

Deep neural networks for the evaluation and design of p

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Citation Report

#	ARTICLE	IF	CITATIONS
1	Active learning of deep surrogates for PDEs: application to metasurface design. Npj Computational Materials, 2020, 6, .	8.7	43
2	Physical Information-Embedded Deep Learning for Forward Prediction and Inverse Design of Nanophotonic Devices. Journal of Lightwave Technology, 2021, 39, 6498-6508.	4.6	6
3	Deep Learning Enabled Design of Complex Transmission Matrices for Universal Optical Components. ACS Photonics, 2021, 8, 283-295.	6.6	44
4	Design of Graphene-based Terahertz Absorbers by Artificial Intelligence. , 2021, , .		1
5	Inverse Design for Silicon Photonics: From Iterative Optimization Algorithms to Deep Neural Networks. Applied Sciences (Switzerland), 2021, 11, 3822.	2.5	41
6	Deep Learning the Electromagnetic Properties of Metamaterials—A Comprehensive Review. Advanced Functional Materials, 2021, 31, 2101748.	14.9	70
7	Inverse design of ultra-narrowband selective thermal emitters designed by artificial neural networks. Optical Materials Express, 2021, 11, 1863.	3.0	22
8	Inverse design of mode-locked fiber laser by particle swarm optimization algorithm. Scientific Reports, 2021, 11, 13555.	3.3	19
9	Design of a transmissive metasurface antenna using deep neural networks. Optical Materials Express, 2021, 11, 2310.	3.0	24
10	Machine learning for alloys. Nature Reviews Materials, 2021, 6, 730-755.	48.7	202
11	A deep learning approach to the forward prediction and inverse design of plasmonic metasurface structural color. Applied Physics Letters, 2021, 119, .	3.3	33
12	Comparison of Different Neural Network Architectures for Plasmonic Inverse Design. ACS Omega, 2021, 6, 23076-23082.	3.5	10
13	Deep Reinforcement Learning for Digital Materials Design. , 2021, 3, 1433-1439.		46
14	2022 Roadmap on integrated quantum photonics. JPhys Photonics, 2022, 4, 012501.	4.6	152
16	Artificial Intelligence Meets Engineered Photonic Materials: introduction to special issue. Optical Materials Express, 2021, 11, 3431.	3.0	0
17	Design of multilayer optical thin-films based on light scattering properties and using deep neural networks. Optics Express, 2021, 29, 32627.	3.4	7
18	Multiplexed supercell metasurface design and optimization with tandem residual networks. Nanophotonics, 2021, 10, 1133-1143.	6.0	46
19	Deep-learning-based recognition of multi-singularity structured light. Nanophotonics, 2022, 11, 779-786.	6.0	29

#	ARTICLE	IF	CITATIONS
20	Basic Principles of Unveiling Electromagnetic Problems Based on Deep Learning. , 2022, , 23-41.		0
21	A mixture-density-based tandem optimization network for on-demand inverse design of thin-film high reflectors. Nanophotonics, 2021, 10, 4057-4065.	6.0	18
22	Multi-class, multi-functional design of photonic topological insulators by rational symmetry-indicators engineering. Nanophotonics, 2021, 10, 4523-4531.	6.0	21
23	Deep learning-based design of broadband GHz complex and random metasurfaces. APL Photonics, 2021, 6, .	5.7	8
24	Inverse design of grating couplers using the policy gradient method from reinforcement learning. Nanophotonics, 2021, 10, 3843-3856.	6.0	17
25	Machine-Learning-Assisted Acoustic Consecutive Fano Resonances: Application to a Tunable Broadband Low-Frequency Metasilencer. Physical Review Applied, 2021, 16, .	3.8	15
26	Guided mode meta-optics: metasurface-dressed waveguides for arbitrary mode couplers and on-chip OAM emitters with a configurable topological charge. Optics Express, 2021, 29, 39406.	3.4	13
27	Dimensionality reduction for the on-chip integration of advanced photonic devices and functionalities. , 2021, , .		0
28	Optical meta-waveguides for integrated photonics and beyond. Light: Science and Applications, 2021, 10, 235.	16.6	196
29	Chirality-selective all-dielectric metasurface structural color display. Optics Express, 2021, 29, 41258.	3.4	13
30	Optimization of optical waveguide antennas for directive emission of light. Journal of the Optical Society of America B: Optical Physics, 2022, 39, 83.	2.1	5
31	Physics-Informed Neural Networks with Hard Constraints for Inverse Design. SIAM Journal of Scientific Computing, 2021, 43, B1105-B1132.	2.8	167
32	Leveraging AI in Photonics and Beyond. Photonics, 2022, 9, 75.	2.0	8
33	Computational spectrometers enabled by nanophotonics and deep learning. Nanophotonics, 2022, 11, 2507-2529.	6.0	33
34	Free-form optimization of nanophotonic devices: from classical methods to deep learning. Nanophotonics, 2022, 11, 1809-1845.	6.0	38
35	Deep Learning Enabled Strategies for Modeling of Complex Aperiodic Plasmonic Metasurfaces of Arbitrary Size. ACS Photonics, 2022, 9, 575-585.	6.6	17
36	Deep Learning for Photonic Design and Analysis: Principles and Applications. Frontiers in Materials, 2022, 8, .	2.4	8
37	Intelligent on-demand design of phononic metamaterials. Nanophotonics, 2022, 11, 439-460.	6.0	55

