

Publication List

International Invited Talks and Seminars

1. S. H. Yu, P. Y. Huang, C. H. Lin, **C. T. Lin***, C. C. Wei, and S. Chi “Broadband Wired and Wireless Access System with Novel Sub-Nyquist Sampling-Rate ADC Receiver,” *The 25th OptoElectronics and Communications Conference (OECC 2020)*, T2-4.1, Taipei, Taiwan, 4-8 Oct. 2020. (Invited Speaker)

Invited Journal Papers

1. C. C. Wei, F. M. Wu, Z. Y. Chen, **C. T. Lin**, Y. S. Huang, Y. J. (Ray) Chen, and S. Chi, “Indoor VLC System with Multiple LEDs of Different Path Lengths Employing Space-Time Block-Coded DMT/CAP Modulation,” *IEEE Journal of Optical Communications and Networking*, VOL. 7, NO. 3, A459-A466, MARCH 2015 [Invited]
2. **C. T. Lin***, J. Chen, P. T. Shih, W. J. Jiang, and S. Chi, “ Ultra-high Data-rate 60 GHz Radio-over-Fiber Systems Employing Optical Frequency Multiplication and OFDM Formats,” *IEEE/OSA Journal of Lightwave Technology*, vol. 28, No. 16, pp. 2296-2306, August 15, 2010. (Invited Paper)

International journal Papers (SCI journal paper)

1. Y. J. Huang, G. T. Lin, C. C. Wei, S. Chi, and **C. T. Lin***, “Time Synchronization Error Compensation by Volterra Filter for Delay-Division-Multiplexing Fronthaul Link,” Accepted by *Optics Express*.
2. Y. J. Huang, G. T. Lin, P. H. Ting , C. C. Wei , S. Chi, and **C. T. Lin***, “Analog Mobile Fronthaul Supporting 128 RF Chain With Nonlinear Compensator for B5G and 6G Ma-MIMO Beamforming,” *IEEE/OSA Journal of Lightwave Technology*, vol. 40, No.20, pp. 6867-6874, Oct. 15 2022.
3. C. C. Wei, Z. X. Xie, P. H. Ting , Z. W. Huang , and **C. T. Lin***, “3×3 MIMO 60-GHz OFDM-RoF System With Long-Distance Wireless Transmission Enabled by MIMO Volterra Filtering,” *IEEE/OSA Journal of Lightwave Technology*, vol. 40, No.20, pp. 6860-6866, Oct. 15 2022.
4. P. H. Wu, Y. P. Lan, C. L. Chou, **C. T. Lin***, "Fast Infrared Small Target Detection by Using Hadamard Product for Spatial-Temporal Matrices", *IEEE Access*, vol.10, pp.116830-116843, 2022.
5. P. H. Ting, S. H. Yu, Z. W. Huang, C. C. Wei, S. Chi, **C. T. Lin***,” Fronthaul Optical Links Using Sub-Nyquist Sampling Rate ADC for B5G/6G Sub-THz Ma-MIMO Beamforming,” *IEEE Access*, volume 10, pp. 236-243, 2022.
6. P. Y. Huang, P. H. Ting, Y. J. Huang, C. C. Wei, **C. T. Lin***, “Mitigation of Optical Carrier Power Fading in 3× 3 MIMO V-Band Direct-Detection OFDM RoFMF System,” *IEEE Photonics Technology Letters*, vol. 33, No. 22, pp. 1246-1249, 2021.

