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Education :

Ph.D., Nuclear Engineering Department (Medical Physics) University of Missouri, Columbia, MO, U.S.A.

Career Experience :

Medical Physicist, Erie County Medical Center, Buffalo, NY, U.S.A.

R.A., Nuclear Engineering Department, University of Missouri, Columbia, MO, U.S.A.

T.A., Department of Chemical Engineering, TamKang University, Taiwan

Courses Taught :

Radiation Physics

Seminars

Scientific English

Professional Fields :

Medical physics

Radiation applications

Research Interests :

Diagnostic medical physics quality control and assurance Radiation applications

Representative Publication in 7 Years :

2016

1. **Kai-Yuan Cheng^{†*}**, Ling-Ling Hsieh[†], Cheng-Ting Shih, A comprehensive evaluation of NIPAM polymer gel dosimeters on three orthogonal planes and temporal stability analysis, *PLoS One*, (SCI, Category= Multidisciplinary Sciences, Impact Factor:3.234, Rank:9/57=15.7%) [通訊作者]
2. Kai-Yuan Cheng, Sih-Ying Chen, Jiunn-I Shieh, Yi-Ying Wu, Ling-Ling Hsieh*, A novel polymer gel-loading phantom for magnetic resonance imaging, *Arabian Journal for Science and Engineering*, 41 (1):163-167, 2016 [第一作者]

2015

3. Cheng-Kai Huang, Jay Wu, Kai-Yuan Cheng, Lung-Kwang Pan, Optimization of imaging parameters for SPECT scans of [99mTc]TRODAT-1 using Taguchi analysis, *PLoS One*, 10(3): e0113817, 2015

2014

4. Jiunn-I Shieh, Kai-Yuan Cheng, Huey-Lih Shyu, Yi-Chen Yu, Ling-Ling Hsieh*, Effects of composition interactions on the response of a turnbull blue radiochromic gel dosimeter, 104:40-44, 2014

5. Yen-Li Chen, Bor-Tsung Hsieh, Chih-Ming Chiang, Cheng-Ting Shih, Kai-Yuan Cheng*, Ling-Ling Hsieh*, Dose verification of a clinical intensity-modulated radiation therapy eye case by the magnetic resonance imaging of N-isopropylacrylamide gel dosimeters, *Radiation Physics and Chemistry*, 104: 188-191, 2014
6. Mu-Hsiung Chen, Jenny Zwei-Chieng Chang, Sang-Heng Kok, Yi-Jane Chen, Yao-Der Huang, Kai-Yuan Cheng*, Chun-Pin Lin, Intraobserver reliability of landmark identification in cone-beam computed tomography-synthesized two-dimensional cephalograms versus conventional cephalometric radiography: a preliminary study, *Journal of Dental Sciences* (SCI, Category= Dentistry, Oral Surgery & Medicine, Impact Factor:0.347, Rank:78/82=95.1%) [通訊作者]

2013

7. Chih-Ming Chiang, Bor-Tsung Hsieh, Jiunn-I Shieh, Kai-Yuan Cheng, Ling-Ling Hsieh, An approach in exploring the fundamental dosimetric characteristics for a long shelf life irradiated acrylamide-based gel, *Journal of Radioanalytical and Nuclear Chemistry*, 298:1435-1445, 2013 (SCI, Category= Nuclear Science & Technology, Impact Factor:1.467, Rank:3/34=8.8%)
8. Ming-Che Chang, Jin-Hua Chen, Ji-An Liang, Wen-Sheng Huang, **Kai-Yuan Cheng**, Chia-Hung Kao, PET or PET/CT for detection of peritoneal carcinomatosis a meta-analysis, *Clinical Nuclear Medicine*, 38 (8):623-629, 2013 (SCI, Category= Radiology, Nuclear Medicine & Medical Imaging, Impact Factor: 2.955, Rank:26/120=21.6%)
9. 郭峯伶,韓淑珍,蔡建中,林俊元,陳怡,王石補,**鄭凱元***,利用量化的方法於冠狀動脈電腦斷層攝影對血管阻塞之評估, *中華放射線技術學雜誌*, 37(2):113-120, 2013 [通訊作者]
10. Chung-Chieh Huang, **Kai-Yuan Cheng**, Kuang-Ching Chiu, Cheng-Kai Huang, Guang-Uei Hung, Jainn-Shiun Chiu, Hot gauntlet sign on F-18 FDG PET/CT, *Annals of Nuclear Medicine and Molecular Imaging*, 26(1):34-37, 2013
11. Cheng-Kai Huang, Shan Ho Chan, Guang-Uei Hung, Jainn-Shiun Chiu, Kuang-Ching Chiu, **Kai-Yuan Cheng***, A technique of cardiac image fusion from gated myocardial perfusion SPECT and 64-slice CT, *中華放射線技術學雜誌*, 37(1):56-61, 2013 [通訊作者]
12. Ming-Che Chang, Jin-Hua Chen, Ji-An Liang, Kuang-Tao Yang, **Kai-Yuan Cheng**, Chia-Hung Kao, Accuracy of whole-body FDG-PET and FDG-PET/CT in M staging of nasopharyngeal carcinoma: a systematic review and meta-analysis, *European Journal of Radiology*, 82(2):366-373, 2013 (SCI, Category= Radiology, Nuclear Medicine & Medical Imaging, Impact Factor:2.512, Rank:41/120=34.1%)

