

Chronicle list of selected publications of [Chia-Wei Sun](#) (*corresponding author)
Dec. 2025.

1. [Chia-Wei Sun](#), Chih-Yu Wang, C. C. Yang, Yean-Woei Kiang, I-Jen Hsu, and Chii-Wann Lin, "Polarization gating in ultrafast-optics imaging of skeletal muscle tissues," *Optics Letters*, Vol. 26, No. 7, pp. 432-434, 2001.
2. [Chia-Wei Sun](#), Chih-Yu Wang, C. C. Yang, Yean-Woei Kiang, and Chii-Wann Lin, "Polarization dependent characteristics and polarization gating in time-resolved optical imaging of skeletal muscle tissues," *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 7, No. 6, pp. 924-930, 2001.
3. [Chia-Wei Sun](#), C. C. Yang, and Yean-Woei Kiang, "Ultrafast optics imaging based on polarization-discrimination techniques in filamentous tissues," *Biomedical Engineering – Applications, Basis, and Communications*, Vol. 14, No. 6, pp. 237-242, 2002. **(Invited)**
4. [Chia-Wei Sun](#), Long-Sheng Lu, C. C. Yang, Yean-Woei Kiang, and Ming-Jai Su, "Myocardial tissue characterization based on the time-resolved Stokes-Mueller formalism," *Optics Express*, Vol. 10, No. 23, pp. 1347-1353, 2002.
5. Hsiang-Shi Wang, [Chia-Wei Sun](#), Yean-Woei Kiang, and C. C. Yang, "Depth determination of a scattering target in a turbid medium with polarization discrimination of transmitted signals," *Optics Letters*, Vol. 28, No. 1, pp. 25-27, 2003.
6. I-Jen Hsu, [Chia-Wei Sun](#), Chih-Wei Lu, C. C. Yang, Chun-Pin Chiang, Chii-Wann Lin, "Improvement of longitudinal resolution of optical coherence tomography with dispersion compensation and a signal process algorithm," *Applied Optics*, Vol. 42, No. 2, pp. 227-234, 2003.
7. [Chia-Wei Sun](#), C. C. Yang and Yean-Woei Kiang, "Optical imaging based on time-resolved Stokes vector in filamentous tissues," *Applied Optics*, Vol. 42, No. 4, pp. 750-754, 2003.
8. Xueding Wang, Lihong V. Wang, [Chia-Wei Sun](#), and C. C. Yang, "Polarized Light Propagation Through Scattering Media: Time-resolved Monte Carlo simulations and experiments," *Journal of Biomedical Optics*, Vol. 8, No.4, pp. 608-617, 2003.
9. [Chia-Wei Sun](#), Kuei-Chao Liu, Yih-Ming Wang, Hsiang-Shi Wang, Yean-Woei Kiang, Hua-Kuang Liu and C. C. Yang, "Determination of target depth in a turbid medium with transmitted signal polarization measurements," *Journal of the Optical Society of America A*, Vol. 20, No. 11, pp. 2106-2112, 2003.
10. I-Jen Hsu, [Chia-Wei Sun](#), Chih-Wei Lu, C. C. Yang, Chun-Ping Chiang, and Chii-Wann Lin, "Process algorithms for resolution improvement and contrast enhancement in optical coherence tomography," *Optical Review*, Vol. 10, No. 6, pp. 567-571, 2003.
11. [Chia-Wei Sun](#), Yih-Ming Wang, C. C. Yang, Yean-Woei Kiang, Long-Sheng Lu, and Min-Jai Su, "Optical imaging and tissue characterization with polarization discrimination of time-gated signals," *Optical Review*, Vol. 10, No. 5, pp. 488-492, 2003.
12. Yih-Ming Wang, [Chia-Wei Sun](#), Cheng-Kuan Lee, Chih-Wei Lu, Meng-Tsai, Yean-Woei Kiang, and C. C. Yang, "Comparisons of optical scattering properties between biological tissues and a phantom with time, aperture, and angle gating," *Optics Express*, Vol. 12, No. 6, pp. 1157-1168, 2004.
13. Cheng-Kuang Lee, [Chia-Wei Sun](#)*, Po-Lei Lee, Hsiang-Chieh Lee, C.

- C. Yang, Cho-Pei Jiang, Yuh-Ping Tong, Tzu-Chen Yeh, and Jen-Chuen Hsieh, "Study of photon migration with various source-detector separations in near-infrared spectroscopic brain imaging based on three-dimensional Monte Carlo modeling," *Optics Express*, Vol. 13, No. 21, pp. 8339-8348, 2005.
