

# Chao-Hsin Wu

## List of Publications by Year in descending order

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134  
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361413

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454955

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134  
docs citations

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times ranked

1055  
citing authors

#	ARTICLE	IF	CITATIONS
1	Effect of Chirped Dispersion and Modal Partition Noise on Multimode VCSEL Encoded With NRZ-OOK and PAM-4 Formats. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-9.	2.9	8
2	Analytical Modeling of Tunnel-Junction Transistor Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-8.	2.9	1
3	Ge p-i-n Photodiode as 60-Gbit/s Optical NRZ-OOK Data Receiver. Journal of Lightwave Technology, 2022, 40, 4326-4336.	4.6	4
4	Monolithic integration of 940-nm AlGaAs distributed Bragg reflectors on bulk Ge substrates. Optical Materials Express, 2022, 12, 1131.	3.0	5
5	Recent Advances in 850 nm VCSELs for High-Speed Interconnects. Photonics, 2022, 9, 107.	2.0	24
6	QAM-DMT of Hybridly Integrated EAM-DFBLD Chip-on-Board With Adaptive Machine Learning Algorithm for 149.6-Gbit/s BtB and 138-Gbit/s 10-km-SMF Transmission. IEEE Journal of Selected Topics in Quantum Electronics, 2022, 28, 1-13.	2.9	1
7	Coupling angle tolerance of the 850-nm single-mode VCSEL output collimated by lensed OM4-MMF or GI-SMF for a NRZ-OOK link. Optics Express, 2022, 30, 17130.	3.4	3
8	Single-Mode VCSEL Transmission for Short Reach Communications. Journal of Lightwave Technology, 2021, 39, 868-880.	4.6	31
9	Operation bandwidth of negative capacitance characterized by the frequency response of capacitance magnification in ferroelectric/dielectric stacks. Journal of Materials Chemistry C, 2021, 9, 1401-1409.	5.5	2
10	D-Shaped Silicon-Cored Fibers as Platform to Build In-Line Schottky Photodetectors. IEEE Photonics Technology Letters, 2021, 33, 317-320.	2.5	7
11	Investigation of Normally-Off p-GaN/AlGaN/GaN HEMTs Using a Self-Terminating Etching Technique with Multi-Finger Architecture Modulation for High Power Application. Micromachines, 2021, 12, 432.	2.9	7
12	Photonic Crystal Structured Multi-Mode VCSELs Enabling 92-Gbit/s QAM-OFDM Transmission. Journal of Lightwave Technology, 2021, 39, 4331-4340.	4.6	6
13	Review of VCSELs for Complex Data-Format Transmission Beyond 100-Gbit/s. IEEE Photonics Journal, 2021, 13, 1-13.	2.0	10
14	850-nm Dual-Mode VCSEL Carried 53-Gbps NRZ- OOK Transmission in 100-m Graded-Index Single-Mode Fiber. , 2021, , .		1
15	Top-gate transistors fabricated on epitaxially grown molybdenum disulfide and graphene hetero-structures. Applied Physics Express, 2021, 14, 125502.	2.4	2
16	High thermal stability of 850 nm VCSELs with enhanced mask margin up to 85 °C for 100G-SR4 Operation. , 2021, , .		3
17	50 Gb/s Zn-diffusion Few-Mode VCSELs for over 100-m GI-SMF Transmission at 850 nm Wavelength. IEEE Nanotechnology Magazine, 2021, , 1-1.	2.0	0
18	Ultra-fast and Highly Efficient 850-nm VCSELs for Next-gen PAM-4 Transceivers. , 2021, , .		1