#	ARTICLE	IF	CITATIONS
38	Manifold Learning for Knowledge Discovery and Intelligent Inverse Design of Photonic Nanostructures: Breaking the Geometric Complexity. ACS Photonics, 2022, 9, 714-721.	6.6	25
39	Benchmarking deep learning-based models on nanophotonic inverse design problems. , 2022, 1, 210012-210012.		43
40	Deep learning for the design and characterization of high efficiency self-focusing grating. Optics Communications, 2022, 510, 127951.	2.1	3
41	Photonics and thermodynamics concepts in radiative cooling. Nature Photonics, 2022, 16, 182-190.	31.4	187
42	Photonic matrix multiplication lights up photonic accelerator and beyond. Light: Science and Applications, 2022, 11, 30.	16.6	167
43	Deep Learning for the Modeling and Inverse Design of Radiative Heat Transfer. Physical Review Applied, 2021, 16, .	3.8	20
44	A learning based approach for designing extended unit cell metagratings. Nanophotonics, 2022, 11, 345-358.	6.0	8
45	CGC-NET: Aircraft Detection in Remote Sensing Images Based on Lightweight Convolutional Neural Network. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2022, 15, 2805-2815.	4.9	0
46	Instantaneous Property Prediction and Inverse Design of Plasmonic Nanostructures Using Machine Learning: Current Applications and Future Directions. Nanomaterials, 2022, 12, 633.	4.1	9
47	Nonlinear optical response of inverse-designed integrated photonic devices. Optics Letters, 2022, 47, 1254.	3.3	3
48	Machine-Engineered Active Disorder for Digital Photonics. Advanced Optical Materials, 2022, 10, 2102642.	7.3	1
49	Physics-informed recurrent neural network for time dynamics in optical resonances. Nature Computational Science, 2022, 2, 169-178.	8.0	7
50	Deep learning modeling strategy for material science: from natural materials to metamaterials. JPhys Materials, 2022, 5, 014003.	4.2	6
51	Enhancing adjoint optimization-based photonics inverse design with explainable machine learning. , 2022, , .		0
52	Deep learning for topological photonics. Advances in Physics: X, 2022, 7, .	4.1	10
53	Spectral emissivity modeling in multi-resonant systems using coupled-mode theory. Optics Express, 2022, 30, 9463.	3.4	7
54	Inverse design of two-dimensional materials with invertible neural networks. Npj Computational Materials, 2021, 7, .	8.7	15
55	Optimizing Startshot Lightsail Design: A Generative Network-Based Approach. ACS Photonics, 2022, 9, 190-196.	6.6	8