2012

13. Cheng-Kai Huang, **Kai-Yuan Cheng**, Kuang-Ching Chiu, Jainn-Shiun Chiu, Looking without seeing: a

- easily overlooked posterior bladder layering sign on FDG PET/CT, *Annals of Nuclear Medicine and Molecular Imaging*, 25(4):221-222, 2012
14. Ming-Che Chang, Jin-Hua Chen, Ji-An Liang, Kuang-Tao Yang, **Kai-Yuan Cheng**, Chia-Hung Kao, 18F-FDG PET or PET/CT for detection of metastatic lymph nodes in patients with endometrial cancer: a systematic review and meta-analysis, *European Journal of Radiology*, 81(11):3511-3517, 2012 (SCI, Category= Radiology, Nuclear Medicine & Medical Imaging, Impact Factor:2.512, Rank:41/120=34.1%)
 15. Min-Kuei Tsai, Hueisch-Jy Ding, Hsueh-Chou Lai, Kuo-Yang Yen, Chia-Ing Li, Yu-Yi Lin, **Kai-Yuan Cheng***, Keh-Bin Wang, and Chia-Hung Kao*, Detection of gastroesophageal reflux esophagitis using 2-fluoro-2-deoxy-d-glucose positron emission tomography, *The Scientific World Journal*, 2012:702803, 2012(SCI, Category= Multidisciplinary Sciences, Impact Factor:1.730, Rank=13/56=23.2%) [通訊作者]
 16. Ling-Ling Hsieh, **Kai-Yuan Cheng**, Bor-Tsung Hsieh, A novel thin NIPAM gel cassette dosimeter for photon-beam radiotherapy, *PLoS ONE*, 7(3):e31836, 2012 (SCI, Category= Multidisciplinary Sciences, Impact Factor:3.730, Rank=7/56=12.5%)
 17. 趙真,田雨生,蘇冠豪,張振苕,鄭凱元*,以像素值評估婦女乳房組織中乳腺及脂肪比例, *中華放射線技術學雜誌*, 36(1):21-26, 2012 [通訊作者]
 18. Ming-Che Chang, MD, Jin-Hua Chen, PhD, Ji-An Liang, MD, Cheng-Chieh Lin, MD, PhD, Kuang-Tao Yang, MD, **Kai-Yuan Cheng**, PhD, Jun-Jun Yeh, MD, Chia-Hung Kao, MD, Meta-analysis : comparison of F-18 fluorodeoxyglucose-positron emission tomography and bone scintigraphy in the detection of bone metastasis in patients with lung cancer, *Academic Radiology*, 19(3):349-357, 2012 (SCI, Category= Radiology, Nuclear Medicine & Medical Imaging, Impact Factor:1.914, Rank=51/120=42.5%)