#	ARTICLE	IF	CITATIONS
19	30 GHz Highly Damped Oxide Confined Vertical-Cavity Surface-Emitting Laser. , 2021, , .		3
20	The Ridge Width Dependence of Monolithic Dual-Mode Distributed Feedback Laser for continuous-wave Terahertz Generation. , 2021, , .		0
21	Comparison of High-Speed PAM4 and QAM-OFDM Data Transmission Using Single-Mode VCSEL in OM5 and OM4 MMF Links. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-10.	2.9	19
22	Comparison on OM5-MMF and OM4-MMF Data Links With 32-GBaud PAM-4 Modulated Few-Mode VCSEL at 850Ånm. Journal of Lightwave Technology, 2020, 38, 573-582.	4.6	7
23	850-nm Single-Mode Vertical-Cavity Surface-Emitting Lasers for 40 Gb/s Error-Free Transmission up to 500 m in OM4 Fiber. IEEE Electron Device Letters, 2020, 41, 84-86.	3.9	7
24	Characteristics of Blue GaN/InGaN Quantum-Well Light-Emitting Transistor. IEEE Electron Device Letters, 2020, 41, 91-94.	3.9	5
25	A Four-Port Model of Light-Emitting Transistors for Circuit Simulation and Application. IEEE Transactions on Electron Devices, 2020, 67, 5572-5580.	3.0	0
26	Temperature and Noise Dependence of Tri-Mode VCSEL Carried 120-Gbit/s QAM-OFDM Data in Back-to-Back and OM5-MMF Links. Journal of Lightwave Technology, 2020, 38, 6746-6758.	4.6	11
27	Highly conductive nanometer-thick gold films grown on molybdenum disulfide surfaces for interconnect applications. Scientific Reports, 2020, 10, 14463.	3.3	8
28	Oxide-confined VCSEL with metal apertures for high-speed 850nm transmission. , 2020, , .		2
29	High $\langle i \rangle_{\text{max}} \langle i \rangle_{\text{L}} \langle i \rangle_{\text{G}}$ Product of AlGaIn/GaN HEMTs on Silicon With Thick Rectangular Gate. IEEE Journal of the Electron Devices Society, 2020, 8, 481-484.	2.1	10
30	Design and Optimization of VCSELs for up to 40-Gb/s Error-Free Transmission Through Impurity-Induced Disorder. IEEE Transactions on Electron Devices, 2020, 67, 1041-1046.	3.0	10
31	Multimode VCSEL Enables 42-GBaud PAM-4 and 35-GBaud 16-QAM OFDM for 100-m OM5 MMF Data Link. IEEE Access, 2020, 8, 36963-36973.	4.2	12
32	A Thermoelectrically Cooled nBn Type-II Superlattices InAs/InAsSb/BaAlAsSb Mid-Wave Infrared Detector. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900522.	1.8	4
33	Application of localization landscape theory and the $\hat{H}$ model for direct modeling of carrier transport in a type II superlattice InAs/InAsSb photoconductor system. Journal of Applied Physics, 2020, 127, .	2.5	16
34	Tungsten Diselenide Top-gate Transistors with Multilayer Antimonene Electrodes: Gate Stacks and Epitaxially Grown 2D Material Heterostructures. Scientific Reports, 2020, 10, 5967.	3.3	4
35	High-speed integrated micro-LED array for visible light communication. Optics Letters, 2020, 45, 2203.	3.3	45
36	Chirp-free optical-signal generation using dual-and-direct current-voltage modulation of transistor lasers. Optics Letters, 2020, 45, 2474.	3.3	2