14. Meng-Tsan Tsai, I-Jen Hsu, Chih-Wei Lu, Yih-Ming Wang, [Chia-Wei Sun](#), Yean-Woei Kiang and C. C. Yang, "Dispersion compensation in optical coherence tomography with a prism in a rapid-scanning optical delay line," *Optical and Quantum Electronics - Special Issue on Biophotonics*, Vol. 37, No. 13-15, pp. 1199-1212, 2006.
 15. Long-Sheng Lu, Yen-Bin Liu, [Chia-Wei Sun](#), Lung-Chun Lin, Chau-Chung Wu, and Ming-Jai Su, "Optical mapping of myocardial reactive oxygen species production throughout the reperfusion of global ischemia," *Journal of Biomedical Optics*, Vol. 11, No. 2, 021012, 2006.
 16. [Chia-Wei Sun](#), Yih-Ming Wang, Long-Sheng Lu, Chih-Wei Lu, I-Jen Hsu, C. C. Yang, Yean-Woei Kiang, and Chau-Chung Wu, "Myocardial tissue imaging and characterization based on a polarization-sensitive optical coherence tomography system with an ultra-short pulsed laser," *Journal of Biomedical Optics*, Vol. 11, No. 5, 054016, 2006.
 17. Jui-che Tsai, Chun-Yi Yin, [Chia-Wei Sun](#), and Ming C. Wu, "Analysis of the Inter-Channel Response in a MEMS $1 \times N^2$ Wavelength-Selective Switch (WSS)," *Applied Optics*, Vol. 46, No. 16, pp. 3227, 2007.
 18. Chau-Chung Wu, Yih-Ming Wang, Long-Sheng Lu, [Chia-Wei Sun](#), Chih-Wei Lu, Meng-Tsan Tsai, and C. C. Yang, "Tissue birefringence of the hypercholesterolemic rat liver measured with polarization-sensitive optical coherence tomography," *Journal of Biomedical Optics*, Vol. 12, No. 6, 064022, 2007.
 19. Jui-che Tsai, Li-Cheng Lu, Wei-Chi Hsu, [Chia-Wei Sun](#) and Ming C. Wu, "Linearization of a two-axis MEMS scanner driven by vertical comb-drive actuators," *Journal of Micromechanics and Microengineering*, Vol. 18, No. 1, 015015, 2008.
 20. Jui-che Tsai, Sheng-jie Chiou, Tien-liang Hsieh, [Chia-Wei Sun](#), Dooyoung Hah and Ming C Wu, "Two-axis MEMS scanners with radial vertical combdrive actuators – design, theoretical analysis, and fabrication," *Journal of Optics A: Pure and Applied Optics*, Vol. 10, 044006, 2008.
 21. Po-Lei Lee, Li-Zen Shang, Yu-Te Wu, Chih-Hung Shu, Jen-Chuen Hsieh, Yung-Yang Lin, Chi-Hsun Wu, Yu-Lu Liu, Chia-Yen Yang, [Chia-Wei Sun](#) and Kuo-Kai Shyu, "Single-trial analysis of cortical oscillatory activities during voluntary movements using empirical mode decomposition (EMD) – based spatiotemporal approach," *Annals of Biomedical Engineering*, Vol. 37, No. 8, pp. 1683-1700, 2009.
 22. Po-Lei Lee, Jyun-Jie Sie, Chi-Hsun Wu, Yu-Ju Liu, Ming-Huan Lee, Chih-Hung Shu, Po-Hung Li, [Chia-Wei Sun](#), Kuo-Kai Shyu, "An SSVEP-actuated brain computer interface using phase-tagged flickering sequences: a cursor system," *Annals of Biomedical Engineering*, Vol. 38, No. 7, pp. 2383-2397, DOI: 10.1007/s10439-010-9964-y, 2010.
 23. Chi-Hsun Wu, Hsiang-Chih Chang, Po-Lei Lee, Kuen-Shing Li, Jyun-Jie Sie, [Chia-Wei Sun](#), Chia-Yen Yang, Po-Hung Li, Hua-Ting Deng, and Kuo-Kai Shyu, "Frequency recognition in an SSVEP-based brain computer interface using empirical mode decomposition and refined generalized

- zero-crossing," *Journal of Neuroscience Methods*, Vol. 196, pp. 170-181, 2011.
