Optical Communications Over the Split-Step Fourier Method Guided by the Nonlinear Fourier Transform Theory. Journal of Lightwave Technology, 2021, 39, 418-428.	4.6	35
20	Dual-Polarization NFDM Transmission Using Distributed Raman Amplification and NFT-Domain Equalization. IEEE Photonics Technology Letters, 2018, 30, 1983-1986.	2.5	33
21	Simultaneous QPSK-to-<inline-formula> <tex-math notation="TeX">(2imes) </tex-math></inline-formula>BPSK Wavelength and Modulation Format Conversion in PPLN. IEEE Photonics Technology Letters, 2014, 26, 1207-1210.	2.5	32
22	Low-complexity carrier phase recovery based on principal component analysis for square-QAM modulation formats. Optics Express, 2019, 27, 15617.	3.4	30
23	Optimization of DP-M-QAM Transmitter Using Cooperative Coevolutionary Genetic Algorithm. Journal of Lightwave Technology, 2018, 36, 2450-2462.	4.6	29
24	Scalable WDM phase regeneration in a single phase-sensitive amplifier through optical time lenses. Nature Communications, 2018, 9, 1049.	12.8	26
25	Experimental Demonstration of Multidimensional Switching Nodes for All-Optical Data Center Networks. Journal of Lightwave Technology, 2016, 34, 1837-1843.	4.6	24
26	Experimental Investigation of Optoelectronic Receiver With Reservoir Computing in Short Reach Optical Fiber Communications. Journal of Lightwave Technology, 2021, 39, 2460-2467.	4.6	24
27	Probabilistically Shaped 4-PAM for Short-Reach IM/DD Links With a Peak Power Constraint. Journal of Lightwave Technology, 2021, 39, 400-405.	4.6	23
28	Characterization and Optimization of Four-Wave-Mixing Wavelength Conversion System. Journal of Lightwave Technology, 2019, 37, 5628-5636.	4.6	21
29	Multichannel nonlinear distortion compensation using optical phase conjugation in a silicon nanowire. Optics Express, 2015, 23, 3640.	3.4	19
30	Nonlinear Phase Noise Compensation in Experimental WDM Systems With 256QAM. Journal of Lightwave Technology, 2017, 35, 1438-1443.	4.6	18
31	Single Channel 106 Gbit/s 16QAM Wireless Transmission in the 0.4 THz Band. , 2017, , .		18
32	All-optical Network Coding for DPSK signals. , 2013, , .		17
33	Wavelength conversion of QAM signals in a low loss CMOS compatible spiral waveguide. APL Photonics, 2017, 2, 046105.	5.7	17
34	Ultrahigh-Spectral-Efficiency WDM/SDM Transmission Using PDM-1024-QAM Probabilistic Shaping With Adaptive Rate. Journal of Lightwave Technology, 2018, 36, 1304-1308.	4.6	17
35	Perturbation-Based FEC-Assisted Iterative Nonlinearity Compensation for WDM Systems. Journal of Lightwave Technology, 2019, 37, 875-881.	4.6	17
36	Experimental Demonstration of Nonlinear Frequency Division Multiplexing Transmission With Neural Network Receiver. Journal of Lightwave Technology, 2020, 38, 6465-6473.	4.6	17

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37	Reservoir-Computing Based Equalization With Optical Pre-Processing for Short-Reach Optical Transmission. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-12.	2.9	17
38	Experimental Characterization of Raman Amplifier Optimization Through Inverse System Design. Journal of Lightwave Technology, 2021, 39, 1162-1170.	4.6	17
39	End-to-End Learning of a Constellation Shape Robust to Channel Condition Uncertainties. Journal of Lightwave Technology, 2022, 40, 3316-3324.	4.6	17
40	Gradient-Free Training of Autoencoders for Non-Differentiable Communication Channels. Journal of Lightwave Technology, 2021, 39, 6381-6391.	4.6	16
41	Frequency-domain ultrafast passive logic: NOT and XNOR gates. Nature Communications, 2020, 11, 5839.	12.8	15
42	SNR Optimization of Multi-Span Fiber Optic Communication Systems Employing EDFAs With Non-Flat Gain And Noise Figure. Journal of Lightwave Technology, 2021, 39, 6824-6832.	4.6	15
