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| **學 歷** | | |
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| 學 校 名 稱 | 學 位 | 起 迄 年 月 |
| 國立台灣大學 醫學工程學研究所 | 博士 | 2006 年 09 月 ~2012 年 06 月 |
| 中原大學 生物醫學工程學系 研究所 | 碩士 | 2003 年 09 月 ~2005 年 06 月 |
| 中原大學 生物醫學工程學系 | 學士 | 1999 年 09 月 ~2003 年 06 月 |

| **經 歷** | | |
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| 服 務 機 構 及 單 位 | 職 稱 | 起 迄 年 月 |
| 國立陽明交通大學智慧醫電工程研究所 | 助理教授 | 2025 年 08 月 ~迄今 |
| 國立陽明交通大學 生醫工程研究所 | 助理教授 | 2021 年 02 月 ~2025 年 07 月 |
| 國立交通大學 生醫工程研究所 | 助理教授 | 2015 年 02 月 ~2020 年 01 月 |
| 國立陽明交通大學 電機工程學系 | 合聘助理教授 | 2021 年 02 月 ~迄今 |
| 國立交通大學 電機工程學系 | 合聘助理教授 | 2017 年 08 月 ~2021 年 01 月 |
| 國立交通大學 生醫工程研究所 | 專案助理教授 | 2014 年 02 月 ~2015 年 01 月 |
| 日本筑波大學 物理工學系 計算光學實驗室 | 訪問學者 | 2014 年 07 月 ~2014 年 09 月 |
| 國立交通大學 光電工程學系 生醫光學影像實驗室 | 博士後研究員 | 2012 年 08 月 ~2014 年 01 月 |
| 國立陽明大學 牙醫學系 | 博士後研究員 | 2013 年 08 月 ~2014 年 01 月 |
| 國立陽明大學 生醫光電暨分子影像研究中心 | 博士後研究員 | 2012 年 09 月 ~2013 年 07 月 |
| 國立陽明大學 生醫光電暨分子影像研究中心 生醫光學影像實驗室 | 兼任研究助理 | 2008 年 06 月 ~2012 年 07 月 |

| 學 術 服 務 | |
|---|---|
| 2018/09/07 | 2018 Intelligent Photonics Workshop (2018 智慧光電工作坊) 座長 |
| 2015/11/13 | 第一屆台灣生醫工程菁英高峰論壇 籌備主任 |
| 2015/11/13 | 2015 中華民國生物醫學工程學會生物醫學工程科技研討會 「第二大類：醫學影像、生醫訊號、生醫資訊」壁報論文競賽評審委員 |
| 2018 年 ~ 迄今 | 國際期刊審查委員 (Biomedical Optics Express) |
| 2017 年 ~ 迄今 | 國際期刊審查委員 (Journal of Medical Imaging and Healthy Information) |
| 2016 年 ~ 迄今 | 國際期刊審查委員 (Scientific Reports) |
| 2014 年 ~ 迄今 | 國際期刊審查委員 (Computational and Mathematical Methods in Medicine) |
| 2013 年 ~ 迄今 | 國際期刊審查委員 (Journal of Biomedical Optics) |
| 2012 年 ~ 迄今 | 國際期刊審查委員 (IEEE Transactions on Biomedical Engineering) |
| 2018 年 | 國際研討會論文審查委員 The 7th International Conference on Biomedical Engineering and Biotechnology (ICBEB) |
| 2016 年 | 國際研討會論文審查委員、Session Chair (2016 SEMBA; Symposium on Engineering, Medicine and Biology Applications) |
| 2016 年 | 國際研討會論文審查委員 The 5th International Conference on Biomedical Engineering and Biotechnology (ICBEB) |
| 2014 年 | 國際研討會論文審查委員 The 3rd International Conference on Biomedical Engineering and Biotechnology (ICBEB) |
| 2013 年 | 國際研討會論文審查委員 The 2nd International Conference on Biomedical Engineering and Biotechnology (ICBEB) |