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37	Investigation of the current influence on near-field and far-field beam patterns for an oxide-confined vertical-cavity surface-emitting laser. Optics Express, 2020, 28, 30748.	3.4	11
38	High Electron Mobility of 1880 cm <sup>2</sup> V-S In <sub>0.17</sub> Al <sub>0.83</sub> N/GaN-on-Si HEMTs with GaN Cap Layer. , 2020, , .		0
39	Cryogenic operation of a high speed 850 nm VCSEL with 40.1 GHz modulation bandwidth at 223 K. , 2020, , .		1
40	Demonstration of the Very Long Wavelength Infrared Type-II Superlattice InAs/InAsSb GaAs Immersed Photodetector Operating at Thermoelectric Cooling. IEEE Electron Device Letters, 2019, 40, 1396-1398.	3.9	14
41	Thermally-enhanced current gain of quantum-well heterojunction bipolar transistor. Journal of Applied Physics, 2019, 126, .	2.5	5
42	12%GHz spontaneous optical bandwidth tunnel junction light-emitting transistor. Applied Physics Letters, 2019, 115, 181102.	3.3	3
43	A NRZ-OOK Modulated 850-nm VCSEL with 54 Gb/s Error-Free Data Transmission. , 2019, , .		4
44	Pulse Compression using Chirp of Transistor Lasers Regardless of Types of Fiber Dispersions. , 2019, , .		1
45	Design, Modeling, and Fabrication of High-Speed VCSEL with Data Rate up to 50 Gb/s. Nanoscale Research Letters, 2019, 14, 276.	5.7	13
46	Thermoelectrically Cooled nBn T2SLs InAs/InAsSb/B-AlAsSb MWIR Detector. , 2019, , .		0
47	Theoretical analysis on optical frequency response of tunnel-junction transistor lasers operated in different configurations. Journal of Applied Physics, 2019, 125, .	2.5	7
48	Long-Term Thermal Stability of Single-Mode VCSEL Under 96-Gbit/s OFDM Transmission. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-9.	2.9	10
49	Threshold Voltage Modulation of Enhancement-Mode InGaAs Schottky-Gate Fin-HEMTs. IEEE Electron Device Letters, 2019, 40, 534-537.	3.9	2
50	Systematic investigation of the threshold voltage modulation of AlGaIn/GaN Schottky-gate Fin-HEMTs. Journal of Applied Physics, 2019, 125, 094502.	2.5	6
51	Effect of border traps on the threshold voltage instability of fluoride-doped AlGaIn/GaN metal-insulator-semiconductor high-electron-mobility transistors. Journal Physics D: Applied Physics, 2019, 52, 195102.	2.8	7
52	Small Signal Modeling of GaN-on-Si HEMT with Leaky Buffer. , 2019, , .		0
53	Investigation on Different Buffer to Suppress the RF-Loss in AlGaIn/GaN-on-Si HEMTs. , 2019, , .		2
54	Simulation Model of Oxide-Aperture Strain Quantum Well VCSEL. , 2019, , .		0

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55	VCSEL with bi-layer oxidized aperture enables 140-Gbit/s OFDM Transmission over 100-m-long OM5 MMF. , 2019, , .		7
56	Pulse compression irrespective of fiber dispersion using chirp of transistor lasers. Optics Letters, 2019, 44, 2109.	3.3	5
57	Experimental analysis of the Schottky barrier height of metal contacts in black phosphorus field-effect transistors. Journal Physics D: Applied Physics, 2018, 51, 135306.	2.8	11
58	Oxide-Confined VCSELs for High-Speed Optical Interconnects. IEEE Journal of Quantum Electronics, 2018, 54, 1-15.	1.9	38
59	Evaluation and Selection of Materials for Particulate Matter MEMS Sensors by Using Hybrid MCDM Methods. Sustainability, 2018, 10, 3451.	3.2	10
60	High Speed Data Transmission under Voltage Modulation of Transistor Lasers. , 2018, , .		1
61	Monolithically Integrated Optical NAND Gate Using Light-Emitting Transistors. , 2018, , .		0
62	50 Gb/s Error-Free Data Transmission Using a NRZ-OOK Modulated 850 nm VCSEL. , 2018, , .		5
63	RC Time Constant and Resistance Reduced VCSEL for Broadband QAM-OFDM. , 2018, , .		0
64	High-Temperature Insensitivity of 50-Gb/s 16-QAM-DMT Transmission by Using the Temperature-Compensated Vertical-Cavity Surface-Emitting Lasers. Journal of Lightwave Technology, 2018, 36, 3332-3343.	4.6	9
65	Single-mode VCSEL for pre-emphasis PAM-4 transmission up to 64 Gbit/s over 100 m in OM4 MMF. Photonics Research, 2018, 6, 666.	7.0	32
66	CWDM DFBLD Transmitter Module for 10-km Interdata Center With Single-Channel 50-Gbit/s PAM-4 and 62-Gbit/s QAM-OFDM. Journal of Lightwave Technology, 2018, 36, 703-711.	4.6	10
67	752-MHz Modulation Bandwidth of High-Speed Blue Micro Light-Emitting Diodes. IEEE Journal of Quantum Electronics, 2018, 54, 1-6.	1.9	32
68	850/940-nm VCSEL for optical communication and 3D sensing. Opto-Electronic Advances, 2018, 1, 18000501-18000511.	13.3	42
69	Single-mode VCSEL for Nearly 100-Gbit/s QAM-OFDM transmission over 100-m OM4 multi-mode fiber. , 2018, , .		1
70	Luminescence Enhancement and Enlarged Dirac Point Shift of MoS <sub>2</sub> /Graphene Hetero-Structure Photodetectors With Postgrowth Annealing Treatment. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 101-105.	2.9	5
71	Investigation of GaN Fin-HEMTs with micron-scale fin width. , 2017, , .		1
72	The Growth Mechanism of Transition Metal Dichalcogenides by using Sulfurization of Pre-deposited Transition Metals and the 2D Crystal Hetero-structure Establishment. Scientific Reports, 2017, 7, 42146.	3.3	46