#	ARTICLE	IF	CITATIONS
56	Machine learning framework for quantum sampling of highly constrained, continuous optimization problems. Applied Physics Reviews, 2021, 8, .	11.3	14
57	Hearing the shape of a drum for light: isospectrality in photonics. Nanophotonics, 2022, 11, 2763-2778.	6.0	12
58	Research on Wastewater Treatment Monitoring Algorithms Based on Deep Convolutional Neural Networks. Wireless Communications and Mobile Computing, 2022, 2022, 1-11.	1.2	0
59	Automatic optical structure optimization method of the laser triangulation ranging system under the Scheimpflug rule. Optics Express, 2022, 30, 18667.	3.4	7
60	Smart and Rapid Design of Nanophotonic Structures by an Adaptive and Regularized Deep Neural Network. Nanomaterials, 2022, 12, 1372.	4.1	6
61	Broadband optical Ta ₂ O ₅ antennas for directional emission of light. Optics Express, 2022, 30, 19288.	3.4	5
62	Antenna Design Using a GAN-Based Synthetic Data Generation Approach. IEEE Open Journal of Antennas and Propagation, 2022, 3, 488-494.	3.7	2
63	Metasurfaces Design Based on Dnn and Lightgbm Algorithms. SSRN Electronic Journal, 0, , .	0.4	0
64	Deep Neural Network with Data Cropping Algorithm for Absorptive Frequency-Selective Transmission Metasurface. Advanced Optical Materials, 2022, 10, .	7.3	8
65	Materials Data toward Machine Learning: Advances and Challenges. Journal of Physical Chemistry Letters, 2022, 13, 3965-3977.	4.6	12
66	NEUTRON: Neural particle swarm optimization for material-aware inverse design of structural color. IScience, 2022, 25, 104339.	4.1	5
67	Enhancing Adjoint Optimization-Based Photonic Inverse Design with Explainable Machine Learning. ACS Photonics, 2022, 9, 1577-1585.	6.6	11
68	Intelligent metasurfaces: control, communication and computing. ELight, 2022, 2, .	23.9	158
69	Prediction of electrical properties of FDSOI devices based on deep learning. Nanotechnology, 2022, 33, 335203.	2.6	1
70	Reconfiguring Magnetic Infrared Resonances with the Plasmonic Phase-Change Material In ₃ SbTe ₂ . ACS Photonics, 2022, 9, 1821-1828.	6.6	11
71	Genetic algorithm assisted bridge fiber design and fabrication for few-mode multi-core fiber Fan-in/Fan-out device. Optics Express, 2022, 30, 19042.	3.4	12
72	Inverse design enables large-scale high-performance meta-optics reshaping virtual reality. Nature Communications, 2022, 13, 2409.	12.8	82
73	Inverse design of structural color: finding multiple solutions via conditional generative adversarial networks. Nanophotonics, 2022, 11, 3057-3069.	6.0	14

#	ARTICLE	IF	CITATIONS
74	Learning the Physics of All- ϵ -Dielectric Metamaterials with Deep Lorentz Neural Networks. <i>Advanced Optical Materials</i> , 2022, 10, .	7.3	13
75	Physics-Guided Neural-Network-Based Inverse Design of a Photonic Plasmonic Nanodevice for Superfocusing. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 27397-27404.	8.0	4
76	Measurements of near-surface radial profiles of electrophysical characteristics of cylindrical objects by the eddy current method using a priori data. <i>Ukrainian Metrological Journal</i> , 2022, , 5-11.	0.1	0
77	Optical tweezers across scales in cell biology. <i>Trends in Cell Biology</i> , 2022, 32, 932-946.	7.9	9
78	Empowering Metasurfaces with Inverse Design: Principles and Applications. <i>ACS Photonics</i> , 2022, 9, 2178-2192.	6.6	53
79	Heterogeneous Transfer-Learning-Enabled Diverse Metasurface Design. <i>Advanced Optical Materials</i> , 2022, 10, .	7.3	19
80	Deep learning in light-matter interactions. <i>Nanophotonics</i> , 2022, 11, 3189-3214.	6.0	10
81	Nonlinear multimode photonics: nonlinear optics with many degrees of freedom. <i>Optica</i> , 2022, 9, 824.	9.3	26
82	Long short-term memory neural network for directly inverse design of nanofin metasurface. <i>Optics Letters</i> , 2022, 47, 3239.	3.3	4
83	Light-Matter Interactions in Hybrid Material Metasurfaces. <i>Chemical Reviews</i> , 2022, 122, 15177-15203.	47.7	42
84	The accelerated design of the nanoantenna arrays by deep learning. <i>Nanotechnology</i> , 2022, 33, 485204.	2.6	1
85	Application and Thinking of Artificial Intelligence in Electrical Automation. <i>Wireless Communications and Mobile Computing</i> , 2022, 2022, 1-6.	1.2	1
86	Magnetically Actuated Reconfigurable Metamaterials as Conformal Electromagnetic Filters. <i>Advanced Intelligent Systems</i> , 2022, 4, .	6.1	14
87	Photonic Emulator for Inverse Design. <i>ACS Photonics</i> , 2023, 10, 2173-2181.	6.6	9
88	New customer-oriented design concept evaluation by using improved Z-number-based multi-criteria decision-making method. <i>Advanced Engineering Informatics</i> , 2022, 53, 101683.	8.0	11
89	Homeostatic neuro-metasurfaces for dynamic wireless channel management. <i>Science Advances</i> , 2022, 8, .	10.3	34
90	Deep-learning-assisted communication capacity enhancement by non-orthogonal state recognition of structured light. <i>Optics Express</i> , 2022, 30, 29781.	3.4	14
91	Deep reinforcement learning with a critic-value-based branch tree for the inverse design of two-dimensional optical devices. <i>Applied Soft Computing Journal</i> , 2022, 127, 109386.	7.2	8