## 著 作

**A. 期刊論文 (Journal Publications)**

1. Wen-Chin Weng, Jung-Chih Chen, Chia-Yen Lee, Chia-Wei Lin, Wang-Tso Lee, Jeng-Yi Shieh, Chia-Chen Wang, and **Ching-Cheng Chuang*,** "Cross-section and feasibility study on the non-invasive evaluation of muscle hemodynamic responses in Duchenne muscular dystrophy by using a near-infrared diffuse optical technique," *Biomedical Optics Express*, 9(10), pp. 4767-4780, 2018. (SCI; IF: 3.482; Ranking: 15.96%; Q1)
2. Chia-Yen Lee, **Ching-Cheng Chuang**, Guan-Jie Chen, Chih-Chia Huang, Shyh-Yuan Lee, and Yu-Hsien Lin, "Automated segmentation of dental calculus in optical coherence

tomography images," *Sensors and Materials*, 2018. (Accepted August 31, 2018) (SCI IF: 0.482; Ranking: 93.33%; Q4)

3. Tzu-Chieh Lin, Jung-Chih Chen, Chih-Hsien Liu, Chia-Yen Lee, Yung-An Tsou, and **Ching-Cheng Chuang***, "A feasibility study on non-invasive oxidative metabolism detection and acoustic assessment of human vocal cords by using optical technique," *Scientific Reports*, 7(17002), DOI:10.1038/s41598-017-16807-2, pp. 1-10, 2017. (SCI; IF: 4.122; Ranking: 18.75%; Q1)
4. **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Gender-related effects of prefrontal cortex connectivity: a resting-state functional optical tomography study," *Biomedical Optics Express*, 5(8), pp. 2503–2516, 2014. (SCI; IF: 3.648; Ranking: 10.34%; Q1)
5. Chia-Yen Lee*, Hao-Jen Wang, Chung-Ming Chen, **Ching-Cheng Chuang**, Yeun-Chung Chang, and Nien-Shiang Chou, "A Modified Harris Corner Detection for Breast IR Image," *Mathematical Problems in Engineering*, 2014, 902659, 2014. (SCI; IF: 1.145; Ranking: 55.34%; Q3)
6. 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*, 19(4), pp. 046008, 2014. (SCI; IF: 2.859; Ranking: 14.94%; Q1) **(Co-first author)**
7. Xiaonan Geng, Zhuhuang Zhou, Qiang Li, Shuicai Wu, Chiao-Yin Wang, Hao-Li Liu, **Ching-Cheng Chuang**, and Po-Hsiang Tsui*, "Comparison of ultrasound temperature imaging with infrared thermometry during radio frequency ablation," *Japanese Journal of Applied Physics*, 53, pp. 047001, 2014. (SCI; IF: 1.452; Ranking: 64.38%; Q3)
8. **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*, 19(1), 011006, 2014. (SCI; IF: 2.859; Ranking: 14.94%; Q1)
9. Yao-Sheng Hsieh, Shyh-Yuan Lee, Yi-Ching Ho, **Ching-Cheng Chuang**, Jui-che Tsai, Kun-Feng Lin, Chia-Wei Sun*, "Dental Optical Coherence Tomography," *Sensors*, 13(7), pp. 8928–8949, 2013. (SCI; IF: 2.475; Ranking: 26.23%; Q2)
10. **Ching-Cheng Chuang**, Chia-Yen Lee, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, and Chia-Wei Sun*, "Brain structure and spatial sensitivity profile assessing by near-infrared spectroscopy modeling based on 3D MRI data," *Journal of Biophotonics*, **6**(3), pp. 267–274, 2013. (SCI; IF: 3.768; Ranking: 12.77%; Q1)
11. Chia-Wei Sun*, Yao-Sheng Hsieh, Yi-Ching Ho, Cho-Pei Jiang, **Ching-Cheng Chuang** and Shyh-Yuan Lee, "Characterization of tooth structure and the dentin-enamel zone based on the Stokes–Mueller calculation," *Journal of Biomedical Optics*, **17**(11), 116026, 2012. (SCI; IF: 2.881; Ranking: 11.25%; Q1)
12. **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. (SCI; IF: 1.608; Ranking: 49.37%; Q2)