2011

19. Bor-Tsung Hsieh, Chen-Yu Chang, Ying-Chen Chang, Kai-Yuan Cheng*, Relationship between the level of essential metal elements in human hair and coronary heart disease, *Journal of Radioanalytical and Nuclear Chemistry*, 290:165-169, 2011. (SCI, Category= Nuclear Science & Technology, Impact Factor:1.467, Rank:3/34=8.8%) [通訊作者]
20. 黃耀德,陳慧曄,陳木熊,鄭凱元,使用改良式下斜位咬合攝影法偵測下頷唾液腺結石, *中華放射線技術學雜誌*, 35(3):175-180, 2011
21. Cheng-Kai Huang, **Kai-Yuan Cheng***, A technical note of ¹³¹I-6 -iodomethyl-19-norcholesterol SPECT/CT for adrenal cortical imaging: short communication, *中華放射線技術學雜誌*, 35(2):118-122, 2011[通訊作者]

2010

22. **Kai-Yuan Cheng**, Kuo-Shan Yao, Hsueh-Hsia Lo, Chen-Yu Chang, and Po-Hsiang Chen, Photoelectrocatalytic degradation of isopropyl alcohol by TiO₂/Ti thin-film electrode, *Advanced Materials Research*, 123-125:165-168, 2010 (EI) [第一作者]
23. **Kai-Yuan Cheng**, Ling-Ling Hsieh, Kuo-Shan Yao, Ching-Hsing Lin, En-Jung Chang, and Chen-Yu Chang, Decomposition of wastewater containing isopropyl alcohol using the gamma-ray/hydrogen peroxide process, *Journal of Environmental Engineering and Management*, 20(3):151-156, 2010 [第一作者]

2009

24. 賴南谷,田雨生,廖英蘭,鄭凱元,蔡惠予, 探討 CT-SD16 固態偵檢器應用於電腦斷層掃描 X 射束劑量品質的可行性, *中華放射線技術學雜誌*, 33(2):85-92, 2009
25. Hon-Ki Hsu, Cheng-Kai Huang, Yu-Lin Bai, **Kai-Yuan Cheng**, Guang-Uei Hung, False-positive bony FDG accumulations due to fractures in a patient with lung cancer: the value of integrated information of PET/CT, *Annals of Nuclear Medicine and Sciences*, 22(3):183-187, 2009

Conference Papers :

2016

1. 唐宗恆,陳明至,歐陽均朋,鄭凱元, 不同掃描參數在電腦斷層濾波反投影和疊代重組之客觀分析-假體研究, 中華民國醫事放射學會第 49 次年會暨國際醫學影像學術研討會, March 27, 台中, 2016

2015

2. Tsung-Chieh Huang, **Kai-Yuan Cheng**, Ho-Hsing Chen, Ling-Ling Hsieh, Tridimensional dosimetric characterization of MRI-based polymer gel for clinical radiotherapy treatment, 15th international congress of radiation research, 25-29 May, Kyoto, Japan, 2015

2014

3. Hsieh, Ling-Ling, Chen, Chun-Wen, Lin, Cheng-Hsun, Yeh, Shann-Horng, **Cheng, Kai-Yuan**, Lin, Guo-Long, Radiation dose evaluation of pediatric voiding cystourethrography – phantom study, 2014 symposium on radiation measurements and applications (SORMA XV), June 9-12, U.S.A., 2014
4. 陳淑珍,鄭凱元,呂佳興, 利用雙源電腦斷層之虛擬無造影劑影像之可行性探討, 中華民國醫事放射學會第 47 次年會暨國際醫學影像學術研討會, May 9, 嘉義, 2014

2012

5. 林祐瑄,史天宇,施政廷,張孜睿,李明哲,鄭凱元,吳杰, 利用蒙地卡羅方法量化一般 X 光影像之骨質密度, The 7th International Symposium of Medical Imaging and Radiological Sciences, May 26, Kaohsiung, 2012
6. 楊芷絮,鄭凱元,劉泰程, 初步分析某醫學中心五歲小兒電腦斷層之輻射劑量, The 7th International Symposium of Medical Imaging and Radiological Sciences, May 26, Kaohsiung, 2012