#	ARTICLE	IF	CITATIONS
92	Cascade integration of nonlinear phenomena exhibited by monometallic nanoparticles. Journal of Physics: Conference Series, 2022, 2313, 012016.	0.4	0
93	A Multivariate Evaluation Model of Physical Education Teaching Quality with Random Matrix Optimization Neural Network. Mathematical Problems in Engineering, 2022, 2022, 1-11.	1.1	1
94	Algorithm-Driven Paradigms for Freeform Optical Engineering. ACS Photonics, 2022, 9, 2860-2871.	6.6	6
95	Toward High-Efficiency Ultrahigh Numerical Aperture Freeform Metalens: From Vector Diffraction Theory to Topology Optimization. Laser and Photonics Reviews, 2022, 16, .	8.7	26
96	High Speed Simulation and Freeform Optimization of Nanophotonic Devices with Physics-Augmented Deep Learning. ACS Photonics, 2022, 9, 3110-3123.	6.6	25
97	Strategical Deep Learning for Photonic Bound States in the Continuum. Laser and Photonics Reviews, 2022, 16, .	8.7	9
98	Tailoring the Thickness-Dependent Optical Properties of Conducting Nitrides and Oxides for Epsilon-Near-Zero-Enhanced Photonic Applications. Advanced Materials, 2023, 35, .	21.0	3
99	Transfer-Learning-Assisted Inverse Metasurface Design for 30% Data Savings. Physical Review Applied, 2022, 18, .	3.8	14
100	A miniaturized computational spectrometer with optimum number of nanophotonic filters: Deep-learning autoencoding and inverse design-based implementation. Photonics and Nanostructures - Fundamentals and Applications, 2022, 52, 101057.	2.0	4
101	Inverse design in flat optics. Photonics and Nanostructures - Fundamentals and Applications, 2022, 52, 101074.	2.0	5
102	Inverse design with flexible design targets via deep learning: Tailoring of electric and magnetic multipole scattering from nano-spheres. Photonics and Nanostructures - Fundamentals and Applications, 2022, 52, 101066.	2.0	9
103	Deep learning for non-parameterized MEMS structural design. Microsystems and Nanoengineering, 2022, 8, .	7.0	12
104	Security Analysis of Social Network Topic Mining Using Big Data and Optimized Deep Convolutional Neural Network. Computational Intelligence and Neuroscience, 2022, 2022, 1-12.	1.7	0
105	Scalable-Manufactured Plasmonic Metamaterial with Omnidirectional Absorption Bandwidth across Visible to Far-Infrared. Advanced Functional Materials, 2022, 32, .	14.9	9
106	Prediction of metasurface spectral response based on a deep neural network. Optics Letters, 2022, 47, 5092.	3.3	4
107	Inverse design of plasma metamaterial devices with realistic elements. Journal Physics D: Applied Physics, 2022, 55, 465203.	2.8	3
108	Machine learning and deep learning in phononic crystals and metamaterials – A review. Materials Today Communications, 2022, 33, 104606.	1.9	29
109	Challenges, Opportunities, and Prospects in Metal Halide Perovskites from Theoretical and Machine Learning Perspectives. Advanced Energy Materials, 2022, 12, .	19.5	19

#	ARTICLE	IF	CITATIONS
110	On the use of artificial neural networks in topology optimisation. Structural and Multidisciplinary Optimization, 2022, 65, .	3.5	46
111	DeepAdjoint: An All-in-One Photonic Inverse Design Framework Integrating Data-Driven Machine Learning with Optimization Algorithms. ACS Photonics, 0, , .	6.6	3
112	The reverse design of a tunable terahertz metasurface antenna based on a deep neural network. Microwave and Optical Technology Letters, 0, , .	1.4	1
113	Deep inverse photonic design: A tutorial. Photonics and Nanostructures - Fundamentals and Applications, 2022, 52, 101070.	2.0	6
114	Inverse design of nanophotonics devices and materials. Photonics and Nanostructures - Fundamentals and Applications, 2022, 52, 101084.	2.0	7
115	Fast Topology Optimization for Near-Field Focusing All-Dielectric Metasurfaces Using the Discrete Dipole Approximation. ACS Nano, 2022, 16, 18951-18958.	14.6	5
116	Transfer Learning for Modeling Plasmonic Nanowire Waveguides. Nanomaterials, 2022, 12, 3624.	4.1	0
117	A Generative Meta-Atom Model for Metasurface-Based Absorber Designs. Advanced Optical Materials, 2023, 11, .	7.3	5
118	Optimization of Structural Parameters of PCF Polarization Filter by a Genetic Algorithm. IEEE Photonics Journal, 2022, 14, 1-9.	2.0	5
119	A Precise Bare Simulation Approach to the Minimization of Some Distances. I. Foundations. IEEE Transactions on Information Theory, 2023, 69, 3062-3120.	2.4	2
120	Inverse design of core-shell particles with discrete material classes using neural networks. Scientific Reports, 2022, 12, .	3.3	3
121	Exploiting geometric biases in inverse nano-optical problems using artificial neural networks. Optics Express, 2022, 30, 45365.	3.4	2
122	Optimized optical/electrical/mechanical properties of ultrathin metal films for flexible transparent conductor applications: review [Invited]. Optical Materials Express, 2023, 13, 304.	3.0	7
123	Inverse design of truss lattice materials with superior buckling resistance. Npj Computational Materials, 2022, 8, .	8.7	23
124	Predicting strongly localized resonant modes of light in disordered arrays of dielectric scatterers: a machine learning approach. Optics Express, 2023, 31, 826.	3.4	1
125	Reaching the Full Potential of Machine Learning in Mitigating Environmental Impacts of Functional Materials. Reviews of Environmental Contamination and Toxicology, 2022, 260, .	1.3	1
126	Computation at the speed of light: metamaterials for all-optical calculations and neural networks. Advanced Photonics, 2022, 4, .	11.8	24
127	Neural Inverse Design of Nanostructures (NIDN). Scientific Reports, 2022, 12, .	3.3	1