24. Chun-Yang Wang, Ching-Cheng Chuang, Yao-Sheng Hsieh, and [Chia-Wei Sun*](#), "Fluorescence imaging of cut-open aorta by using confocal microscopy," DOI 10.5402/2011/215627, *ISRN Cardiology*, 2011.
 25. Yu-Tsung Wu, Arthur Chiou, and [Chia-Wei Sun*](#), "Correlation between tissue oxygenation and erythrocyte elasticity," Vol. 4, No. 4, pp. 224-228, *Journal of Biophotonics*, 2011.
 26. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Chih-Wei Lu, Cho-Pei Jiang, Ching-Cheng Chuang, Chun-Yang Wang, and [Chia-Wei Sun*](#), "Subgingival calculus imaging based on swept-source optical coherence tomography," *Journal of Biomedical Optics*, Vol. 16, No. 7, 071409, 2011.
 27. Po-Lei Lee, Hsiang-Chih Chang, Tsung-Yu Hsieh, Hua-Ting Deng and [Chia-Wei Sun](#), "A brain-wave-actuated small robot car using ensemble empirical mode decomposition – based approach," *IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans*, Vol. 42, Issue 5, pp. 1053-1064, 2012.
 28. Chun-Yang Wang, Ming-Lung Chuang, Shinn-Jye Liang, Yao-Sheng Hsieh, Ching-Cheng Chuang, Jui-che Tsai, Chih-Wei Lu, Po-Lei Lee and [Chia-Wei Sun*](#), "Diffuse optical multi-patch technique for tissue oxygenation monitoring: clinical study in intensive care unit," *IEEE Transactions on Biomedical Engineering*, Vol. 59, No. 1, pp.87-94, 2012.
 29. Ching-Cheng Chuang, Pei-Ning Wang, Wei-Ta Chen, Tsuo-Hung Lan, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, and [Chia-Wei Sun*](#), "Near-infrared brain volumetric imaging method: a Monte Carlo study," *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 18, No.3, pp. 1122-1129, 2012.
 30. Ching-Cheng Chuang, Jui-che Tsai, Chung-Ming Chen, Zong-Han Yu, and [Chia-Wei Sun*](#), "Convergence rate calculation of simultaneous iterative reconstruction technique algorithm for diffuse optical tomography image reconstruction: a feasibility study," Vol. 285, pp. 2236-2241, *Optics Communications*, 2012.
 31. Ching-Cheng Chuang, Chung-Ming Chen, Yao-Sheng Hsieh, Tsan-Chi Liu, and [Chia-Wei Sun*](#), "Patient-oriented photon migration simulation of human brain based on Monte Carlo algorithm by using MRI data," *BioMedical Engineering Online*, **11**:21, 2012.
 32. Ching-Cheng Chuang, Chia-Yen Lee, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, and [Chia-Wei Sun*](#), "Diffuser-aided diffuse optical imaging for breast tumor: three-dimensional Monte Carlo modeling," *IEEE Transactions on Biomedical Engineering*, Vol. 59, pp. 1454-1461, 2012.
 33. Chun-Yang Wang, Ming-Lung Chuang, Ching-Cheng Chuang, Yao-Sheng Hsieh, and [Chia-Wei Sun*](#), "The utility of far infrared illumination in oxygenation dynamics as measured with near-infrared spectroscopy," *Journal of Biophotonics*, Vol. 5, pp. 719-723, 2012.
 34. [Chia-Wei Sun*](#) and Ching-Cheng Chuang, "Chapter: Hemodynamics study based on near-infrared optical assessment," *Hemodynamics*, ISBN 979-953-307-404-6, Intech, Croatia, 2012. (Book Chapter)
 35. I-Chiang Chou, Shyh-Yuan Lee, Ming-Chang Wu, [Chia-Wei Sun](#), and Cho-Pei Jiang, "Finite element modeling of implant designs and cortical bone thickness on stress distribution in maxillary type IV bone," *Computer*

- Methods in Biomechanics and Biomedical Engineering, DOI:10.1080/10255842.2012.697556, 2012.
36. Ching-Cheng Chuang, Chung-Ming Chen, Yao-Sheng Hsieh, Tsan-Chi Liu, and [Chia-Wei Sun*](#), "Brain structure and spatial sensitivity profile assessing by near-infrared spectroscopy modeling based on 3D MRI data," Journal of Biophotonics, Vol. 6, pp. 267-274, 2013.