43	Single-Source AlGaAs Frequency Comb Transmitter for 661 Tbit/s Data Transmission in a 30-core Fiber. , 2016, , .		15
44	Symmetry Enhancement Through Advanced Dispersion Mapping in OPC-Aided Transmission. Journal of Lightwave Technology, 2021, 39, 2820-2829.	4.6	14
45	Experimental analysis of pilot-based equalization for probabilistically shaped WDM systems with 256QAM/1024QAM. , 2017, , .		14
46	Polarization diversity DPSK demodulator on the silicon-on-insulator platform with simple fabrication. Optics Express, 2013, 21, 7828.	3.4	13
47	Record-High Secret Key Rate for Joint Classical and Quantum Transmission Over a 37-Core Fiber. , 2018, , .		13
48	Tunable Optoelectronic Chromatic Dispersion Compensation Based on Machine Learning for Short-Reach Transmission. Applied Sciences (Switzerland), 2019, 9, 4332.	2.5	13
49	Power Evolution Modeling and Optimization of Fiber Optic Communication Systems With EDFA Repeaters. Journal of Lightwave Technology, 2021, 39, 3154-3161.	4.6	13
50	Experimental Demonstration of Dual Polarization Nonlinear Frequency Division Multiplexed Optical Transmission System. , 2017, , .		12
51	Probabilistically Shaped Rate-Adaptive Polar-Coded 256-QAM WDM Optical Transmission System. Journal of Lightwave Technology, 2020, 38, 1800-1808.	4.6	11
52	Design and performance evaluation of an OPC device using a dual-pump polarization-independent FOPA. , 2014, , .		10
53	Optical Phase Conjugation in a Silicon Waveguide With Lateral p-i-n Diode for Nonlinearity Compensation. Journal of Lightwave Technology, 2019, 37, 323-329.	4.6	10
54	Machine learning-based EDFA Gain Model Generalizable to Multiple Physical Devices. , 2020, , .		10

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55	Probabilistic Shaping for the Optical Phase Conjugation Channel. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-16.	2.9	9
56	909.5 Tbit/s Dense SDM and WDM Transmission Based on a Single Source Optical Frequency Comb and Kramers-Kronig Detection. IEEE Journal of Selected Topics in Quantum Electronics, 2021, 27, 1-8.	2.9	9
57	Demonstration of Cascaded In-Line Single-Pump Fiber Optical Parametric Amplifiers in Recirculating Loop Transmission. , 2012, , .		8
58	Dual-polarization wavelength conversion of 16-QAM signals in a single silicon waveguide with a lateral p-i-n diode [Invited]. Photonics Research, 2018, 6, B23.	7.0	8
59	Experimental Verification of Rate Flexibility and Probabilistic Shaping by 4D Signaling. , 2018, , .		8
60	Silicon Waveguide with Lateral p-i-n Diode for Nonlinearity Compensation by On-Chip Optical Phase Conjugation. , 2018, , .		8
61	Impact of Transmitter Phase Noise on NFDM Transmission With Discrete Spectral Modulation. IEEE Photonics Technology Letters, 2019, 31, 1767-1770.	2.5	8
62	Simultaneous gain profile design and noise figure prediction for Raman amplifiers using machine learning. Optics Letters, 2021, 46, 1157.	3.3	8
63	12 Mode, MIMO-Free OAM Transmission. , 2017, , .		8
64	Toward Intelligence in Photonic Systems. Optics and Photonics News, 2020, 31, 34.	0.5	8
65	Lumped Compensation of Nonlinearities based on Optical Phase Conjugation. Journal of Lightwave Technology, 2022, 40, 681-691.	4.6	8
66	Experimental demonstration of 6-mode division multiplexed NG-PON2: Cost effective 40 Gbit/s/spatial-mode access based on 3D laser inscribed photonic lanterns. , 2015, , .		7
67	Kramers–Kronig Detection with Adaptive Rates for 909.5 Tbit/s Dense SDM and WDM Data Channels. , 2018, , .		7
68	Machine-learning-based equalization for short-reach transmission: neural networks and reservoir computing. , 2021, , .		7
69	Inverse design of a Raman amplifier in frequency and distance domains using convolutional neural networks. Optics Letters, 2021, 46, 2650.	3.3	7