13. **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*, **59**(5), pp. 1454–1461, 2012. (SCI; IF: 4.288; Ranking: 11.53%; Q1)
14. 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*, **5**(10), pp. 719–723, 2012. (SCI; IF: 3.768; Ranking: 12.77%; Q1)
15. **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," *Optics Communications*, **285**(8), pp. 2236–2241, 2012. (SCI; IF: 1.887; Ranking: 48.94%; Q2)
16. **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*, **18**(3), pp. 1122–1129, 2012. (SCI; IF: 4.078; Ranking: 2.88%; Q1)
17. Chun-Yang Wang, Ming-Lung Chuang, Yo-Wei Lin, 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*, **59**(1), pp. 87–94, 2012. (SCI; IF: 4.288; Ranking: 11.53%; Q1)
18. 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*, **16**(7), 071409, 2011. (SCI; IF: 3.157; Ranking: 11.39%; Q1)
19. Chia-Yen Lee, **Ching-Cheng Chuang**, Hsin-Yu Hsieh, Wan-Rou Lee, Ching-Yen Lee, Shyang-Rong Shih, Si-Chen Lee, Chiun-Sheng Huang, Yeun-Chung Chang, and Chung-Ming Chen*, "Evaluation of Dual-Spectrum IR Spectrogram System on Invasive Ductal Carcinoma Breast Cancer," *Biomedical Engineering: Applications, Basis and Communications*, **23**(6), pp. 427–433, 2011. (SCI)
20. 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.
21. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Dental calculus image based on optical coherence tomography," DOI 10.1117/12.874772, Proceedings of SPIE, 2011. (EI)
22. **Ching-Cheng Chuang**, Chung-Ming Chen, Jui-che Tsai, Chih-Wei Lu, and Chia-Wei Sun*, "Study on dynamics of photon migration in human breast based on three-dimensional Monte Carlo modeling," Proceedings of SPIE Vol. 7573, 7573–47, 2010. (EI)
23. Yao-Sheng Hsieh, Chun-Yang Wang, Yo-Wei Lin, Ming-Lung Chuang, **Ching-Cheng Chuang**, Jui-che Tsai, Chih-Wei Lu, and Chia-Wei Sun*, "Hemodynamic analysis of patients

in intensive care unit based on diffuse optical spectroscopic imaging system," Proceedings of SPIE Vol. 7555, 7555–24, 2010. (EI)

**B. 研討會論文**

**B-1 International Conference Papers**

1. Yen-Ting Chen, Jung-Chih Chen, and **Ching-Cheng Chuang***, "Detection of Cortical Oxygen for Clinical Analysis and Trends Research of Olfactory Memory by using functional optical topography," BiOS 2018, SPIE Photonics West, San Francisco, USA, January 2018. (Accepted for Oral)
2. Te-Hsuan Chen, Wen-Chin Weng, Jung-Chih Chen, Chia-Wei Lin, and **Ching-Cheng Chuang***, "Evaluation of muscle oxygen consumption by using near-infrared spectroscopy in Duchenne Muscular Dystrophy," BiOS 2018, SPIE Photonics West, San Francisco, USA, January 2018. (Accepted for Oral)
3. Han-Yun Cheng, Jung-Chih Chen, Chih-Hsien Liu, Yung-An Tsou, Zih-Jie Lin, and **Ching-Cheng Chuang***, "Evaluation of oxygen consumption and acoustics of human vocal fold by using near-infrared spectroscopy," BiOS 2018, SPIE Photonics West, San Francisco, USA, January 2018. (Accepted for Oral)
4. Wei-Shan Hsiao, Yen-Ting Chen, Wen-Chin Weng, Wang-Tso Lee, Jung-Chih Chen, and **Ching-Cheng Chuang***, "Analysis of prefrontal cortex function in TD patient during working memory task and olfactory task by using fNIRS measurements," BiOS 2018, SPIE Photonics West, San Francisco, USA, January 2018. (Accepted for Poster)
5. Wen-Chin Weng*, **Ching-Cheng Chuang***, Jung-Chih Chen, Wang-Tso Lee, Chia-Wei Lin, Jeng-Yi Shieh, "Evaluation of Muscle Oxygenation by Functional Near-infrared Spectroscopy in Duchenne Muscular Dystrophy," 14th Asian and Oceanian Congress of Child Neurology, Hilton Fukuoka Sea Hawk, Fukuoka, Japan. (11-14 May 2017). (Co-first author)
6. Yen-Ting Chen, Guan-Lin Wang, Jung-Chih Chen, Yung-An Tsou, Te-Jen Lai, **Ching-Cheng Chuang***, "Study of brain olfactory response for early diagnosis of Alzheimer's disease by using diffuse optical imaging system," 2nd Global Conference of Biomedical Engineering, Taipei, Taiwan, August 2016. (M.O.S.T Poster)
7. Wei-Ting Chen, Guan-Lin Wang, Jung-Chih Chen, Yung-An Tsou, Zih-Jie Lin, and **Ching-Cheng Chuang***, "Study of multi-functional measurement system for human vocal fold by using optical technique," 2016 SEMBA; Symposium on Engineering, Medicine and Biology Applications, Taoyuan, Taiwan, January 2016. (Accepted for Oral; Session Chair)
8. Chun-Jung Huang, Po-Han Chou, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Functional connectivity during phonemic and semantic verbal fluency test: a multi-channel near infrared spectroscopy study," BiOS 2016, SPIE Photonics West, San Francisco, USA, February 2016. (Accepted for Oral)