 37. [Chia-Wei Sun*](#), Yao-Sheng Hsieh, Yi-Ching Ho, Cho-Pei Jiang and Shyh-Yuan Lee, "Characterization of tooth structure and the dentin-enamel zone based on the Stokes-Mueller calculation," Journal of Biomedical Optics, Vol. 17, 116026, 2012.
 38. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Ching-Cheng Chuang, Jui-che Tsai, Kung-Feng Lin and [Chia-Wei Sun*](#), "Dental optical coherence tomography," Sensors, Vol. 13, pp. 8928-8949, 2013.
 39. [Chia-Wei Sun*](#), "Tissue oxygenation analysis," Biophotonics for medical applications, Woodhead, England, 2013. (Book Chapter)
 40. Ching-Cheng Chuang, Kazuyuki Nakagome, Shenghong Pu, Tsuo-Hung Lan, Chia-Yen Lee, and [Chia-Wei Sun*](#), "Discriminant analysis of functional optical topography for schizophrenia diagnosis," Journal of Biomedical Optics, Vol. 19, 011006, 2013.
 41. [Chia-Wei Sun*](#), Shyh-Yuan Lee and Kung-Feng Lin, "Optical scanning probe for bioimaging of optical coherence tomography," Journal of Medical and Biological Engineering, Vol. 34, No. 2, pp. 95-100, 2014.
 42. [Chia-Wei Sun*](#), Ching-Cheng Chuang, Chia-Yen Lee and Chung-Ming Chen, "Diffuser-aided time-domain diffuse optical imaging: a phantom study," Journal of Biomedical Optics, Vol. 19(4), 46008, 2014.
 43. Ching-Cheng Chuang and [Chia-Wei Sun*](#), "Gender-specific effects of hemispheric asymmetry in prefrontal cortex: a study of resting-state functional optical topography," Biomedical Optics Express, Vol. 5(8), pp. 2503-2516, 2014.
 44. [Chia-Wei Sun*](#), Yi-Ching Ho and Shyh-Yuan Lee, "Sensing of tooth microleakage based on dental optical coherence tomography," Volume 2015, Article ID 984627, Journal of Sensors, 2015.
 45. Wei-Long Kao and [Chia-Wei Sun*](#), "Gender-related effect in oxygenation dynamics by using far-infrared intervention with near-infrared spectroscopy measurement: a gender differences controlled trial," PLOS ONE, DOI: 10.1371/journal.pone.0135166, 2015.
 46. Che-Hsuan Huang, Kuo-Ju Chen, Ming-Ta Tsai, Min-Hsiung Shih, [Chia-Wei Sun](#), Wei-I Lee, Chien-Chung Lin, Hao-Chung Kuo, "High-efficiency and low assembly-dependent chip-scale package for white light-emitting diodes," Journal of Photonics for Energy, Vol. 5, No. 1, 057606 2015.
 47. Chun-Jung Huang, Po-Han Chou, Hao-Lin Wei, and [Chia-Wei Sun*](#), "Functional Connectivity during phonemic and semantic verbal fluency test: a multi-channel near infrared spectroscopy study," IEEE Journal of Selected Topics in Quantum Electronics, Vol. 22, No. 3, 6801706, 2016.
 48. Kuei-Hung Chuang, Ming-Lung Chuang, Sung-kien Sia, and [Chia-Wei Sun*](#), "Oxygenation dynamics of sepsis patients undergoing far-Infrared intervention based on near-infrared spectroscopy," Journal of Biophotonics, Vol. 10, No. 3, pp. 360-366, 2017.
 49. Po-Hsiung Chen and [Chia-Wei Sun*](#), "Systematic Optimization for

- Optical Coherence Tomographic Imaging,” Optical Data Processing and Storage, Vol. 3, pp. 41-46, 2017.
50. Cheng Lei, Yi Wu, Aswin C. Sankaranarayanan, Shih-Min Chang, Baoshan Guo, Naoto Sasaki, Hirofumi Kobayashi, [Chia-Wei Sun](#), Yasuyuki Ozeki, and Keisuke Goda, “GHz Optical Time-Stretch Microscopy by Compressive Sensing,” IEEE Photonics Journal, Vol. 9, No. 2, 3900308, 2017.
 51. Che-Wei Chen and [Chia-Wei Sun*](#), “Combination of electroencephalography and near-infrared spectroscopy in evaluation of mental concentration during the mental focus task for Wisconsin card sorting test,” Scientific Reports, Vol. 7, No. 338, DOI: 10.1038/s41598-017-00448-6, 2017.