2011

7. I-Ting Lee, Shu-Jung Chang, Kai-Yuan Cheng, The evaluation of bone density for pre-implantation via dental computed tomography, The 18th Asia & Australasia Conference of Radiological Technologists, March 26-27, Kaoshiung, 2011
8. Fung-Ling Kuo, Lung-Kwang Pan, Kai-Yuan Cheng, Application of Taguchi Method in Optimization of Neck CT Scan Parameter, The 18th Asia & Australasia Conference of Radiological Technologists, March 26-27, Kaoshiung, 2011
9. Fang-Jie Liou, Jir-Jie Yang, Pai-Jean Wu, Chau-Chin Lee, Pau-Yang Chang, Kai-Yuan Cheng, Validation of Radiation Dose in Liver Tumor Dynamic Computed Tomography, The 18th Asia & Australasia Conference of Radiological Technologists, March 26-27, Kaoshiung, 2011

2010

10. 彭炳儒, 鄭凱元,張淑容, 牙科電腦斷層攝影之臨床劑量量測, 第 5 屆國際醫學影像暨放射科學學術研討會, May 29, 花蓮 2010

2007-2001

11. C-K Huang, K-Y Cheng, Is there any relationship between 99mTc-MDP uptake in the bilateral breast and menstrual cycle?. 6th Japan Rep. of China International Joint Conference, June 7-10, 2007, Kanazawa Ishikawa, Japan
12. T-M Chao, K-Y Cheng, T. Lee, The method of optimal diagnostic digital image adjustment: abdomen, 14th Rep. of China Japan Korea International Joint Conference for Radiological Technologist, Jan. 15, 2006, TaiChung, Taiwan
13. T-M Chao, Y-F Chen, K-Y Cheng, The automatic reader of contrast-detail phantom, 14th Rep. of China Japan Korea International Joint Conference for Radiological Technologist, Jan. 15, 2006, TaiChung, Taiwan
14. E-J Chang, K-Y Cheng, Applying UV illumination technique to volatility organic Compound wastewater in the semiconductor process, 14th Rep. of China Japan Korea International Joint Conference for Radiological Technologist, Jan. 15, 2006, TaiChung, Taiwan
15. C-K Huang, K-Y Cheng, The evaluation of additional bone SPECT of lumbar spine for tumor patient

diagnosed compare with bone planar scintigraphy, 14th Rep. of China Japan Korea International Joint Conference for Radiological Technologist, Jan. 15, 2006, TaiChung, Taiwan

16. **K-Y Cheng**, B-T Hsieh, W. Huang, A study of professional competence for radiological technology department students in Taiwan area, ISRE04 Proceedings of the 3rd International Symposium on Radiation Education, Nagasaki, Aug, 23-26, 2004, Japan
17. **鄭凱元**, 我國技職校院放射技術系(科)五專部與二技學院部學生專業能力指標之建構, 九十二年度應用科學學門提昇研發能量及成果發表研習會 pp179-186, Nov. 2004
18. **鄭凱元**, 我國技職校院放射技術系學生專業能力指標之建構, 九十一年度應用科學學門提昇研發能量及成果發表研習會, pp201-210, Nov. 2003
19. **鄭凱元**, 龔建吉, 黃獻一, 廖淑端, 林松水, 放射技術實習教育品質研究, 八十九學年度技職體系建立教育夥伴關係計畫執行成果研討會, pp341-355 April, 2001

Others:

1. 專利發明: 放射治療劑量計之多重路徑量測器 中華民國專利, 新型第 M 414935 號(2011/11/01 ~ 2021/06/08) 創作人: 張振榮、謝栢滄、謝玲鈴、吳杰、張淵仁、**鄭凱元**、吳惠琪
2. 專利發明: 磁振造影凝膠劑量計掃瞄假體 中華民國專利, 新型第 M 401432 號(2011/04/11 ~ 2020/09/16) 創作人: 謝玲鈴、江志明、陳奕壇、謝栢滄、**鄭凱元**、張振榮
3. 專利發明: 管狀生體組織修復導管之動態培養系統 中華民國專利, 新型第 M400481 號(2011/03/21 ~ 2020/09/16) 創作人: 張振榮、徐惠麗、謝玲鈴、**鄭凱元**、林川雄、龔瑞英、洪千惠
4. 專利發明: 放射治療劑量之量測計 中華民國專利, 新型第 M391944 號(2010/11/11 ~ 2020/05/30) 創作人: **鄭凱元**、謝玲鈴、謝栢滄、徐惠麗