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73	Dual-cut graphene transistors with constant-current regions fabricated by the atomic force microscope anode oxidation. Japanese Journal of Applied Physics, 2017, 56, 010307.	1.5	0
74	Efficient Heat Dissipation of Uncooled 400-Gbps (16Å–25-Gbps) Optical Transceiver Employing Multimode VCSEL and PD Arrays. Scientific Reports, 2017, 7, 46608.	3.3	13
75	Multi-Mode VCSEL Chip with High-Indium-Density InGaAs/AlGaAs Quantum-Well Pairs for QAM-OFDM in Multi-Mode Fiber. IEEE Journal of Quantum Electronics, 2017, 53, 1-8.	1.9	27
76	Analysis of quantum well optical modulation in light-emitting transistors. , 2017, , .		1
77	Resonance-free optical response of a vertical cavity transistor laser. Applied Physics Letters, 2017, 111, .	3.3	8
78	Proximity effect correction in electron-beam lithography based on computation of critical-development time with swarm intelligence. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2017, 35, .	1.2	14
79	High performance MoS2 TFT using graphene contact first process. AIP Advances, 2017, 7, 085018.	1.3	4
80	A comprehensive model for sub-10 nm electron-beam patterning through the short-time and cold development. Nanotechnology, 2017, 28, 425301.	2.6	4
81	Germanium-doped Metallic Ohmic Contacts in Black Phosphorus Field-Effect Transistors with Ultra-low Contact Resistance. Scientific Reports, 2017, 7, 16857.	3.3	16
82	Investigation of mirror-resistance reduction in the signal transmission integrity of VCSELs. , 2017, , .		0
83	Modal Linewidth Dependent Transmission Performance of 850-nm VCSELs With Encoding PAM-4 Over 100-m MMF. IEEE Journal of Quantum Electronics, 2017, 53, 1-8.	1.9	18
84	Modulate threshold voltage to achieve enhancement mode fin-structured InGaAs high electron mobility transistors (fin-HEMTs) through narrowing fin structure's width. , 2017, , .		0
85	Characterization of blue InGaN/GaN quantum-well heterojunction bipolar light emitting transistors. , 2017, , .		0
86	Comparison of single-/few-/multi-mode 850 nm VCSELs for optical OFDM transmission. Optics Express, 2017, 25, 16347.	3.4	43
87	Few-mode VCSEL chip for 100-Gb/s transmission over 100m multimode fiber. Photonics Research, 2017, 5, 507.	7.0	33
88	Few-Mode 850-nm VCSEL Chip with Direct 16-QAM OFDM Encoding at 80-Gbit/s for 100-m OM4 MMF Link. , 2017, , .		1
89	Theory for voltage modulation of transistor lasers using Franz-Keldysh absorption in the presence of optoelectronic feedback. Optics Express, 2016, 24, 25515.	3.4	15
90	Enhancement-mode AlGaIn/GaN MOS-HEMT on silicon with ultrathin barrier and diluted KOH passivation. , 2016, , .		2