7. T. H. Hsieh, C. L. Chou, Y. P. Lan, P. H. Ting, **C. T. Lin***, “Fast and robust infrared image small target detection based on the convolution of layered gradient kernel,” *IEEE Access*, vol. 9, pp. 94889-94900, 2021.
8. C. H. Tseng, **C. T. Lin**, and S. K. Hwang*, “V- and W-band Microwave Generation and Modulation Using Optically Injected Semiconductor Lasers at Period-One Nonlinear Dynamics,” *Optics Letters*, vol. 45, No.24, pp. 6819-6822, Dec. 2020.
9. C. T. Tsai, C. C. Li, C. W. Chen, Y. C. Chi, **C. T. Lin**, S. Chi, G. R. Lin*, “Incoherent Laser Heterodyned Long-Reach 60-GHz MMWoF Link with Volterra Filtered 16-QAM OFDM beyond 13 Gbps,” *IEEE Journal of Selected Topics in Quantum Electronics Letters*, vol. 27, No. 2, pp. 7600211, MARCH/APRIL 2021.
10. W. H. Chen, **C. T. Lin***, C. C. Wei, and S. Chi, “58.74-Gbps 2x2 MIMO 60-GHz Optical/Wireless System with Simple Power-Detector Down-Conversion,” *IEEE Photonics Technology Letters*, vol. 31, Issue. 11, pp. 897-900, June 1, 2019.
11. C. T. Tsai, C. C. Li, C. H. Lin, **C. T. Lin**, Sien Chi, and G. R. Lin*, “Long-reach 60-GHz MMWoF link with free-running laser diodes beating,” *Scientific Reports*, Vol. 8, No. 13711, pp. 1-14, Sep. 2018.
12. C. H. Lin, R. Fang, **C. T. Lin***, C. C. Wei, and S. Chi, “43.63-Gbit/s Multiple-User SC-FDMA PON With Sub-Nyquist Receiver and PAPR Reduction,” *IEEE Photonics Technology Letters*, vol. 30, No. 19, pp. 1663-1666, Sep.3, 2018.
13. J. H. Hsu, M. Yu, F. Liu, C. H. Lin, **C. T. Lin**, L. Zhou, L. Fang, and C. C. Wei, “On channel estimation schemes for APD-based DDM-OFDM-PONs under sub-Nyquist sampling,” *OSA Optics Express*, Vol. 26, No. 23, pp. 23808-23818, Aug. 30, 2018.
14. H. T. Huang, C. S. Sun, **C. T. Lin***, C. C. Wei, W. S. Zeng, H. Y. Chang, Boris (P. T.) Shih**, and A. Ng'oma, “Direct-Detection PDM-OFDM RoF System for 60-GHz Wireless MIMO transmission without Polarization Tracking,” *IEEE/OSA Journal of Lightwave Technology*, vol. 36, No.17, pp. 3739-3745, Sep. 1 2018.
15. J. H. Hsu, Min Yu, C. C. Wei, Chi-Hsiang Lin, **C. T. Lin**, F. Liu, L. Zhou, and L. Fang, “Employing Hybrid sub-Nyquist Sampling Rates to Support Heterogeneous Services of Varying Capacity in 25-Gbps DDM-OFDM-PON,” *IEEE Photonics Journal*, Volume: 10, Issue 2, April 2018.

International Conferences Presentations

1. Shih-Chien Lin, Wei-Che Chang, Yu-Jen Huang, Chia-Chien Wei, Sien Chi and **Chun-Ting Lin***, "Time Synchronization Error Compensation by for Delay-Division-Multiplexing 14-GHz Bandwidth 128 RF-chain Fronthaul Link w/o DDM Deaggregation Synchronization", OSA Advanced Photonics Congress 2023, Busan, South Korea, 2023
2. C. C. Wei, Y. J. Huang, Z. X. Xie, P. Y. Huang, P. H. Ting, **C. T. Lin***,” > 100 Gbps 3× 3 MIMO V-Band RoF System for up to 100 m Wireless Transmission Enabled by NN-based Equalization,” Optical Fiber Communication Conference (OFC 2022), W4C. 3, San Diego, California, March, 6-10, 2022.
3. Y. J. Cai, S. H. Yu, Z. W. Huang, Y. W. Wang, P. H. Ting, Y. P. Lan, C. J. Fang, H. C. Lin, B. C. Chen, **C. T. Lin***.” 10 Gbps Laser Communication for Low Earth Orbit Satellites with Volterra and Machine Learning Nonlinear Compensation Providing Link Budget up to 74 dB,” 2022 Optical Fiber Communication Conference (OFC 2022), M1C. 2, San Diego, California, March, 6-10, 2022.
4. Y. J. Huang, G. T. Lin, P. H. Ting, Z. W. Huang, S. H. Yu, Y. J. Cai, C. C. Wei, S. Chi, **C. T. Lin***,” Mobile 14-GHz Bandwidth Fronthaul Link Supporting 128 RF-Chain Signals for 6G Ma-MIMO Beamforming,” 2022 Optical Fiber Communication Conference (OFC 2022), M1C. 5, San Diego, California, March, 6-10, 2022.

