Dr. LEUNG, Peter Sai-Wing 梁世榮

B.Sc., Ph.D.(CityU London), MIET, Senior MIEEE, Chartered Engineer

---

Associate Professor, **City University of Hong Kong**

Programme Leader of MSc in Electronic and Information Engineering Programme

Room: G6359 **Tel:** (852) 3442-7757 **Fax:** (852) 2788-7791 **Email:** eeswl@cityu.edu.hk

---

Dr. Leung was born in Hong Kong, and completed his first degree at the City University, London in 1976, graduating with first class honours. He then obtained his doctorate degree in 1981 at the same university. His Ph.D. thesis was in electromagnetic analysis in linear motors in High Speed Ground Transport applications, under the supervision of the research team led by Professor Arthur J Ellison. Professor Ellison was renowned in his research in electromagnetic field analysis in electrical motors as well as in psychic and paranormal phenomena; Dr. Leung has been greatly influenced by Professor Ellison's interest in these 2 areas. Dr. Leung joined CHAM Ltd. a computer consultancy firm headed by Professor Spalding of Imperial College, University of London, as project Engineer in 1981. He was responsible for the programme development of a general-purpose 3D-field solution computer programme. In 1982, he joined the Engineering Division of ERA Technology Ltd., as Senior Engineer and was responsible for various research projects funded by industry.

He joined The Engineering Science Division of Hirst Research Centre, GEC Research Co. Ltd. as Principal Engineer, in March 1984, and was responsible for leading a project on the development of electromagnetic launchers for armour-piercing applications. In 1985 he joined the Weapon Department of Thorn EMI Electronics Ltd., and was responsible for the development of the Radar tracking of the multi-launch rocker system. In 1988, Dr. Leung moved to the USA joining Martin Marietta Aerospace in Orlando, working on the same system. In 1988 Dr. Leung joined the City University of Hong Kong as Senior Lecturer, and at present he is an Associate Professor in the Electronic Engineering Department, and team members of the Applied Electromagnetics Laboratory. His research interests has been in Electromagnetic Compatibility (EMC), including Human safety on RF exposure, EMC in Fixed Installations and Large Systems, EMC Management, and EMC in Railway Systems.

Dr. Leung is actively involved in numerous consultancy projects assisting industry, in both Hong Kong and overseas, in solving EMC/EMI problems; he is a Director of Electromagnetic Compatibility (EMC) Consulting Group of CityU Professional Services Ltd, City University of Hong Kong. He is Programme Leader of the *Master of Science in*

Electronic and Information Engineering Programme (MScEIE) of City University of Hong Kong.

Dr. Leung is also the Authorized Representative and Technical manager to the calibration of Antennas for radiated Measurement of antenna factors in accordance with ANSI C63.5-2006, and the EMC Test facilities of the City University of Hong Kong. He is also Assessor of the Hong Kong Laboratory Accreditation Scheme (HoKLAS) on EMC area, and a member of the working party on Electrical and Electronic Products, Accreditation Advisory Board, Innovation and Technology Commission (ITC), Government of Hong Kong SAR.

Dr. Leung is also the founding Chairman of EMC Hong Kong Chapter, of IEEE Hong Kong Section.

RESEARCH INTERESTS

- Electromagnetic Compatibility (EMC)
- Human safety on RF exposure
- EMI, RFI
- EMC in Fixed Installations and Large Systems
- EMC Management
- EMC in Railway Systems

On-going Sponsored EMC Research Projects

- GRF 2011 Grant - SAR Evaluation of Wireless Communication Devices with a Multi-frequency Operation
- SRG 2011 Grant - Investigation of Induced Body Current Due to Milli-meter Wave Emission
- GRF 2011 Grant - Investigation of Magnetic Field induced in Human body in High-Rise buildings
- GRF 2009 Grant - SAR Evaluation Using Fractional Body Models for Human Safety Considerations of Exposure to RFI

COURSES TAUGHT IN CITY UNIVERISTY OF HONG KONG

Post-graduate elective course:

- EE6449 – EMC Electromagnetic Compatibility - EMC Theory, Design and Measurement

- EE5604 - Applied Electromagnetics in Electronic Design

SELECTED PUBLICATIONS

1. S W Leung, Y L Diao, KH Chan, et al: "Specific Absorption Rate Evaluation for Passengers Using Wireless Communication Devices inside Vehicles with Different Handedness, Passenger Counts, and Seating Locations" , IEEE Transactions on Biomedical Engineering, TBME-00336-2012, P1, Volume: PP, Issue 99.