9. Jung-Chih Chen*, **Ching-Cheng Chuang**, "Explore the feasibility of real-time observation the oxygen concentration dependency in cell culture process by EQCM and SECM technology," 11th Asian Conference on Chemical Sensors, Rasa Sayang Resort-Shangri-La, Penang, Malaysia, November 2015. (BEST PRESENTER AWARD)
10. Jung-Chih Chen*, **Ching-Cheng Chuang***, "Early Detection for Tumor Markers through Acoustic Biosensor," 2nd Annual Oncology Asia, Invited Speech, Sheraton Miyako, Tokyo, Japan, September 2015.
11. Chung-Jung Huang , Chia-Wei Sun , and **Ching-Cheng Chuang***, "Study of gender-related effects of prefrontal cortex connectivity by using functional optical tomography," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted for Oral)
12. Dai-Chen Lu, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Simultaneous Electroencephalography / Near-infrared Spectroscopy measurement on prefrontal cortex with WCST task," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
13. Chun-Jung Huang, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Peripheral Circulation Detection by Using Portable Near-infrared Spectroscopy: The Study of Temperature Effect," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
14. Chen-Wun Ciou, **Ching-Cheng Chuang**, Chung-Ming Chen, and Chia-Wei Sun*, "Changes of Absorption and Reduced Scattering Coefficients during Vessel Occlusion Test: Time-resolved Diffuse Optical Signal Study," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
15. Chao-Che Lee, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Detection of Paroxysmal Migraine without Aura by Using Near-infrared Spectroscopy," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
16. Chen-Yu Lin, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Study on Migraine Signal of Prefrontal Cortex with Gender Difference based on NIRS Method," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
17. Wei-Long Kao, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "The Gender Differences of Extremities Microcirculation: Far-infrared illumination test," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
18. Cheng-Han Huang, **Ching-Cheng Chuang**, and Chia-Wei Sun*, "Tooth structure analysis by using Jones-matrix optical coherence tomography," BiOS 2015, SPIE Photonics West, San Francisco, USA, February 2015. (Accepted)
19. **Ching-Cheng Chuang***, Chia-Yen Lee, "Diffuser-aided time-domain diffuse optical imaging," IEEE International Symposium on Computer, Consumer and Control, Taichung, Taiwan, June 2014.
20. **Ching-Cheng Chuang** and Chia-Wei Sun*, "Dominant frequency analysis of prefrontal cortex: a study of resting-state functional optical topography," SPIE Translational

Biophotonics, Houston, Texas, USA, May 2014.