 52. Po-Han Chou, Wei-Hao Lin, Wan-Rung Li, Chih-Mao Huang, and [Chia-Wei Sun](#), “Reduced language lateralization in first episode schizophrenia: A near infrared spectroscopy study,” Progress in Neuropsychopharmacology & Biological Psychiatry, Vol. 78, pp. 96-104, 2017.
 53. Po-Han Chou, Wei-Hao Lin, Wan-Rung Li, Chih-Mao Huang, and [Chia-Wei Sun](#), “Reduced frontal activity during a verbal fluency test in fibromyalgia: A near-infrared spectroscopy study,” Journal of Clinical Neuroscience, Vol. 50, pp. 35-40, 2018.
 54. Chun Chung, Yu-Pin Chen, Tsai-Hsueh Leu, and [Chia-Wei Sun*](#), “Near-infrared bone densitometry: a feasibility study on distal radius measurement,” Journal of Biophotonics, Vol. 11(7), e201700342, 2018.
 55. Wei-Ta Chen, Chuan-Hsiang Yu and [Chia-Wei Sun*](#), “Altered near-infrared spectroscopy response to breath-holding in patients with fibromyalgia,” Journal of Biophotonics, Vol. 12(1), e201800142, 2019.
 56. Yun-Qian Li, Kai-Shih Chiu, Xin-Rui Liu, Tien-Yu Hsiao, Gang Zhao, Shan-Ji Li, Ching-Po Lin, and [Chia-Wei Sun*](#), “Polarization-sensitive optical coherence tomography for brain tumor characterization,” IEEE Journal of Selected Topics in Quantum Electronics, DOI: 10.1109/JSTQE.2018.2885487, 2019.
 57. Yi-Hua Huang, Ming-Lung Chuang, Pay-Zen Wang, Yueh-Chi Chen, Chung-Ming Chen, and [Chia-Wei Sun*](#), “Muscle oxygenation dynamics in response to electrical stimulation as measured with near-infrared spectroscopy: A pilot study,” Journal of Biophotonics, DOI: 10.1002/jbio.201800320, 2019.
 58. Chih-Hao Lin, Che-Hsuan Huang, Yung-Min Pai, Chung-Fu Lee, Chien-Chung Lin, [Chia-Wei Sun](#), Cheng-Huan Chen, Chin-Wei Sher, and Hao-Chung Kuo, “Novel method for estimating phosphor conversion efficiency of light-emitting diodes,” Crystals, 8(12), pp. 442, 2018.
 59. Fangzheng Zhang, Cheng Lei, Chun-Jung Huang, Hirofumi Kobayashi, [Chia-Wei Sun](#), and Keisuke Goda, “Intelligent image de-blurring for imaging flow cytometry,” Cytometry Part A, Vol. 95, Issue 5, pp. 549-554, 2019.
 60. Yuta Suzuki, Koya Kobayashi, Yoshifumi Wakisaka, Dinghuan Deng, Shunji Tanaka, Chun-Jung Huang, Cheng Lei, [Chia-Wei Sun](#), Hanqin Liu, Yasuhiro Fujiwaki, Sangwook Lee, Akihiro Isozaki, Yusuke Kasai, Takeshi Hayakawa, Shinya Sakuma, Fumihito Arai, Kenichi Koizumi, Hiroshi Tezuka, Mary Inaba, Kei Hiraki, Takuro Ito, Misa Hase, Satoshi Matsusaka, Kiyotaka Shiba, Kanako Suga, Masako Nishikawa, Masahiro Jona, Yutaka Yatomi, Yalikun Yaxiaer, Yo Tanaka, Takeaki Sugimura, Nao Nitta,

- Keisuke Goda, and Yasuyuki Ozeki, "Label-free chemical imaging flow cytometry by high-speed multicolor stimulated Raman scattering," PNAS, Vol. 116, No. 32, pp. 15842-15848, 2019.
61. Xin-Rui Liu, Tien-Yu Hsiao, Yun-Qian Li, Kai-Shih Chiu, Chung-Jung Huang, Shan-Ji Li, Ching-Po Lin, Gang Zhao, and [Chia-Wei Sun](#)* "Neurosurgical brain tumor detection based on intraoperative optical intrinsic signal imaging technique: A case report of glioblastoma," Journal of Biophotonics, doi: 10.1002/jbio.201900200, e201900200, 2019.