5. Chin-Hao Tseng, Chun-Ting Lin, and Sheng-Kwang Hwang*, “12-Gb/s Sub-THz Wireless-over-Fiber Links Using Optically Injected Semiconductor Lasers,” The 26th OptoElectronics and Communications Conference (OECC 2021), T3D.5, Hong Kong, July 3-7, 2021.
6. P. Y. Huang, Z. X. Xie, T. H. Hsieh, S. H. Yu, C. C. Wei, S. Chi, C. T. Lin*, “3×3 MIMO 60-GHz Direct-Detection OFDM RoF System with Mitigation of Optical Carrier Power Fading,” 2021 Optical Fiber Communication Conference (OFC 2021), Tu6E.3, all-virtual format, 06-11 June 2021.
7. P. H. Ting, S. H. Yu, Z. W. Huang, C. C. Wei, S. Chi, C. T. Lin, “Fronthaul Optical Links Implemented by Using Sub-Nyquist Sampling Rate ADC for B5G/6G Sub-THz Ma-MIMO Beamforming,” 2021 Optical Fiber Communication Conference (OFC 2021), M3J.5, all-virtual format, 06-11 June 2021.
8. S. H. Yu, P. Y. Huang, C. H. Lin, C. T. Lin*, C. C. Wei, and S. Chi “Broadband Wired and Wireless Access System with Novel Sub-Nyquist Sampling-Rate ADC Receiver,” *The 25th OptoElectronics and Communications Conference (OECC 2020)*, T2-4.1, Taipei, Taiwan, 4-8 Oct. 2020. (Invited Speaker)
9. Cheng-Ting Tsai, Chien-Cheng Li, Chao-Wei Chen, Chun-Ting Lin, Chih-Hsien Cheng, Sien Chi, and Gong-Ru Lin*, “81.37-Gbps 2×2 MIMO 60-GHz OFDM-RoF System Employing I/Q Nonlinear Compensation Filtering Algorithm,” Conference on Lasers and Electro-Optics 2020 (CLEO 2020), STu4L.2, San Jose, California, May 15-20 May 2022.
10. Z. X. Xie, B. J. Lin, P. X. Ding, T. H. Tsai, P. Y. Huang, C. C. Wei, and C. T. Lin*, “81.37-Gbps 2×2 MIMO 60-GHz OFDM-RoF System Employing I/Q Nonlinear Compensation Filtering Algorithm,” 2020 Optical Fiber Communication Conference (OFC 2020), W2A.38, San Diego, California, March, 7-12, 2020.
11. P. Y. Huang, W. L. Li, T. H. Tsai, Z. X. Xie, and C. T. Lin*, “52.58-Gbps Fiber-Wireless 60-GHz 2×2 MIMO System Integrating Optical Mode Division Multiplexing and Wireless MIMO,” 2020 Optical Fiber Communication Conference (OFC 2020), W2A.39, San Diego, California, March, 7-12, 2020.
12. W. L. Chen, M. Yu, L. Y. Yang, C. C. Wei, and C. T. Lin, “Low-Bandwidth Sub-Nyquist A/D Conversion in Delay-Division Multiplexing OFDM PONs Enabled by Optical Shaping,” 2020 Optical Fiber Communication Conference (OFC 2020), Th1B.7, San Diego, California, March, 7-12, 2020.
13. M. Yu, F. Liu, W. L. Chen, C. T. Lin*, L. Zhou, L. Fang, and C. C. Wei, “Simple Down-Conversion by Power Detector in a 2x2 MIMO V-Band Optical/Wireless System with Mitigation of Beating Interference,” 24th OptoElectronics and Communications Conference (OECC 2019), C000269, Fukuoka, Japan, July, 7-11, 2019.
14. M. Yu, F. Liu, W. L. Chen, C. T. Lin, L. Zhou, L. Fang, and C. C. Wei, “Novel Time Synchronization Scheme in Delay-Division-Multiplexing OFDM-PON Using Sub-Nyquist Sampling,” 2019 Optical Fiber Communication Conference (OFC 2019), W2A.27, San Diego, California, March, 3-7, 2019.
15. Chiao-Wei Chen, Hao-Hsiang Chang, Wen-Huang Chen, Chien-Cheng Li, Chi-Hsiang Lin, Chun-Ting Lin*, Chia-Chien Wei, and Sien Chi, “Hybrid Optical Wired/Coherent-Wireless OFDM Access Networks with Baseband Signal Modulation and Envelop-Detection Down-Conversion,” 2018 Conference on Lasers and Electro-Optics/Pacific Rim Conference (CLEO-PR 2018), W2I.4, Hong Kong, China, July 29- August 3, 2018.
16. Hao-Hsiang Chang, Wen-Huang Chen, Chun-Ting Lin*, “Multiple-User SC-FDMA System