70	Approaching optimum phase measurement in the presence of amplifier noise. Optica, 2021, 8, 1262.	9.3	7
71	25-Gb/s Transmission Over 2.5-km SSMF by Silicon MRR Enhanced 1.55- $mu ext{m}$ III-V/SOI DML. IEEE Photonics Technology Letters, 2017, 29, 960-963.	2.5	6
72	Impact of Signal-Conjugate Wavelength Shift on Optical Phase Conjugation-based Transmission of QAM Signals. , 2017, , .		6

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73	100s Gigabit/s THz Communication. , 2018, , .		6
74	Optimization of frequency combs spectral-flatness using evolutionary algorithm. Optics Express, 2021, 29, 23447.	3.4	6
75	End-to-end optimized nonlinear Fourier transform-based coherent communications. , 2020, , .		6
76	Experimental demonstration of arbitrary Raman gain–profile designs using machine learning. , 2020, , .		6
77	Spectral and Spatial Power Evolution Design With Machine Learning-Enabled Raman Amplification. Journal of Lightwave Technology, 2022, 40, 3546-3556.	4.6	6
78	Kerr nonlinearity compensation in a 5×28-GBd PDM 16-QAM WDM system using fiber-based optical phase conjugation. , 2014, , .		5
79	Time Skew Estimator for Dual-Polarization QAM Transmitters. , 2017, , .		5
80	Unrepeatered Transmission Reach Extension by Receiver-Side all-Optical Back-Propagation. , 2019, , .		5
81	Experimental Comparison of Probabilistic Shaping with online PMF Optimization and Mid-link OPC. , 2018, , .		5
82	Regeneration of Phase Unlocked Serial Multiplexed DPSK Signals in a Single Phase Sensitive Amplifier. , 2017, , .		5
83	All-optical OFDM demultiplexing with optical partial Fourier transform and coherent sampling. Optics Letters, 2019, 44, 443.	3.3	5
84	Signal-to-Idler Conversion Penalty in AlGaAs-on-Insulator Wavelength Converter. , 2018, , .		5
85	Improved nonlinearity compensation of OPC-aided EDFA- amplified transmission by enhanced dispersion mapping. , 2020, , .		5
86	Two-Stage n-PSK Partitioning Carrier Phase Recovery Scheme for Circular mQAM Coherent Optical Systems. Photonics, 2016, 3, 37.	2.0	4
87	16-QAM field-quadrature decomposition using polarization-assisted phase sensitive amplification. , 2016, , .		4
88	128× 2 Gb/s WDM PON System with a Single TDM Time Lens Source using an AlGaAs-On-Insulator Waveguide. , 2018, , .		4
89	Experimental Demonstration of Optoelectronic Equalization for Short-reach Transmission with Reservoir Computing. , 2020, , .		4
90	Generalization Properties of Machine Learning-based Raman Models. , 2021, , .		4

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91	Phase-sensitive optical processing in silicon waveguides. , 2015, , .		3
92	Synchronization in a Random Length Ring Network for SDN-Controlled Optical TDM Switching. Journal of Optical Communications and Networking, 2017, 9, A26.	4.8	3
93	Enhanced dispersion mapping for OPC-aided transmission systems. , 2019, , .		3
94	All-Optical Nonlinear Pre-Compensation of Long-Reach Unrepeatered Systems. , 2020, , .		3
95	Optimization of a Hybrid EDFA-Raman C+L Band Amplifier through Neural-Network Models. , 2021, , .		3
96	Impact of Gain Saturation on the Parametric Amplification of 16-QAM Signals. , 2012, , .		3
97	Novel Hybrid Radio-over-Fiber Transmitter for Generation of Flexible Combination of WDM-ROF/WDM Channels. , 2019, , .		3
98	End-to-end learning for fiber-optic communication systems. , 2022, , 115-139.		3
99	Machine learning applied to inverse systems design. , 2022, , .		3
100	Gain optimization in fiber optical parametric amplifiers by combining standard and high-SBS threshold highly nonlinear fibers. , 2012, , .		2
101	All‐optical three‐input logic minterms generation using semiconductor optical amplifier‐based Sagnac interferometer. Electronics Letters, 2013, 49, 1467-1468.	1.0	2