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91	Fabrication and characterization of InGaAs fin structure high electron mobility transistors. , 2016, , .		0
92	High-speed modulation from the fast mode extraction of a photonic crystal light-emitting diode. Journal of Applied Physics, 2016, 119, 013103.	2.5	13
93	Characterization of in-plane gate transistors with different geometries. , 2016, , .		0
94	Reduction of threshold voltage instability in recessed-gate AlGaIn/GaN MOSHEMTs by KOH passivation. , 2016, , .		0
95	Establishment of 2D Crystal Heterostructures by Sulfurization of Sequential Transition Metal Depositions: Preparation, Characterization, and Selective Growth. Nano Letters, 2016, 16, 7093-7097.	9.1	51
96	Developing the OEIC solutions using two section light-emitting transistor. Proceedings of SPIE, 2016, , .	0.8	0
97	The role of optoelectronic feedback on Franz-Keldysh voltage modulation of transistor lasers. , 2016, , .		0
98	RIN Suppressed Multimode 850-nm VCSEL for 56-Gbps 16-QAM OFDM and 22-Gbps PAM-4 Transmission. , 2016, , .		5
99	Cut-off frequency enhancement of light-emitting transistor under illumination. , 2015, , .		0
100	The Effect of Voltage-Dependent Charge-Removing Mechanism on the Optical Modulation Bandwidths of Light-Emitting Transistors. IEEE Transactions on Electron Devices, 2015, 62, 4076-4081.	3.0	2
101	Multilayer MoS <sub>2</sub> prepared by one-time and repeated chemical vapor depositions: anomalous Raman shifts and transistors with high ON/OFF ratio. Journal Physics D: Applied Physics, 2015, 48, 435101.	2.8	17
102	Investigation of Junction Thermal Characteristics of Light-Emitting Transistors. IEEE Transactions on Electron Devices, 2015, 62, 808-812.	3.0	0
103	11- $\hat{1}$ / <sub>4</sub> m InAs/GaAs quantum-dot light-emitting transistors grown by molecular beam epitaxy. Optics Letters, 2015, 40, 3747.	3.3	1
104	Threshold voltage controlled by gate area and gate recess in inverted trapezoidal trigate AlGaIn/GaN MOS high-electron-mobility transistors with photoenhanced chemical and plasma-enhanced atomic layer deposition oxides. Applied Physics Express, 2015, 8, 084101.	2.4	3
105	Analysis of Tunable Internal Loss Caused by Franz-Keldysh Absorption in Transistor Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 270-276.	2.9	11
106	Quantum Well Saturation Effect on the Reduction of Base Transit Time in Light-Emitting Transistors. IEEE Transactions on Electron Devices, 2014, 61, 3472-3476.	3.0	3
107	Investigation of effective base transit time and current gain modulation of light-emitting transistors under different ambient temperatures. Applied Physics Letters, 2014, 105, .	3.3	2
108	Analysis of different tunneling mechanisms of In <sub>x</sub> Ga <sub>1-x</sub> As/AlGaAs tunnel junction light-emitting transistors. Applied Physics Letters, 2014, 105, 171104.	3.3	3