with Sub-Nyquist Receiver and PAPR Reduction,” 2018 Conference on Lasers and Electro-Optics/Pacific Rim Conference (CLEO-PR 2018), Th3I.6, Hong Kong, China, July 29-August 3, 2018.

17. Hao-Hsiang Chang, Chi-Hsiang Lin, Ruei Fang, ***Chun-Ting Lin****, Chia-Chien Wei, and Sien Chi, “43.63-Gbit/s Multiple-User SC-FDMA PON with sub-Nyquist Receiver and PAPR Reduction,” 2018 27th Wireless and Optical Communication Conference (WOCC2018), 8372740, Hualien, Taiwan, 30 April-1 May 2018. (**Best Paper Award**)
18. Hao-Hsiang Chang, Min Yu, Chia-Chien Wei, Chi-Hsiang Lin, ***Chun-Ting Lin****, Fumin Liu, Lei Zhou, Liming Fang “APD-based delay-division-multiplexing OFDM-PONs,” 2018 27th Wireless and Optical Communication Conference (WOCC2018), 8372740, Hualien, Taiwan, 30 April-1 May 2018.
19. J. H. Hsu, M. Yu, C. C. Wei, C. H. Lin, ***C. T. Lin***, F. Liu, L. Zhou, and L. Fang, “Novel DDM-OFDM-PON with Hybrid Sub-Nyquist Sampling Rates Featuring Heterogeneous ONUs with Different Capacities,” 2018 Optical Fiber Communication Conference (OFC 2018), W4G.5, San Diego, California, March, 11-15, 2018.
20. C. H. Lin, ***C. T. Lin****, C. C. Wei, S. Chi, and R. Fang, “Simplified 27.15 Gbits/s Spread-OFDM PON using DFT/IDFT-free Receiver with 1/16 Sub-Nyquist Sampling Rate,” 2017 Optical Fiber Communication Conference (OFC 2017), W1K.2, Los Angeles, California, March, 21-23, 2017.
21. Y. L. Huang, C. C. Wei, ***C. T. Lin****, and C. H. Lin, “Novel Detection in V-band MIMO OFDM RoF Systems Using ADCs with Sub-Nyquist Sampling,” 2017 Optical Fiber Communication Conference (OFC 2017), Tu2F.4, Los Angeles, California, March, 21-23, 2017.
22. ***C. T. Lin****, “Ultra-High Data-rate (> 10Gbps) Optical/Wireless Systems,” The 25 Wireless and Optical Communication Conference, Invited Talk of Photonics Forum of Chiao-Tung Universities, Chengdu, China, May 21-23, 2016.