102	Continuous wave phase-sensitive four-wave mixing in silicon waveguides with reverse-biased p-i-n junctions. , 2013, , .		2
103	A novel phase sensitive amplifier based QPSK regenerator without active phase-locking. , 2015, , .		2
104	Experimental demonstration of multidimensional switching nodes for all-optical data centre networks. , 2015, , .		2
105	Phase Regeneration of a BPSK Data Signal Using a Lithium Niobate Phase Modulator. Journal of Lightwave Technology, 2015, 33, 2189-2198.	4.6	2
106	Phase-sensitive four-wave mixing in AlGaAs-on-insulator nano-waveguides. , 2016, , .		2
107	A configurable FPGA FEC unit for Tb/s optical communication. , 2017, , .		2
108	Optimizing the Achievable Rates of Tricky Channels: A Probabilistic Shaping for OPC Channel Example. , 2018, , .		2

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109	Clock Recovery Challenges in DSP-Based Coherent Single-Mode and Multi-Mode Optical Systems. Future Internet, 2018, 10, 59.	3.8	2
110	Optical processing and manipulation of wavelength division multiplexed signals. , 2020, , 233-299.		2
111	Nonlinearity Compensation for Dual-Polarization Signals using Optical Phase Conjugation in a Silicon Waveguide. , 2018, , .		2
112	Signal Processing for On-Chip Space Division Multiplexing. , 2015, , .		2
113	Broadband and Efficient Dual-Pump Four-Wave-Mixing in AlGaAs-On-Insulator Nano-Waveguides. , 2016, , .		2
114	QPSK Regeneration without Active Phase-Locking. , 2016, , .		2
115	Synchronization Algorithm for SDN-controlled All-Optical TDM Switching in a Random Length Ring Network. , 2016, , .		2
116	4-PAM Dispersion-Uncompensated Transmission with Micro-Ring Resonator Enhanced 1.55-Âµm DML. , 2017, , .		2
117	Highly Flexible WDM PON System with a Single TDM Time Lens Source Enabling Record 150 km Downstream Reach. , 2018, , .		2
118	Link-Placement Characterization of Optical Phase Conjugation for Nonlinearity Compensation. , 2018, , .		2
119	Power Evolution Prediction and Optimization in a Multi-span System Based on Component-wise System Modeling. , 2020, , .		2
120	Four-wave mixing conversion efficiency requirements for optical phase conjugation based fiber nonlinearity compensation. , 2020, , .		2
121	QPSK phase regeneration in saturated degenerate dual-pump phase sensitive amplifiers. , 2011, , .		1
122	High efficiency wavelength conversion of 40 Gbps signals at 1550 nm in SOI nano-rib waveguides using p-i-n diodes. , 2013, , .		1
123	A comparison of nonlinear media for parametric all-optical signal processing. , 2013, , .		1
124	Experimental demonstration of an OFDM receiver based on a silicon-nanophotonic discrete Fourier transform filter. , 2014, , .		1
125	All-optical signal processing using silicon devices. , 2014, , .		1
126	Parametric Optical Signal Processing in Silicon Waveguides with Reverse-Biased p-i-n Junctions. , 2014, , .		1

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127	Optical phase conjugation for nonlinearity compensation in WDM PDM 16-QAM transmission over dispersion-compensated and dispersion-uncompensated links. , 2015, , .		1
128	Supercontinuum comb sources for broadband communications based on AlGaAs-on-insulator. Proceedings of SPIE, 2017, , .	0.8	1
129	Co-Existence of 87 Mbit/s Quantum and 10 Gbit/s Classical Communications in 37-Core Fiber. , 2019, , .		1
130	Joint Low-Complexity Opto-Electronic Chromatic Dispersion Compensation for Short-Reach Transmission. , 2019, , .		1
131	Optimization of Fiber Optics Communication Systems via End-to-End Learning. , 2020, , .		1
132	Distance and spectral power profile shaping using machine learning enabled Raman amplifiers. , 2021, , .		1
133	Advancing classical and quantum communication systems with machine learning. , 2020, , .		1
