



Kam Weng TAM, Ken 譚錦榮

Professor

CEng, IET Fellow

Director of Centre for Science and Engineering Promotion

Academic Qualifications

- PhD in Electrical and Computer Engineering of [Technical University of Lisbon](#), Portugal (2002)
- PhD in Electrical and Electronics Engineering of [University of Macau](#) (2000)
- BSc in Electrical and Electronics Engineering of [University of Macau](#) (1993)

Working Experience

- Associate Dean (Research and Graduate Studies) of Faculty of Science and Technology, University of Macau (September 2013 – June 2020)
- Head of Department of Electrical and Computer Engineering of Faculty of Science and Technology, University of Macau (September 2013 – August 2014)
- Interim Head of Department of Electrical and Computer Engineering of Faculty of Science and Technology, University of Macau (September 2012 – August 2013)
- Director of Government Relations and Industry Liaison of Faculty of Science and Technology, University of Macau (March 2012 – August 2013)
- General Manager of Chipidea Microelectrónica (Macao) (2001 – 2003)

- Co-Founder of Chipidea Microelectrónica (Macao) (2001)
 - Director of INESC-Macau (2000 to 2001)
 - Visiting Research Assistant of Polytechnic University of Madrid, Spain (1996)
 - Research Assistant of INESC-Lisbon, Portugal (1993 to 1996)
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Award and Honor

Honors and Awards

- Fellow of The Institute of Engineering and Technology (2014)
- Third Class Prize of Technological Invention Award of Macao Science and Technology Awards (2012)
- UM Academic Staff Award (2011)
- Nominee of IEEE Meritorious Achievement Award (2010)
- Recipient of IEICE Communications Society Distinguished Contributions Award (2009)
- Recipient of Young Scholar Award of University of Macau (2001)
- Recipient of Best Poster Paper at the GAAS'99 conference held in Munich, Germany (1999)

Student Honors and Awards under Advisory

- Pedro Cheong, Nominee of Graduate Fellowship of IEEE Microwave Theory and Techniques Society (2011)
- Li Yang and Pedro Cheong, Best Student Paper Award of International Symposium on Antennas and Propagation (2010)
- Pedro Cheong, Sam Ngai Lam and Yao Quan Qui, Honorary Student Paper Award of International Conference on Applications of Electromagnetism

- and Student Innovation Competition Awards (2010)
- Daniel Piscarreta, Honorary Student Paper Award of International Conference on Applications of Electromagnetism and Student Innovation Competition Awards (2010)
 - Bin-Kai Ou, Li Yang and Pedro Cheong, Bronze Award of Macao Information and Communication Technology Awards (2010)
 - Lai Kuong In et al., Application Award of IEEE Project Competition (2009)
 - Tou Wai Kei et al., Application Award of IEEE Project Competition (2008)
 - Chon Chio Leong and Sio Weng Ting, Best Paper Award of Cross-Strait Tri-Regional Radio Science and Wireless Technology Conference (2008)
 - Zephyr Su, Catherine Tam and Bruce Chan, Distinguished Prize Winner of Challenge Cup (2005)
 - Fok Si Weng and Hong Sio Ian, Second Runner Up of IEEE Project Competition (2003)
 - Fok Si Weng, IEEE Microwave Theory and Techniques Society Undergraduate Scholarship Recipient (2003)
 - Chiang Chun Pong and Lei Ka Pou, Second Runner Up of IEEE Project Competition (2002)
 - Chiang Chun Pong, IEEE Microwave Theory and Techniques Society Undergraduate Scholarship Recipient (2002)
 - Ho Ka Meng, Ip Chi Kan and Lou Ka Man, 1st Prémio Jovem Investigador of Instituto Internacional Macau (2000)
 - Ho Ka Meng, Ip Chi Kan and Lou Ka Man, The First Prize of IEEE Project Competition (2000)
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Teaching

Undergraduate Courses

- Applied Electronics III (ELEC321)
- Project (ELEC402)
- System Design (ELEC437)
- Applied Electronics (ECEB310)
- Design Project I (ECEB410)
- Design Project II (ECEB420)
- Electricity and Life (University General Education Program for non-engineering students) (ELEC111)

Graduate Courses

- Introduction to Research (IMSE001)
 - Thesis (IMSE999)
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Research

Research Interests

- RF/Microwave Filters
- Microwave Differential Circuits
- Multi-functional Guided-/Radiated Wave Components
- Phased Antenna Array
- Materials Analysis Using RF/Microwave
- Wireless Flame Sensor Network
- Terahertz Science and Technology

Recent Research Projects

Projects funded by [University of Macau](#)

- “Miniaturization techniques for microwave tunable circuits” (Co-PI, 2009)
- “Electromagnetic exposure research on WLAN net-wireless” (PI, 2008)
- “Design of a miniaturized broadband RFID passive tag antenna” (PI, 2008)
- “Electromagnetic radiation monitoring of mobile communication systems” (PI, 2007)
- “Design and implementation of miniaturized RF/MW bandpass filter with spurious response suppression using defected ground structure” (PI, 2006)
- “RF microelectronics for SOC – Elemental analysis and design of the reusable RF transceiver platform” (PI, 2005)

Projects funded by [**The Science and Technology Development Fund**](#)