Domestic Conferences Presentations

1. Yu-Jen Huang; Ping-Yao Huang; Zhen-Xiong Xie; Tung-Han Hsieh; Shao-Hung Yu; Chia-Chien Wei; Sien Chi; ***Chun-Ting Lin***,” Mitigation of Optical Carrier Power Fading for 3×3 MIMO 60-GHz Direct-Detection OFDM RoFMF System,” 2020 Optic & Photonic Taiwan, International Conference, 2021-FRI-P0201-P001, Taipei City, Taiwan (OPTIC 2021).
2. Guan-Ting Lin; Pin-Hsuan Ting; Shao-Hung Yu; Zheng-Wei Huang; ***Chun-Ting Lin***,” Novel B5G/6G Sub-THz Beamforming Scheme with Sub-Nyquist Sampling Rate ADC in Ma-MIMO System,” 2021-SAT-P0202-P009, Taipei City, Taiwan (OPTIC 2021).
3. Shao-Hung Yu, Yi Jun Cai, Hao-Hsiang Chang, ***Chun-Ting Lin***, Chia Chien Wei, Sien Chi “Novel DFT/IDFT-free scheme for Spread OFDM signals with sub-Nyquist sampling ADCs in MIMO RoF system” 2020 Optic & Photonic Taiwan, International Conference, 2020-FRI-P0201-P003, Taipei City, Taiwan (OPTIC 2020).
4. Zheng-Wei Huang, Zhen-Xiong Xie, Bo-Jiun Lin, Pin-Xyuan Ding, Chia-Chien Wei, and ***Chun-Ting Lin*** “V-band 2×2 MIMO OFDM-RoF System Employing I/Q Volterra Compensation Algorithm” 2020 Optic & Photonic Taiwan, International Conference,

2020-FRI-P0201-P007, Taipei City, Taiwan (OPTIC 2020)

5. Zhen-Xiong Xie, Yi-Chih Wang, Ping-Yau Huang, Chun-Ting Lin, and Chia-Chien Wei, "Hybrid Precoding Design for Two-Carriers Transmission in Massive MIMO System," 2019 Optic & Photonic Taiwan, International Conference, 2019-SAT-P0202-P005, Taichung City, Taiwan (OPTIC 2019).
6. Ping-Yao Huang, Cheng-Xi Li, Zhen-Xiong Xie, Hao-Hsiang Chang, Chun-Ting Lin, Chia Chien Wei, and Sien Chi, "50-Gbps Multiple-User TI-FDMA 60-GHz 2x2 MIMO Optical/Wireless System with Sub-Nyquist Receiver and PAPR Reduction," 2019 Optic & Photonic Taiwan, International Conference, 2019-SAT-S0204-O004, Taichung City, Taiwan (OPTIC 2019).
7. Cheng-Hong Zhuo, Wen-Huang Chen, **Chun-Ting Lin**, "58.74-Gbps 2x2 MIMO V-Band Optical/Wireless System with Simple Down-Conversion by Power Detector and Beating Interference Mitigation," 2018 Optic & Photonic Taiwan, International Conference, 2018-THU-S0201-O003, Tainan, Taiwan(OPTIC18).
8. Tsung-Hung Tsai, Wei-Ling Li, **Chun-Ting Lin**, "52.58-Gbps Fiber-Wireless 60GHz 2x2 MIMO System Using Mode Division Multiplexing," 2018 Optic & Photonic Taiwan, International Conference, 2018-THU-S0202-O003, Tainan, Taiwan(OPTIC18).
9. Yi-Chih Wang, Chi-Hsiang Lin and **Chun-Ting Lin**, "DFT/IDFT-free Receiving Scheme for Spread-OFDM Signals Employing Low-sampling-rate ADCs," 2017 Optic & Photonic Taiwan, International Conference, 2017-FRI-S0204-O006, Kaohsiung, Taiwan(OPTIC17).
10. Pei-Xian Xu, Rwei Fang and **Chun-Ting Lin**, "Multiple-user SC-FDMA System with Sub-Nyquist Receiver and PAPR Reduction," 2017 Optic & Photonic Taiwan, International Conference, 2017-FRI-S0207-O006, Kaohsiung, Taiwan(OPTIC17).
11. Chao-Wei Chen, Hou-Tzu Huang and **Chun-Ting Lin**, "Power Efficiency Enhancement of I/Q Imbalance mmW RoF Systems Employing Volterra-based Algorithm Power," 2017 Optic & Photonic Taiwan, International Conference, 2017-THU-S0201-O004, Kaohsiung, Taiwan(OPTIC17).
12. Wen-Huang Chen, **Chun-Ting Lin** and Che-Hao Li, "Simple Down-conversion by Power Detection in a V-band RoF System with Mitigation of Beating Interference," 2017 Optic & Photonic Taiwan, International Conference, 2017-THU-P0201-P012, Kaohsiung, Taiwan(OPTIC17).