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109	Optical frequency response analysis of light-emitting transistors under different microwave configurations. Applied Physics Letters, 2013, 103, .	3.3	8
110	Microwave Determination of Quantum-Well Capture and Escape Time in Light-Emitting Transistors. IEEE Transactions on Electron Devices, 2013, 60, 1088-1091.	3.0	7
111	The effect of aperture layout design on the multi-GHz operation of light-emitting transistors. , 2012, , .		0
112	The effect of microcavity laser recombination lifetime on microwave bandwidth and eye-diagram signal integrity. Journal of Applied Physics, 2011, 109, .	2.5	35
113	Energy efficient microcavity lasers with 20 and 40 Gb/s data transmission. Applied Physics Letters, 2011, 98, 191107.	3.3	29
114	Microwave determination of electron-hole recombination dynamics from spontaneous to stimulated emission in a quantum-well microcavity laser. Applied Physics Letters, 2010, 96, 131108.	3.3	8
115	The effect of mode spacing on the speed of quantum-well microcavity lasers. Applied Physics Letters, 2010, 97, .	3.3	14
116	Microwave characterization of Purcell enhancement in a microcavity laser. Applied Physics Letters, 2010, 96, 131107.	3.3	8
117	Stochastic base doping and quantum-well enhancement of recombination in an n-p-n light-emitting transistor or transistor laser. Applied Physics Letters, 2010, 96, 263505.	3.3	4
118	Electrical-optical signal mixing and multiplication ( $2 \times 22$ GHz) with a tunnel junction transistor laser. Applied Physics Letters, 2009, 94, .	3.3	29
119	4-GHz Modulation Bandwidth of Integrated $2 \times 2$ LED Array. IEEE Photonics Technology Letters, 2009, 21, 1834-1836.	2.5	5
120	Tilted-charge high speed (7 GHz) light emitting diode. Applied Physics Letters, 2009, 94, .	3.3	43
121	Tunnel junction transistor laser. Applied Physics Letters, 2009, 94, .	3.3	45
122	Scaling of light emitting transistor for multigigahertz optical bandwidth. Applied Physics Letters, 2009, 94, .	3.3	24
123	4.3 GHz optical bandwidth light emitting transistor. Applied Physics Letters, 2009, 94, .	3.3	46
124	Experimental determination of the effective minority carrier lifetime in the operation of a quantum-well n-p-n heterojunction bipolar light-emitting transistor of varying base quantum-well design and doping. Applied Physics Letters, 2007, 91, .	3.3	28
125	Modulation of high current gain ( $\beta > 49$ ) light-emitting InGa $\tilde{N}$ -Ga $\tilde{N}$ heterojunction bipolar transistors. Applied Physics Letters, 2007, 91, 232114.	3.3	15
126	Broad-Gain Measurement of Semiconductor Optical Amplifier with Nonidentical Multiple Quantum Wells. Japanese Journal of Applied Physics, 2006, 45, L259-L261.	1.5	0



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127	Wavelength switching and light modulation in laser diodes with nonidentical multiple quantum wells. , 2005, , .		0
128	Influence of Separate Confinement Heterostructure on Emission Bandwidth of InGaAsP Superluminescent Diodes/Semiconductor Optical Amplifiers With Nonidentical Multiple Quantum Wells. IEEE Photonics Technology Letters, 2004, 16, 1441-1443.	2.5	19
129	Influence of Separate Confinement Heterostructure Layer on Carrier Distribution in InGaAsP Laser Diodes with Nonidentical Multiple Quantum Wells. Japanese Journal of Applied Physics, 2004, 43, 7032-7035.	1.5	1
130	Improved temperature characteristics of laser diodes with nonidentical multiple quantum wells due to temperature-induced carrier redistribution. Applied Physics Letters, 2003, 82, 3403-3405.	3.3	7
131	Improved temperature characteristics of semiconductor lasers due to carrier redistribution among nonidentical multiple quantum wells. , 2003, , .		0
132	Improved temperature characteristics of semiconductor lasers due to carrier redistribution among nonidentical multiple quantum wells. , 0, , .		0
133	Gain measurement of broadband quantum dot SOA by two-section technique. , 0, , .		0
134	Regional Pulsewidth and Delay Nonuniformity of Modulated 940nm Vertical-Cavity Surface-Emitting Laser Array. Advanced Photonics Research, 0, , 2100133.	3.6	0