#	ARTICLE	IF	CITATIONS
128	Inverse design of an on-chip optical response predictor enabled by a deep neural network. Optics Express, 2023, 31, 2049.	3.4	8
129	A deep transfer learning-based protocol accelerates full quantum mechanics calculation of protein. Briefings in Bioinformatics, 2023, 24, .	6.5	3
130	POViT: Vision Transformer for Multi-Objective Design and Characterization of Photonic Crystal Nanocavities. Nanomaterials, 2022, 12, 4401.	4.1	3
131	Super-resolution image display using diffractive decoders. Science Advances, 2022, 8, .	10.3	15
132	Tunable Metasurface Based on Plasmonic Quasi Bound State in the Continuum Driven by Metallic Quantum Wells. Advanced Optical Materials, 2023, 11, .	7.3	5
133	Machine and quantum learning for diamond-based quantum applications. Materials for Quantum Technology, 2023, 3, 012001.	3.1	2
134	Broad-angle coherent perfect absorption-lasing and super-collimation in two-dimensional non-Hermitian photonic crystals. Optics Express, 2023, 31, 2112.	3.4	1
135	Deep reinforcement learning empowers automated inverse design and optimization of photonic crystals for nanoscale laser cavities. Nanophotonics, 2023, 12, 319-334.	6.0	9
136	Compatible Stealth Metasurface for Laser and Infrared with Radiative Thermal Engineering Enabled by Machine Learning. Advanced Functional Materials, 2023, 33, .	14.9	7
137	Machine learning for knowledge acquisition and accelerated inverse-design for non-Hermitian systems. Communications Physics, 2023, 6, .	5.3	4
138	Inverse design meets nanophotonics: From computational optimization to artificial neural network. , 2023, , 3-32.		3
139	Meshless optical mode solving using scalable deep deconvolutional neural network. Scientific Reports, 2023, 13, .	3.3	0
140	Inverse Design of Photonic Crystal Filters with Arbitrary Correlation and Size for Accurate Spectrum Reconstruction. Applied Optics, 0, , .	1.8	0
141	Metric Learning: Harnessing the Power of Machine Learning in Nanophotonics. ACS Photonics, 2023, 10, 900-909.	6.6	8
142	Analysis and design of transition radiation in layered uniaxial crystals using Tandem neural networks. Journal of the Optical Society of America B: Optical Physics, 0, , .	2.1	0
143	Deep learning for the design of phononic crystals and elastic metamaterials. Journal of Computational Design and Engineering, 2023, 10, 602-614.	3.1	9
144	The 2023 terahertz science and technology roadmap. Journal Physics D: Applied Physics, 2023, 56, 223001.	2.8	103
145	Metasurface meta-atoms design based on DNN and LightGBM algorithms. Optical Materials, 2023, 136, 113471.	3.6	6