Patents

1. Sputter deposition of lithium phosphorous oxynitride material, US Patent No. 6,863,699, (2005/03/08)
2. Rechargeable battery having permeable anode current collector, US Patent No. 6,713,987, (2004/03/30)
3. Modulation device for generating optical signal with quadruple frequency and method thereof, US Patent No. 8,059,968 (2011/11/15)(2008/5/6 ~ 2030/5/14)
4. Adjustable optical signal delay module and method thereof, US Patent No. 8,059,335 (2011/11/15)(2008/12/16 ~ 2029/10/13)
5. 產生倍頻光訊號之光電調變裝置及其調變方法, Taiwan Patent No.I363921 (2012/05/11~2028/02/21)

6. A frequency doubling technique for radio-over-fiber system, US Patent (pending)
7. Hybrid optical access network providing wired and wireless services, US Patent (pending)
8. Optical amplifier with tunable time of optical signal , US Patent (pending)
9. Optical Modulation Device , US Patent No. 8,301,034 (2012/10/30)(2009/9/25 ~ 2031/1/23)
10. System and Method for Transmitting Signals, US Patent No. 8,306,434 (2012/11/06)
11. Frequency Up-Conversion System and Method for The Same, US Patent, No. 8,311,415 B2, Nov. 13, 2012.
12. Optical modulating device with frequency multiplying technique for electrical signals , US Patent No. 8,184,988 (2012/05/22)(2009/4/2 ~ 2030/9/5)
13. Optical access system for dual service network , US Patent No. 8,428,471 (2013/04/23)(2009/8/17 ~ 2031/11/23)
14. 倍頻電訊號之光電調變裝置, Taiwan Patent No. I396033 (2013/5/11 ~ 2028/11/6)
15. 雙重服務之光纖擷取系統, Taiwan Patent No. I382684 (2013/1/11 ~ 2028/11/6)
16. 調整光訊號傳輸時間之光放大器, Taiwan Patent No. I365309 (2012/6/1 ~ 2028/3/10)
17. 可調光訊號延遲模組及方法, Taiwan Patent No. I375823 (2012/11/1 ~ 2028/9/18)
18. 光調變裝置, Taiwan Patent No. I400498 (2013/7/1 ~ 2028/10/27)
19. 訊號傳送系統及方法, Taiwan Patent (公開編號:201125300)
20. 升頻系統及方法, Taiwan Patent (公開編號:201125299)

Award

1. 2018 Optics & Photonics Taiwan, the International Conference (OPTIC18), **MDPI Photonics Research Excellence Award**

Tsung-Hung Tsai, Wei-Ling Li, **Chun-Ting Lin**, “52.58-Gbps Fiber-Wireless 60GHz 2×2 MIMO System Using Mode Division Multiplexing,” 2018 Optic & Photonic Taiwan, International Conference, 2018-THU-S0202-O003, Tainan, Taiwan(OPTIC18).

2. 2018 27th Wireless and Optical Communication Conference (WOCC) 學生論文獎

Hao-Hsiang Chang, Chi-Hsiang Lin, **Chun-Ting Lin**, “43.63-Gbit/s Multiple-User SC-FDMA PON with sub-Nyquist Receiver and PAPR Reduction,” 2018 27th Wireless and Optical Communication Conference (WOCC2018), 8372740, Hualien, Taiwan, 30 April-1 May 2018.

3. 2014 OFC Outstanding Student Paper Competition, top 6 of 341.

H. T. Huang, W. L. Liang, C. C. Wei, **C. T. Lin***, and Sien Chi, “150-km 103-GHz Direct-Detection OFDM-RoF System Employing Pilot-aided Phase Noise Suppression,” 2014 Optical Fiber Communication Conference (OFC 2014), M2D.6, San Francisco, California 9-13, 2014.