2. S W Leung, K H Chan, “Development of Electromagnetic Compatibility Courses at the City University of Hong Kong”, pp50-54, IEEE Electromagnetic Compatibility Magazine, Vol 1, 2012.
3. S W Leung, K H Chan, et al,"Electromagnetic Interference of IEEE 802.11 Wireless LAN Systems in Medical Equipment", IEICE. Transactions on Communications, E94-B(5), pp 1463-1466, 2011
4. S W Leung, K H Chan, L C Fung, " Investigation of Power Frequency Magnetic Field Radiation in Typical High-Rise Building" European Transactions on Electrical Power, 2011.
5. K. H. Chan and S. W. Leung, "Evaluation of EM Field Distribution in Automobiles", Safety and EMC Magazine, pp29-33, Vol. 3, April 2010, China.
6. K H Chan, S W Leung, " 香港金融数据中心信息科技设备的实地电磁兼容评估 ", 电磁干扰与兼容, September, 2010.
7. C K Tang, K H Chan, L C Fung, S W Leung, "Electromagnetic Interference Immunity Testing of Medical Equipment to Second- and Third-Generation Mobile Phones", IEEE Transactions on Electromagnetic Compatibility, Vol. 51, No. 3, pp659-664, August 2009.
8. C K Tang, K H Chan, L C Fung, S W Leung, "Effect on radio frequency human exposure of mobile phone inside an enclosed metallic elevator", Microwave and Optical Technology Letters, 50(8), August 2008, pp 2207-2210, doi: 10.1002/mop.23612.
9. LEUNG, S W, FUNG, L C and CHAN, K H, "Consultancy Study in relation to Electromagnetic Compatibility of Ultra-wideband Radiocommunications Devices", Contract research by OFTA, HKSAR Government, Office of the Telecommunications Authority (OFTA), The government of the HKSAR, Hong Kong, PRC, 19 February 2009.
10. C. K. Tang, K. H. Chan, L. C. Fung, and S. W. Leung, "Effect on Radio Frequency human exposure of mobile phone inside an enclosed metallic elevator", Microwave and Optical Technology Letters, vol. 50, no. 8, pp. 2207-2210, August 2008.
11. K M Lee, S W Leung, Y M Siu, "Fuzzy Integration Detector for Multi-Access UWB Impulse Radio", IEEE Transactions on Aerospace and Electronic System, October 2007
12. L C Fung, K H Chan, S W Leung, Y F Wong, Paul W K Wu, and C K Tang, "EM Assessment on Human Safety of RFID System at Hong Kong International Airport", accepted to be published in Microwave and Optical Technology Letters, in 2007.
13. K H Chan, C K Tang, K H Wong, L C Fung and S W Leung, "Study of Ground Plane of Dual-Band Patch Antenna on SAR", Microwave and Optical Technology Letters, 2007.
14. Y.M. Siu, K.K. Soo, W.S. Chan and S.W. Leung, "Admission Control for Variable Spreading Gain CDMA Cellular System with Imperfect Power Control and Shadowing" Wireless Communications & Mobile Computing (WCMC) Journal, 2005.
15. K H Chan, L.C. Fung, S W Leung, “SAR of Internal Antenna in Mobile Phone Applications ", pp 286-290, Vol 45/no. 4, Microwave and Optical Technology Letters, May 2005.
16. K H Chan, L.C. Fung, S W Leung, " Experimental Study of SAR Characteristics of Mobile Phones", Microwave and Optical Technology Letters, pp.140-144, Vol 44, January 2004.