 62. Tien-Yu Hsiao, Shyh-Yuan Lee, and [Chia-Wei Sun](#)* "Optical polarimetric detection for dental hard tissue diseases characterization," Sensors, Vol. 19(22), pp. 4971, 2019.
 63. Cheng Lei, Yunzhao Wu, Yuqi Zhou, Chun-Jung Huang, Hirofumi Kobayashi, Sheng Yan, Yasuyuki Ozeki, Yingli Wu, [Chia-Wei Sun](#), Atsushi Yasumoto, Yutaka Yatomi, and Keisuke Goda, "Intelligent frequency-shifted optofluidic time-stretch quantitative phase imaging," Optics Express, Vol. 28, Issue 1, pp. 519, 2020.
 64. Hideharu Mikami, Makoto Kawaguchi, Chun-Jung Huang, Hiroki Matsumura, Takeaki Sugimura, Kangrui Huang, Cheng Lei, Shunnosuke Ueno, Taichi Miura, Takuro Ito, Kazumichi Nagasawa, Takanori Maeno, Hiroshi Watarai, Mai Yamagishi, Sotaro Uemura, Shinsuke Ohnuki, Yoshikazu Ohya, Hiromi Kurokawa, Satoshi Matsusaka, [Chia-Wei Sun](#), Yasuyuki Ozeki, and Keisuke Goda, "Virtual-freezing fluorescence imaging flow cytometry," Nature Communications, Vol. 11, Article no. 1162, 2020.
 65. Yuqi Zhou, Atsushi Yasumoto, Cheng Lei, Chun-Jung Huang, Hirofumi Kobayashi, Yunzhao Wu, Sheng Yan, [Chia-Wei Sun](#), Yutaka Yatomi, and Keisuke Goda, "Classification of platelet aggregates by agonist type," eLife, e52938, 2020.
 66. Hsiao-Huang Chang, Yi-Chih Chen, Chun-Jung Huang, Chia-Cheng Kuo, Yi-Min Wang and [Chia-Wei Sun](#)*, "Optimization of extracorporeal membrane oxygenation therapy using near-infrared spectroscopy to assess changes in peripheral circulation: a pilot study," Journal of Biophotonics, DOI: 10.1002/jbio.202000116, 2020.
 67. Yi-Hua Huang, Chung-Ming Chen, Yi-Min Wang, and [Chia-Wei Sun](#)*, "Quantitative evaluation of age-related effects based on oxygenation dynamic signals during the Wisconsin card sorting test," IEEE Journal of Selected Topics in Quantum Electronics, DOI: 10.1109/JSTQE.2020.3019283, 2020.
 68. Wen-Chieh Ho, Yao-Hsing Liu, Wen-Hsuan Wu, Sung-Wen Huang Chen, Jerry Tzou, Hao-Chung Kuo, and [Chia-Wei Sun](#), "The Study of High Breakdown Voltage Vertical GaN-on-GaN p-i-n Diode with Modified Mesa Structure," Crystals, Vol. 10(8), Article no. 712, 2020.
 69. Tsung Chi Hsu, Yen Wei Yeh, Kuo Hsiung Chu, Annada Sankar Sadhu, Dong Yang, Hsien Yao Tseng, [Chia-Wei Sun](#), Po Tsung Lee, Chao Hsin Wu, Gong Ru Lin, and Hao Chung Kuo, "50 Gb/s Zn-Diffusion Few-Mode VCSELs for over 100-m GI-SMF Transmission at 850 nm Wavelength," IEEE Transactions on Nanotechnology, Vol. 20, pp. 889-894, 2021.
 70. Chin-Chuan Huang, Kuo-Hsiung Chu, Chin-Wei Sher, Chun-Liang Lin, Yan-Kuin Su, [Chia-Wei Sun](#) and Hao-Chung Kuo, "High stability of liquid-typed white light-emitting diode with Zn_{0.8}Cd_{0.2}S white quantum dots," Coatings, Vol. 11, Article no. 415, 2021.

71. Miao-Hui Lin, Hung-Chang Liu, Tien-Yu Hsiao, and [Chia-Wei Sun*](#), "A bedside feasibility study with optical coherence tomography for real-time tumor-located of lung cancer," *Health Technology*, Vol. 5, No. 1, pp. 1, 2021.
72. Tien-Yu Hsiao, Yi-Ching Ho, Mei-Ru Chen, Shyh-Yuan Lee, and [Chia-Wei Sun*](#), "Disease activation maps for subgingival dental calculus identification based on intelligent dental optical coherence tomography," *Translational Biophotonics*, Vol. 3, e202100001, 2021.