21. Chen-Wen Chou, **Ching-Cheng Chuang** and Chia-Wei Sun*, "Oxygenation Dynamic Monitoring Using Time-resolved Diffuse Optical Imaging System with Time Division Multiple Access," SPIE Translational Biophotonics, Houston, Texas, USA, May 2014.
22. Chung-Jung Huang, **Ching-Cheng Chuang** and Chia-Wei Sun*, "Study on temperature effect of microcirculation using near-infrared laser Doppler system," SPIE Translational Biophotonics, Houston, Texas, USA, May 2014.
23. Cheng-Han Huang, Shyh-Yuan Lee, Yao-Sheng Hsieh, **Ching-Cheng Chuang** and Chia-Wei Sun*, "Periodontal Disease Diagnosis with Swept-source Doppler Optical Coherent Tomography," SPIE Translational Biophotonics, Houston, Texas, USA, May 2014.
24. Wei-Long Kao, **Ching-Cheng Chuang** and Chia-Wei Sun*, "Study on functional electrical stimulation therapy for knee osteoarthritis complicating quadriceps muscular atrophy with near-infrared spectroscopy measurement," SPIE Translational Biophotonics, Houston, Texas, USA, May 2014.
25. Dai-Chen Lu, **Ching-Cheng Chuang** and Chia-Wei Sun*, "Usefulness of simultaneous electroencephalography near-infrared spectroscopy in diagnosis of neurological disorders," SPIE Translational Biophotonics, Houston, Texas, USA, May 2014.
26. **Ching-Cheng Chuang**, Yao-Sheng Hsieh, Kuen-Feng Lin, and Chia-Wei Sun*, "Resting state functional connectivity study in frontal cortex by using functional optical topography," European Conferences on Biomedical Optics (ECBO), Munich, Germany, May 2013.
27. Yao Sheng Hsieh, Chih-Wei Lu, Yi-Ching Ho, I-Chiang Chou, **Ching-Cheng Chuang**, Wei-Cheng Huang, Shyh-Yuan Lee, and Chia-Wei Sun*, "Microleakage Detection Based on Dental Optical Coherence Tomography," European Conferences on Biomedical Optics (ECBO), Munich, Germany, May 2013.
28. **Ching-Cheng Chuang**, Yao-Sheng Hsieh, Kuen-Feng Lin, Tsan-Chi Liu, and Chia-Wei Sun*, "Study of resting state functional connectivity on the prefrontal cortex by using functional optical topography," BiOS 2013, SPIE Photonics West, San Francisco, USA, February 2013.
29. **Ching-Cheng Chuang**, Liu Tsan Chi, Yao-Sheng Hsieh, Kuen Feng Lin, and Chia-Wei Sun*, "Doppler diffuse optical multipatch imaging for microcirculatory monitoring," BiOS 2013, SPIE Photonics West, San Francisco, USA, February 2013. (joint first authors, equal contribution)
30. Yao-Sheng Hsieh, Chih-Wei Lu, Yi-Ching Ho, Shyh-Yuan Lee, **Ching-Cheng Chuang**, Wei-Cheng Huang, and Chia-Wei Sun*, "Microleakage detection based on dental optical coherence tomography," BiOS 2013, SPIE Photonics West, San Francisco, USA, February 2013.
31. Kuen Feng Lin, Yao-Sheng Hsieh, **Ching-Cheng Chuang**, Tsan-Chi Liu, and Chia-Wei Sun*, "Tooth structure characterization and dentin-enamel zone identification based on

Stokes-Mueller calculation," BiOS 2013, SPIE Photonics West, San Francisco, USA, February 2013.

32. **Ching-Cheng Chuang**, I-Jen Chiang, Tsuo-Hung Lan, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, Ching-Po Lin, and Chia-Wei Sun*, "Discriminant analysis of functional near-infrared imaging for schizophrenia diagnosis," BiOS 2012, SPIE Photonics West, San Francisco, USA, January 2012.
33. **Ching-Cheng Chuang**, Tsuo-Hung Lan, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, Ching-Po Lin, and Chia-Wei Sun*, "Near-infrared brain volumetric imaging for neurodegenerative diseases diagnosis: a feasibility study based on Monte Carlo simulation," BiOS 2012, SPIE Photonics West, San Francisco, USA, January 2012.
34. Yao-Sheng Hsieh, Yi-Ching Ho, Chih-Wei Lu, Cho-Pei Jiang, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Subgingival calculus detection by swept-source optical coherence tomography," BiOS 2012, SPIE Photonics West, San Francisco, USA, January 2012.
35. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Tooth structure analyzing by use of Stokes formalism and Mueller matrix," BiOS 2012, SPIE Photonics West, San Francisco, USA, January 2012.
36. **Ching-Cheng Chuang**, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, and Chia-Wei Sun*, "Study on the early diagnosis of Alzheimer's disease with near-infrared spectroscopy based on three-dimensional Monte Carlo modeling," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.
37. **Ching-Cheng Chuang**, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, and Chia-Wei Sun*, "Study on diffuser-aided diffuse optical tomography for breast imaging based on three-dimensional Monte Carlo modeling," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.
38. **Ching-Cheng Chuang**, Chun-Yang Wang, Chih-Ching Lin, Yao-Sheng Hsieh, and Chia-Wei Sun*, "Study on extremity oxygenation assessing of hemodialysis patients based on near-infrared spectroscopy," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.
39. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Chih-Wei Lu, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Subgingival calculus imaging based on swept-source optical coherence tomography," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.
40. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Chih-Wei Lu, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Dentin enamel junction characterization by use of Stokes-Mueller formalism," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.
41. Chun-Yang Wang, Shinn-Jye Liang, Ming-Lung Chuang , **Ching-Cheng Chuang**,