17. K H Chan, L.C. Fung, S W Leung, , " Effect of ESD Injection Locations on Induced Noise Inside a Shielded Enclosure", Microwave and Optical Technology Letters, August 2003.
18. L.C. Fung, S W Leung, K H Chan , " Experimental Study of SAR Reduction on Commercial Products and Shielding Materials in Mobile Phone Applications ", Microwave and Optical Technology Letters, March 2003.
19. L C Fung, S W Leung, Wan Lixi "Investigation of Ground Bounce effect on PCBs" Microwave and Optical Technology Letters, Vol. 32, number 4, pp259-264, 2002.
20. S W Leung, J Minett, Y M Siu, "A Fuzzy Approach to Signal Integration", IEEE Transactions on Aerospace and Electronic System, Vol.38, pp.346-351, January 2002.
21. Y.M. Siu, Y S Zhu and S W Leung, "System Performance Enhancement in CDMA Mobile System with Up-link Adaptive Power-control Based on Fuzzy Logic", IEEE Transactions on Professional Communications, October 2001, Volume 19, issue 1, pp. 25-35.
22. L.C. Fung, S W Leung, Lixi Wan : " A Model for Cross-Talk Prediction in PCB Layout", Microwave and Optical Technology Letters, pp142-144, Vol. 30, no 2, July 2001.
23. Y M Siu, W S Chan and S W Leung, " A SFH Spread Spectrum Synchronisation Algorithm for Data broadcasting", IEEE Transactions in Broadcasting, pp71-75, Vol. 47, no. 1, March 2001.
24. S W Leung and James W. Minett, "The Use of Fuzzy Spaces in Radar Signal Detection", pp175-184, Vol. 114/2, International Journal of Fuzzy Sets and Systems, September 2000.
25. S W Leung, J Minett and C F Chung, "An Analysis of the Shadow Feature Technique in Radar Detection" IEEE Transactions on Aerospace and Electronic System, vol. 35 no.3, pp1104-1106, July 1999.
26. Edward K N Yung, S W Leung, " An Integrated Training Program on Product Design in an Undergraduate Course", IEEE Transactions on Education, pp46-52,Vol 40, no.1. Feb 1997.
27. Y S Zhu, S W Leung & C M Wong " Adaptive Non-uniform Sampling Delta Modulation for Audio/Image Processing" IEEE Transactions On Consumer Electronics, pp1062-1072, vol. 42, no.4, Nov. 1996
28. Y S Zhu, S W Leung & C M Wong "A Digital Audio Processing System Based on Non-uniform Sampling Delta Modulation" IEEE Transactions On Consumer Electronics, pp80-86, vol. 42, Feb. 1996
29. Y S Zhu and S W Leung, "Non-uniform Sampling Delta Modulation for Digital Audio Processing", Chinese Journal of Acoustics (English Language Edition), vol. 4, pp367-374, 1996, copyright by Acoustical Society of China, PRC and Allerton Press INC., USA
30. Edward K N Yung, S W Leung: " An overview of EMC/EMI requirements on Industrialized Countries by 1996", pp.320-323, vol. 9. Journal of Electronic Measurement and Instrument, 1995, China Electronic Society.
31. Y S Zhu and S W Leung "On the Chebyshev Nonuniform Sampling Technique" Journal of South China Univ. of Tech. (Natural Science), No.8, 1995, pp. 111-120.
32. Y S Zhu and S W Leung, "Comments on Parseval Relationship of Nonuniform Samples of One-and Two-dimensional Signals" IEEE Transactions On Signal Processing, pp 2183, August 1994.
33. S W Leung, "A Radar Range Tracker Using Adaptive Switching Model" Electronics Letters, Vol. 28, No. 12, pp. 1133-1135, June 1992.

34. Edward K N Yung and S W Leung, "Training Programme on Engineering Applications at the City Polytechnic of Hong Kong" IEE Science and Education Journal, Vol. 1, No. 4, pp 165-170, 1992.