#	ARTICLE	IF	CITATIONS
146	Physics Compliance as a Metric for Neural Network Uncertainty. , 2022, , .		0
147	Optical Neural Network Architecture for Deep Learning with Temporal Synthetic Dimension. Chinese Physics Letters, 2023, 40, 034201.	3.3	1
148	Pollution level mapping of heavy metal in soil for ground-airborne hyperspectral data with support vector machine and deep neural network: A case study of Southwestern Xiong'an, China. Environmental Pollution, 2023, 321, 121132.	7.5	6
149	Predicting nonlinear optical scattering with physics-driven neural networks. APL Photonics, 2023, 8, .	5.7	4
150	A Model-Constrained Tangent Slope Learning Approach for Dynamical Systems. International Journal of Computational Fluid Dynamics, 2022, 36, 655-685.	1.2	0
151	On the influence of over-parameterization in manifold based surrogates and deep neural operators. Journal of Computational Physics, 2023, 479, 112008.	3.8	9
152	MoS ₂ as Nonlinear Optical Material for Optical Neural Networks. IEEE Journal of Selected Topics in Quantum Electronics, 2023, 29, 1-7.	2.9	3
153	Structural color generation: from layered thin films to optical metasurfaces. Nanophotonics, 2023, 12, 1019-1081.	6.0	19
154	Designing radiative cooling metamaterials for passive thermal management by particle swarm optimization. Chinese Physics B, 2023, 32, 057802.	1.4	2
155	Deep learning accelerated discovery of photonic power dividers. Nanophotonics, 2023, 12, 1255-1269.	6.0	1
156	Grid-wise simulation acceleration of the electromagnetic fields of 2D optical devices using super-resolution. Scientific Reports, 2023, 13, .	3.3	6
157	On Chip Polarization Beam Splitter Based on Inverse Design. Journal of Physics: Conference Series, 2023, 2464, 012019.	0.4	0
158	Group refractive index via auto-differentiation and neural networks. Scientific Reports, 2023, 13, .	3.3	1
159	Deep-Learning-Enabled Applications in Nanophotonics. Springer Series in Optical Sciences, 2023, , 141-156.	0.7	0
160	Deep neural network training method based on vectorgraphs for designing of metamaterial broadband polarization converters. Scientific Reports, 2023, 13, .	3.3	0
161	Deep-Learning-Assisted Inverse Design in Nanophotonics. Springer Series in Optical Sciences, 2023, , 113-140.	0.7	0
162	A knowledge-inherited learning for intelligent metasurface design and assembly. Light: Science and Applications, 2023, 12, .	16.6	16
163	A deep neural network for general scattering matrix. Nanophotonics, 2023, 12, 2583-2591.	6.0	5

#	ARTICLE	IF	CITATIONS
183	Perovskite micro-/nanoarchitecture for photonic applications. <i>Matter</i> , 2023, 6, 3165-3219.	10.0	4
184	Arbitrary Multifunctional Vortex Beam Designed by Deep Neural Network. <i>Advanced Optical Materials</i> , 2024, 12, .	7.3	1
185	Accurate and efficient prediction of photonic crystal waveguide bandstructures using neural networks. , 2023, 2, 1479.		0
186	Data-driven multi-valley dark solitons of multi-component Manakov Model using Physics-Informed Neural Networks. <i>Chaos, Solitons and Fractals</i> , 2023, 172, 113509.	5.1	5
187	GRIDS-Net: Inverse shape design and identification of scatterers via geometric regularization and physics-embedded deep learning. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2023, 414, 116167.	6.6	2
188	Metasurface-empowered optical cryptography. <i>Materials Today</i> , 2023, 67, 424-445.	14.2	11
189	Deep Learning-Enabled Intelligent Design of Thermal Metamaterials. <i>Advanced Materials</i> , 2023, 35, .	21.0	3
190	Z-preference-based multi-criteria decision-making for design concept evaluation highlighting customer confidence attitude. <i>Soft Computing</i> , 2023, 27, 12329-12351.	3.6	0
191	Deep Learning and Adjoint Method Accelerated Inverse Design in Photonics: A Review. <i>Photonics</i> , 2023, 10, 852.	2.0	2
194	Dual-band optical collimator based on deep-learning designed, fabrication-friendly metasurfaces. <i>Nanophotonics</i> , 2023, 12, 3491-3499.	6.0	1
195	Artificial neural networks for photonic applications—from algorithms to implementation: tutorial. <i>Advances in Optics and Photonics</i> , 2023, 15, 739.	25.5	6
196	Recent developments in Chalcogenide phase change material-based nanophotonics. <i>Nanotechnology</i> , 0, , .	2.6	0
198	Correlating metasurface spectra with a generation-elimination framework. <i>Nature Communications</i> , 2023, 14, .	12.8	6
199	End-to-End Diverse Metasurface Design and Evaluation Using an Invertible Neural Network. <i>Nanomaterials</i> , 2023, 13, 2561.	4.1	1
200	Machine learning assisted intelligent design of meta structures: a review. , 0, 3, .		2
201	Research on accelerated coding absorber design with deep learning. <i>Physica Scripta</i> , 2023, 98, 096003.	2.5	1
202	Polarization Multi-Image Synthesis with Birefringent Metasurfaces. , 2023, , .		1
203	Recent Progress in Silicon-Based Photonic Integrated Circuits and Emerging Applications. <i>Advanced Optical Materials</i> , 2023, 11, .	7.3	2