73. Che-Hsuan Huang, Pei-Hsuan Lee, Shu-Hsiu Chang, Hao-Chung Kuo, [Chia-Wei Sun](#), Chien-Chung Lin, Chun-Lin Tsai, and Xinke Liu, "Automated optical inspection method for light-emitting diode defect detection using unsupervised generative adversarial neural network," *Crystals*, Vol. 11(9), pp. 1048, 2021.
74. Yu Nakamichi, Kai-shih Chiu, and [Chia-Wei Sun](#), "Signal properties of split-spectrum amplitude decorrelation angiography for quantitative optical coherence tomography-based velocimetry," *Biomedical Optics Express*, Vol. 12(10), pp. 5955-5968, 2021.
75. Tien Yun Yang, Pin-Yu Kuo, Yaoru Huang, Hsiao-Wei Lin, Shwetambara Malwade, Long-Sheng Lu, Lung-Wen Tsai, Shabbir Syed Abdul, and [Chia-Wei Sun*](#) and Jeng-Fong Chiou, "Deep-learning approach to predict survival outcomes using wearable actigraphy among end-stage cancer patients," *Frontiers in Public Health*, doi.org/10.3389/fpubh.2021.730150, 2022.
76. Le-Mei Wang, Yi-Hua Huang, Po-Han Chou, Yi-Min Wang, Chung-Min Chen, and [Chia-Wei Sun*](#), "Characteristics of brain connectivity during verbal fluency test: convolutional neural network for functional near-infrared spectroscopy analysis," *Journal of Biophotonics*, 15(1):e202100180, 2022.
77. Sanford P.C. Hsu, Tien-Yu Hsiao, Li-Chieh Pai, and [Chia-Wei Sun*](#), "Differentiation of primary central nervous system lymphoma from glioblastoma using optical coherence tomography based on attention ResNet," *Neurophotonics*, 9(1):015005, 2022.
78. Catherine Langpoklakpam, An-Chen Liu, Kuo-Hsiung Chu, Lung-Hsing Hsu, Wen-Chung Lee, Shih-Chen Chen, [Chia-Wei Sun](#), Min-Hsiung Shih, Kung-Yen Lee and Hao-Chung Kuo, "Review of Silicon Carbide Processing for Power MOSFET," *Crystals*, Vol. 12(2), pp. 245, 2022.
79. Tien-Yu Hsiao, Yi-Ching Ho, Shyh-Yuan Lee, and [Chia-Wei Sun*](#), "Degree of polarization uniformity for dental calculus visualization," *Journal of Biophotonics*, 15(6): e202200011, 2022.
80. Pou-Leng Cheong, Jung-Mei Tsai, Yen-Tzu Wu, Lu Lu, Yi-Lun Chiu, Yi-Ting Shen, Yao-Jen Li, Chih-Hsuan Tsao, Yi-Chung Wang, Fu-Mei Chang, Yen-Hsun Huang, and [Chia-Wei Sun](#), "Cultural adaptation and validation of Mullen scales of early learning in Taiwanese children with Autism spectrum disorder, global developmental delay, and typically developing children," *Research in Developmental Disabilities*, Vol. 122, 104158, 2022.
81. Wei-Ta Chen, Cing-Yan Hsieh, Yao-Hong Liu, Pou-Leng Cheong, Yi-Min Wang, and [Chia-Wei Sun*](#), "Migraine classification by machine learning with functional near-infrared spectroscopy during the mental arithmetic task," *Scientific Reports*, Vol. 12, 14590, 2022.
82. Kai-Shih Chiu, Manabu Tanifuji, [Chia-Wei Sun*](#), Uma Maheswari Rajagopalan and Yu Nakamichi, "Temporal mirror-symmetry in functional

- signals recorded from rat barrel cortex with optical coherence tomography,” *Cerebral Cortex*, 33(8):4904-4914, 2023.
83. Hsiao-Huang Chang, Yung-Chang Chen, Ting-Wei Chiang, Yi-Min Wang, and [Chia-Wei Sun*](#), “Predicting Survival in Extracorporeal Membrane Oxygenation Patients with Optical Microcirculation Sensing,” *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 29(4), pp. 1-7, 2023.