Yao-Sheng Hsieh, and Chia-Wei Sun*, "Skeletal muscle oxygenation assessment by near-infrared spectroscopy in intensive care medicine," BiOS 2011, SPIE Photonics West, San Francisco, USA, January 2011.

42. **Ching-Cheng Chuang**, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, Po-Lei Lee, Chih-Wei Lu, and Chia-Wei Sun*, "Study on human breast imaging by use of three-dimensional Monte Carlo modeling," XII International Conference on Laser Applications in Life Sciences (LALS-2010), Oulu, Finland, June 2010.
43. Chun-Yang Wang, Shinn-Jye Liang, **Ching-Cheng Chuang**, Yao-Sheng Hsieh, Chih-Wei Lu, Po-Lei Lee, and Chia-Wei Sun*, "Oxygenation signals analysis of patients in intensive care unit based on near-infrared spectroscopy," XII International Conference on Laser Applications in Life Sciences (LALS-2010), Oulu, Finland, June 2010.
44. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Chih-Wei Lu, **Ching-Cheng Chuang**, Chun-Yang Wang, Po-Lei Lee, and Chia-Wei Sun*, "Subgingival calculus imaging based on optical coherence tomography," XII International Conference on Laser Applications in Life Sciences (LALS-2010), Oulu, Finland, June 2010.
45. **Ching-Cheng Chuang**, Chung-Ming Chen, Jui-che Tsai, Chih-Wei Lu, and Chia-Wei Sun*, "Study on dynamics of photon migration in human breast based on three-dimensional Monte Carlo modeling," Bios 2010, Photonics West, San Francisco, USA, January 2010.
46. Yao-Sheng Hsieh, Chun-Yang Wang, Yo-Wei Lin, Ming-Lung Chuang, **Ching-Cheng Chuang**, Jui-che Tsai, Chih-Wei Lu, and Chia-Wei Sun*, "Hemodynamic analysis of patients in intensive care unit based on diffuse optical spectroscopic imaging system," BiOS 2010, SPIE Photonics West, San Francisco, USA, January 2010.

**B-2 Domestic Conference Papers**

1. Wei-Shan Hsiao, Yen-Ting Chen, Jung-Chin Chen, Yung-An Tsou, Te-Jen Lai, and **Ching-Cheng Chuang***, "Study of brain olfactory response for early diagnosis of Alzheimer's disease by using diffuse optical imaging system," 2017 生物醫學工程科技研討會暨科技部醫學工程學門成果發表會, Taoyuan, Taiwan, November 2017. (M.O.S.T. Poster)
2. **Ching-Cheng Chuang**, Kazuyuki Nakagome, Tsuo-Hung Lan, Yao-Sheng Hsieh, Kuen-Feng Lin, Tsan-Chi Liu, and Chia-Wei Sun* "Diffuse optical imaging of brain functional detection for schizophrenic patients and healthy subjects," Optics & Photonics Taiwan, International Conference 2012, Taipei, Taiwan, R.O.C., December 2012.
3. **Ching-Cheng Chuang**, Tsuo-Hung Lan, Chung-Ming Chen, Yao-Sheng Hsieh, Chun-Yang Wang, Ching-Po Lin, and Chia-Wei Sun*, "Alzheimer's disease diagnosis based on near-infrared brain volumetric imaging: a feasibility study by detecting brain structural information with Monte Carlo simulation," International Photonics Conference 2011, Tainan, Taiwan, R.O.C., December 2011.
4. Chun-Yang Wang, Ming-Lung Chuang, Yo-Wei Lin, Shinn-Jye Liang, Yao-Sheng Hsieh,