#	ARTICLE	IF	CITATIONS
204	Inverse design and experimental realization of plasma metamaterials. <i>Physical Review Applied</i> , 2023, 20, .	3.8	0
205	Inverse design of all-dielectric metasurfaces with accidental bound states in the continuum. <i>Nanophotonics</i> , 2023, 12, 3767-3779.	6.0	3
206	Infrared bound states in the continuum: random forest method. <i>Optics Letters</i> , 2023, 48, 4460.	3.3	1
207	Prediction of complex strain fields in concrete using a deep learning approach. <i>Construction and Building Materials</i> , 2023, 404, 133257.	7.2	0
208	Disordered optical metasurfaces: from light manipulation to energy harvesting. <i>Advances in Physics: X</i> , 2023, 8, .	4.1	0
209	Morphogenetic metasurfaces: unlocking the potential of turing patterns. <i>Nature Communications</i> , 2023, 14, .	12.8	0
210	Machine learning assisted inverse design on mechanically tunable lateral hybrid metasurface. , 2023, , .		0
211	Diverse ranking metamaterial inverse design based on contrastive and transfer learning. <i>Optics Express</i> , 2023, 31, 32865.	3.4	0
212	In Silico Design of Freeform Solar Cell Structures from High-Throughput Artificial Intelligence-Generated Configurations. <i>Solar Rrl</i> , 2023, 7, .	5.8	0
213	Artificial Intelligence-Assisted Robustness of Optoelectronics for Automated Driving: A Review. <i>IEEE Transactions on Intelligent Transportation Systems</i> , 2024, 25, 57-73.	8.0	1
214	Calculation of Optimum Transit Times with Real-Coded Genetic Algorithm. , 2023, 13, 833-842.		0
216	Deep Neural Network for Performance Prediction of Silicon Mode Splitter. <i>Lecture Notes in Electrical Engineering</i> , 2023, , 775-781.	0.4	0
217	Deep Learning for Targeted Treatment. <i>Studies in Computational Intelligence</i> , 2023, , 173-189.	0.9	0
218	Scientific Computing with Diffractive Optical Neural Networks. <i>Advanced Intelligent Systems</i> , 2023, 5, .	6.1	2
219	Performance-Based Generative Design for Parametric Modeling of Engineering Structures Using Deep Conditional Generative Models. <i>Automation in Construction</i> , 2023, 156, 105128.	9.8	0
220	Interpretable inverse-designed cavity for on-chip nonlinear photon pair generation. <i>Optica</i> , 2023, 10, 1529.	9.3	2
221	Predictability of machine learning framework in cross-section data. <i>Open Physics</i> , 2023, 21, .	1.7	0
222	Time-Domain Topology Optimization of Arbitrary Dispersive Materials for Broadband 3D Nanophotonics Inverse Design. <i>ACS Photonics</i> , 2023, 10, 3875-3887.	6.6	1

#	ARTICLE	IF	CITATIONS
223	Advances in materials informatics for tailoring thermal radiation: A perspective review. , 2024, 2, 100078.		0
224	Physics-data-driven intelligent optimization for large-aperture metalenses. Opto-Electronic Advances, 2023, 6, 230133-230133.	13.3	7
225	Neural network assisted high-spatial-resolution polarimetry with non-interleaved chiral metasurfaces. Light: Science and Applications, 2023, 12, .	16.6	2
226	Strength and manufacturability enhancement of a composite automotive component via an integrated finite element/artificial neural network multi-objective optimization approach. Composite Structures, 2024, 327, 117694.	5.8	1
227	Metasurfaces for near-eye display applications. , 2023, 2, 230025-230025.		1
228	Wide-angle and high-efficiency acoustic retroreflectors enabled by many-objective optimization algorithm and deep learning models. Physical Review Materials, 2023, 7, .	2.4	2
229	System parameter optimization with improved genetic algorithm for laser triangulation sensors. , 2023, , .		0
230	Real-data-driven real-time reconfigurable microwave reflective surface. Nature Communications, 2023, 14, .	12.8	0
231	A newcomerâ€™s guide to deep learning for inverse design in nano-photonics. Nanophotonics, 2023, 12, 4387-4414.	6.0	5
232	Simulation-efficient Modeling of Light Propagation using Neural Networks. , 2023, , .		0
233	Ultra-low loss SOI waveguide crossings designed by a hybrid global optimization based on deep learning. Optics Communications, 2023, , 130189.	2.1	0
234	Design of compact and low-loss S-bends by CMA-ES. Optics Express, 2023, 31, 43850.	3.4	0
235	Deep Learning in Computational Design Synthesis: A Comprehensive Review. Journal of Computing and Information Science in Engineering, 0, , 1-39.	2.7	0
236	Designing Metasurfaces for Efficient Solar Energy Conversion. ACS Photonics, 0, , .	6.6	1
237	Waveguide-based augmented reality displays: perspectives and challenges. ELight, 2023, 3, .	23.9	7
238	Auxiliary physics-informed neural networks for forward, inverse, and coupled radiative transfer problems. Applied Physics Letters, 2023, 123, .	3.3	0
239	Deep learning for nano-photonic materials â€“ The solution to everything!?. Current Opinion in Solid State and Materials Science, 2024, 28, 101129.	11.5	0
240	Potential of photonic crystal fiber for designing optical devices for telecommunication networks. Optical and Quantum Electronics, 2024, 56, .	3.3	0