134	Low-penalty up to 16-QAM wavelength conversion in a low loss CMOS compatible spiral waveguide. , 2016, , .		1
135	Performance of Multi-Channel DBP with Long-haul Frequency-Referenced Transmission. , 2016, , .		1
136	Directly Modulated and ER Enhanced Hybrid III-V/SOI DFB Laser Operating up to 20 Gb/s for Extended Reach Applications in PONs. , 2017, , .		1
137	An ultra-efficient nonlinear planar integrated platform for optical signal processing and generation. , 2017, , .		1
138	Impact of Laser Phase Noise on Nonlinear Frequency Division Multiplexing Systems. , 2019, , .		1
139	Nonlinear Phase-Shift Cancellation in Dispersion-Shifted Fiber Transmission by All-Optical Back-Propagation. , 2020, , .		1
140	Noise statistics and its implications on optimal constellation shapes for channels with optical phase conjugation. , 2020, , .		1
141	Nonlinear Fourier Transform: Perpetual Research Topic or Future Game-Changer?. , 2020, , .		1
142	Characterization and Optical Compensation of LP01 and LP11 Intra-modal Nonlinearity in Few-Mode Fibers. , 2020, , .		1
143	Multi-band programmable gain Raman amplifier for high-capacity optical networks. , 2021, , .		1
144	Pulse Distortion in Saturated Fiber Optical Parametric Chirped Pulse Amplification. , 2012, , .		0

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145	Orthogonal Phase Quadratures Conversion to Different Wavelengths Through Phase-Sensitive Four Wave Mixing in an Highly Nonlinear Fiber. , 2013, , .		0
146	Perspectives of long-haul WDM transmission systems based on phase-insensitive fiber-optic parametric amplifiers. , 2015, , .		0
147	Ultra-broadband Nonlinear Optical Signal Processing for Optical Communications. , 2016, , .		0
148	On-chip mode division multiplexing technologies. , 2016, , .		0
149	Adaptive Rates of High-Spectral-Efficiency WDM/SDM Channels Using PDM-1024-QAM Probabilistic Shaping. , 2017, , .		0
150	1.5-Î¼m Directly modulated transmission over 66 km of SSMF with an integrated hybrid III-V/SOI DFB laser. , 2017, , .		0
151	Ultra-Broadband Optical Signal Processing using AlGaAs-OI Devices. , 2017, , .		0
152	25-Gb/s transmission over 2.5-km SSMF by silicon MRR enhanced 1.55-Î¼m III-V/SOI DML. , 2017, , .		0
153	Optical spectral reshaping for directly modulated 4-pulse amplitude modulation signals. , 2017, , .		0
154	Nonlinearity Compensation through Optical Phase Conjugation for Improved Transmission Reach/Rate. , 2018, , .		0
155	Coherent WDM PON using a Single Time Lens Source and Kramers-Kronig Receiver. , 2019, , .		0
156	Simultaneous 256 WDM Channel Generation using a Single AlGaAsOI Waveguide based Time Lens Source. , 2019, , .		0
157	FEC-assisted Nonlinearity Compensation for Coherent Optical Receivers. , 2021, , .		0
158	Machine learning enabled Raman amplifiers. , 2021, , .		0
159	Optimization of Raman amplifiers using machine learning. , 2021, , .		0
160	Polarization Diversity DPSK Demodulator on the Silicon-on-Insulator Platform with Simple Fabrication. , 2013, , .		0
161	Signal Quality Enhancement of Directly-Modulated VCSELs Using a Micro-Ring Resonator Transfer Function. , 2013, , .		0
162	Wavelength Conversion of QPSK and 16-QAM Coherent Signals in a CMOS Compatible Spiral Waveguide. , 2016, , .		0

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163	Tolerance of Continuous NFT Spectrum to Optical Fiber Channel Impairments. , 2016, , .		0
164	Bit-rate-transparent optical RZ-to-NRZ format conversion based on linear spectral phase filtering. , 2017, , .		0
165	Impact of Phase-Filtering on Optical Spectral Reshaping with Microring Resonators for Directly-Modulated 4-PAM Signals. , 2018, , .		0
166	Manipulation and Optical Processing of WDM Signals Using Optical Time Lenses. , 2019, , .		0