**Ching-Cheng Chuang**, Jui-che Tsai, Chih-Wei Lu, Po-Lei Lee, and Chia-Wei Sun*, "Skeletal muscle ozygenation measured at venous occusion by diffuse optical spectroscopy imaging in Intensive care medicine," Optics and Photonics Taiwan 2010, Tainan, Taiwan, R.O.C., December 2010. (2010 台灣光電科技研討會暨國科會光電學門成果發表會優秀論文獎)

5. Yao-Sheng Hsieh, Yi-Ching Ho, Shyh-Yuan Lee, Chih-Wei Lu, **Ching-Cheng Chuang**, Chun-Yang Wang, and Chia-Wei Sun*, "Dental calculus image based on optical coherence tomography," Optics and Photonics Taiwan 2010, Tainan, Taiwan, R.O.C., December 2010.
6. **Ching-Cheng Chuang**, Chung-Ming Chen, Chia-Yen Lee, Yao-Sheng Hsieh, Chun-Yang Wang, Arthur Chiou, Jui-che Tsai, Po-Lei Lee, Chih-Wei Lu, and Chia-Wei Sun*, "Dynamics modeling of photon migration in human breast based on the three-dimensional Monte Carlo algorithm," Optics and Photonics Taiwan 2009, Taipei, Taiwan, R.O.C., December 2009.
7. Chun-Yang Wang, Shinn-Jye Liang, Yao-Sheng Hsieh, **Ching-Cheng Chuang**, Ming-Lung Chuang, Arthur Chiou, Jui-che Tsai, Chung-Ming Chen, Po-Lei Lee, Chih-Wei Lu, and Chia-Wei Sun*, "Metabolic detection of extremities during venous occlusion test based on near-infrared spectroscopy," Optics and Photonics Taiwan 2009, Taipei, Taiwan, R.O.C., December 2009.
8. Yao-Sheng Hsieh, Yu-Tsung Wu, Arthur Chiou, Chun-Yang Wang, **Ching-Cheng Chuang**, Ming-Lung Chuang, Chung-Ming Chen, Jui-che Tsai, Chih-Wei Lu, Po-Lei Lee, and Chia-Wei Sun*, "Correlations between tissue oxygenation and erythrocyte elasticity in human tissue," Optics and Photonics Taiwan 2009, Taipei, Taiwan, R.O.C., December 2009.

**C. 專書 (Books)**

1. Chia-Wei Sun*, **Ching-Cheng Chuang**, "Chapter 3: Hemodynamics study based on near-infrared optical assessment," Hemodynamics, ISBN 979-953-307-404-6, Intech, Croatia, 2012. (Co-first author)

D. 專利 (Patents)

**中華民國專利：**

1. 近紅外光血氧量測探頭構造，中華民國專利發明第 M447757 號，發明人：葉重凱、**莊競程**，公告日：2013/03/01。
2. 一種牙結石成像方法，中華民國專利發明第 I481392 號，發明人：李士元、孫家偉、何怡青、謝曜聲、**莊競程**，公告日：2015/04/21。
3. 大腦體積量測系統，中華民國專利發明第 I549654 號，發明人：孫家偉、**莊競程**、謝曜聲，公告日：2016/09/21。

**美國專利：**

1. A system for measuring brain volume, United States Pub. No.: US 2014/0046170 A1, Inventors: Chia-Wei Sun, **Ching-Cheng Chuang**, Yao-Sheng Hsieh, Pub. Data: 2014/02/13.

**中國專利：**

1. 大腦體積量測系統，中國發明專利公布號：CN 103565440 A，發明人：發明人：孫家偉、**莊競程**、謝曜聲，公告日：2014/02/12。

**榮 譽 與 獎 勵**

2012 年　　第九屆國家新創獎
得獎題目：近紅外光大腦體積造影 (Near-infrared brain volumetric imaging)