 84. Hung-Chang Liu, Miao-Hui Lin, Ching-Heng Ting, Yi-Min Wang, and [Chia-Wei Sun*](#), “Intraoperative application of optical coherence tomography for lung tumor,” *Journal of Biophotonics*, Vol. 16(6), 2023.
 85. Yu-Wei Chang, Taichi Hatakeyama, [Chia-Wei Sun](#), Masugi Nishihara, Keitaro Yamanouchi, Takashi Matsuwaki, “Characterization of pathogenic factors for premenstrual dysphoric disorder using machine learning algorithms in rats,” *Molecular and Cellular Endocrinology*, 6;576:112008, 2023.
 86. Kuo-Hsiung Chu, Jo-Hsiang Chen, Kuo-Bin Hong, Yu-Ming Huang, Shih-Wen Chiu, Fu-Yao Ke, [Chia-Wei Sun](#), Tsung-Sheng Kao, Chin-Wei Sher, and Hao-Chung Kuo, “Study of high polarized nanostructure light-emitting diode,” *Crystals*, Vol. 12, Issue 4, pp. 532, 2023.
 87. Hung-Chang Liu, Miao-Hui Lin, Wei-Chin Chang, Rui-Cheng Zeng, Yi-Min Wang and [Chia-Wei Sun*](#), “Rapid on-site AI-assisted grading for lung surgery based on optical coherence tomography,” *Cancers*, Vol. 15, Issue 22, pp. 5388, 2023.
 88. Yi-Hua Huang, Wei-Yu Chen, Yao-Hong Liu, Ting-Ying Li, Ching-Po Lin, Pou-Leng Cheong, Yi-Min Wang, Jiann-Shing Jeng, [Chia-Wei Sun*](#) and Chau-Chung Wu, “Mild cognitive impairment estimation based on functional near-infrared spectroscopy,” *Journal of Biophotonics*, 17(1):e202300251, 2024. <https://doi.org/10.1002/jbio.202300251>
 89. Hsiao-Huang Chang, Kai-Hsiang Hou, Ting-Wei Chiang, Yi-Min Wang and [Chia-Wei Sun](#), “Using signal features of functional near-Infrared spectroscopy for acute physiological score estimation in ECMO patients,” *Bioengineering*, Vol. 11, Issue 1, pp. 26, 2024.
 90. Sanford P.C. Hsu, Miao-Hui Lin, Chun-Fu Lin, Tien-Yu Hsiao, Yi-Min Wang, and [Chia-Wei Sun*](#), “Brain tumor grading diagnosis using transfer learning based on optical coherence tomography,” *Biomedical Optics Express*, Vol. 15, Issue 4, pp. 2343-2357, 2024.
 91. Takhellambam Gautam Meitei, Wei-Chun Chang, Pou-Leng Cheong, Yi-Min Wang and [Chia-Wei Sun*](#), “A study on intelligent optical bone densitometry,” *IEEE Journal of Translational Engineering in Health and Medicine*, Vol. 15, No. 4, pp. 2343-2357, 2024.
 92. Wei-Ta Chen, Chia-Chen Li, Yao-Hong Liu, Pou-Leng Cheong, Yi-Min Wang and [Chia-Wei Sun*](#), “Migraine detection in young group based on functional near-infrared spectroscopy measurements,” Vol. 31, No. 4, 7400611, *IEEE Journal on Selected Topics in Quantum Electronics*, 2025.
 93. [Chia-Wei Sun](#), Chun-Yeh Wang, Yu-Han Zheng, Yi-Min Wang, Hsiao-Huang Chang, “A novel approach to sequential organ failure assessment (SOFA) using near-infrared spectroscopy in extracorporeal membrane oxygenation (ECMO) patients,” Vol. 18, Issue 7, e202500032, *Journal of Biophotonics*, 2025.

94. Wei-Chun Chang, Takhellambam Gautam Meitei, Yi-Min Wang, Liang-Kung Chen, and [Chia-Wei Sun](#)^{*}, "A generalizable framework for multi-site bone density prediction using non-dominant wrist optical biomarkers," accepted in Biomedical Optics Express, 2025.
95. Takhellambam Gautam Meitei, Pi-Shan Hsu, Wei-Wen Lin, Yi-Min Wang, Liang-Kung Chen, and [Chia-Wei Sun](#)^{*}, "Vascular reactivity fingerprints predict cardiovascular risk via thermal-stressed optical profiling: a dual near-infrared spectroscopy and laser Doppler flowmetry approach," accepted in IEEE Journal of Selected Topics in Quantum Electronics, 2025.