#	ARTICLE	IF	CITATIONS
241	Topological Learning for the Classification of Disorder: An Application to the Design of Metasurfaces. ACS Nano, 0, , .	14.6	0
242	Experiment-based deep learning approach for power allocation with a programmable metasurface. , 2023, 1, .		0
243	A New Instrument for Measuring Customersâ€™ Perceptions of Service Warmth: A Big Data and Machine Learning Approach. SAGE Open, 2023, 13, .	1.7	0
244	Predictive Modeling of Lightâ€™Matter Interaction in One Dimension: A Dynamic Deep Learning Approach. Applied System Innovation, 2024, 7, 4.	4.6	0
245	Adjoint-based optimization of dielectric coatings for refractory metals to achieve broadband spectral reflection. Journal of the Optical Society of America B: Optical Physics, 2024, 41, A98.	2.1	0
246	Machine Learning-Based Predictive Modeling for Designing Transmon Superconducting Qubits. , 2023, , .		0
247	Deep Learning Design for Multiwavelength Infrared Image Sensors Based on Dielectric Freeform Metasurface. Advanced Optical Materials, 2024, 12, .	7.3	0
248	An Efficient Design Method for a Metasurface Polarizer with High Transmittance and Extinction Ratio. Photonics, 2024, 11, 53.	2.0	0
249	Quasibound states in the continuum in photonic crystal based optomechanical microcavities. Physical Review B, 2024, 109, .	3.2	0
250	Multi-solution inverse design in photonics using generative modeling. Journal of the Optical Society of America B: Optical Physics, 2024, 41, A152.	2.1	0
251	Parallel edge extraction operators on chip speed up photonic convolutional neural networks. Optics Letters, 2024, 49, 838.	3.3	0
252	Neuromorphic models applied to photonics. , 2024, , 221-253.		0
253	Recent progress on inverse design for integrated photonic devices: methodology and applications. Journal of Nanophotonics, 2024, 18, .	1.0	0
254	<tt>TNet</tt>: A Model-Constrained Tikhonov Network Approach for Inverse Problems. SIAM Journal of Scientific Computing, 2024, 46, C77-C100.	2.8	0
255	The Intelligent Design of Silicon Photonic Devices. Advanced Optical Materials, 2024, 12, .	7.3	0
256	Inverse design in photonic crystals. Nanophotonics, 2024, 13, 1219-1237.	6.0	1
257	Optical computing metasurfaces: applications and advances. Nanophotonics, 2024, 13, 419-441.	6.0	0
258	Predicting optical properties of different photonic crystal fibers from 2D structural images using convolutional neural network and transfer learning. Optics Communications, 2024, 558, 130363.	2.1	0

#	ARTICLE	IF	CITATIONS
259	Hybrid supervised and reinforcement learning for the design and optimization of nanophotonic structures. Optics Express, 2024, 32, 9920.	3.4	0
260	Spectral transfer-learning-based metasurface design assisted by complex-valued deep neural network. , 2024, 3, .		0
261	The Use of Recurrent Neural Networks in the Optimization of Computer Science Algorithms. , 2023, , .		0
262	Design of Planar Multilayer Devices for Optical Filtering Using Surrogate Model Based on Artificial Neural Network. Optics, 2024, 5, 121-132.	1.2	0
263	Neuromorphic Optical Data Storage Enabled by Nanophotonics: A Perspective. ACS Photonics, 2024, 11, 874-891.	6.6	0
264	Flexibly Designable 2D Chiral Metasurfaces with Pixelated Topological Structure Based on Machine Learning. Laser and Photonics Reviews, 0, , .	8.7	0
265	Ultrahigh performance passive radiative cooling by hybrid polar dielectric metasurface thermal emitters. Opto-Electronic Advances, 2024, 7, 230194-230194.	13.3	0