- Terahertz Wireless Front-end System using ZnTe-based Thin Film Structures for Multi-Gb/s Communications (PI, 2014 – 2017)
- “Miniaturized and Multi-Functional Switched Beam Antenna Arrays for UHF RFID” (PI, 2012 – 2014)
- “Wireless partial discharge detectors for on-line monitoring of high voltage facilities” (PI, Jan. 2012 – Dec. 2012)
- “ZnMgS based UV flame detectors for fire-safety applications” (PI, 2009 – 2011)
- “Multi-layer multi-conductor transmission line and its applications to differential microwave circuits” (Co-PI, 2010 – 2011)
- “RFID automatic circulation system for FDCT library” (PI, 2009 – 2010)
- “Wireless technology study summer camp” (Co-PI, 2012)
- “Wireless technology study summer camp” (PI, 2011)
- “Wireless technology study summer camp” (PI, 2010)
- “Wireless technology study summer camp” (PI, 2009)
- “Wireless technology study summer camp” (PI, 2008)
- “An integrated phased antenna array using indirect controllable phase technique” (PI, 2007 – 2008)

Projects funded by **Bureau of Telecommunication Regulation**

- “Research on 4G LTE mobile communications in Macao” (PI, 2014)
- “Study on service-based pricing model for underground telecommunication ducts in Macao” (PI, 2014)
- **“Research on TV services in Macao”** (PI, Nov. 2013 – Dec. 2014)
- “Study of underground telecommunication duct detection in Macao” (PI, Nov. 2013 – Sept. 2014)
- **“Investigation assistance to Bureau of Telecommunications Regulation (DSRT) for CTM’s network interruption on 6 February 2012”** (PI, Feb. 2012 – Dec. 2012)
- “Study of the needs of mobile communications operating on Light Rapid Transit (LRT) system in Macao” (PI, 2011 – 2012)
- “Study of mobile communication service billing in Macao” (PI, 2011 – 2012)
- “Study of RFID systems – standards, applications & measurements in Macao” (PI, 2009 – 2010)
- “Study of wireless local area network (WLAN) usage and security in Macao” (PI, 2008 – 2009)
- “Radiation safety study for 2G & 3G mobile telecommunication base stations in Macao” (PI, 2007 – 2008)
- “Indoor radiation evaluation and safety standard study for mobile telecommunication handset” (PI, 2007 – 2008)
- “Study on electromagnetic radiation safety of mobile telecommunications base stations in Macao” (PI, 2006 – 2007)

Selected Publications

Journal Papers

1. P. Cheong, K. F. Chang, W. W. Choi and K. W. Tam, "A highly integrated antenna-triplexer with simultaneous three-port isolations based on multi-mode excitation," accepted by *IEEE Trans. Antennas Propag.* 2015.
2. W. Yang, K. W. Tam, W. W. Choi, W. Che and H. T. Hui, "Novel polarization rotation technique based on an artificial magnetic conductor and its application in a low-profile circular polarization antenna," *IEEE Trans. Antennas Propag.* vol. 62, pp. 6206-6216, Dec, 2014.
3. H. Wang, L. M. Gao, K. W. Tam, W. Kang and W. Wu, "A wideband differential BPF with multiple differential- and common-mode transmission zeros using cross-shaped resonator," *IEEE Microw. Wireless Compon. Lett.* vol. 24, pp. 854-856, Dec, 2014.
4. H. Wang, K. W. Tam, W. W. Choi, W. Y. Zhuang, S. K. Ho, W. Kang and W. Wu, "Analysis of coupled cross-shaped resonator and its application to differential bandpass filters design," *IEEE Trans. Microw. Theory Tech.*, vol. 62, pp. 2942-2953, Dec 2014.
5. R. Gomez-Garcia, M. Sanchez-Soriano, K. W. Tam and Q. Xue, "Flexible filters," *IEEE Microw. Magazine*, pp. 43 – 54, July, 2014.
6. P. Cheong, K. Wu, W. W. Choi and K. W. Tam, "Yagi-Uda antenna for multiband radar applications," *IEEE Antennas Wireless Propag. Lett.*, vol. 13, pp. 1065 – 1068, 2014.
7. H. Wang, K. W. Tam, S. K. Ho, W. Kang and W. Wu, "Short-ended self-coupled ring resonator and its application for balanced filter design," *IEEE Microw. Wireless Compon. Lett.* vol. 24, pp. 312-314, May, 2014.
8. H. Wang, K. W. Tam, S. K. Ho, W. Kang and W. Wu, "Design of ultra-wideband bandpass filters with fixed and reconfigurable notch bands using terminated cross-shaped resonators," *IEEE Trans. Microw. Theory Tech.*, vol. 62, pp. 252-265, Feb, 2014.
9. H. Wang, B. K. Ou, K. W. Tam and W. Wu, "A novel decoupling network using parallel coupled lines for increasing the port isolation of two coupled antennas," *Prog. Electromagnetics Research Lett.* vol. 42, pp. 109-118, 2013.

10. H. Wang, Y. Q. Yang, W. Kang, W. Wu, K. W. Tam and S. K. Ho, "Compact ultra-wideband differential bandpass filter using self-coupled ring resonator," *Electron Lett.* vol. 49, No. 18, 29th Aug, 2013.
11. J. R. Mao, W. W. Choi, K. W. Tam, W. Che and Q. Xue, "Tunable bandpass filter design based on external quality factor tuning and multiple mode resonator for wideband applications," *IEEE Trans. Microw. Theory Tech.*, vol. 61, pp. 2574-2584, Jul, 2013.
12. Suyang Shi, W. W. Choi, Wenquan Che, K. W. Tam and Q. Xue "Ultra-wideband differential bandpass filter with narrow notched band and improved common-mode suppression by DGS," *IEEE Microw. Wireless Compon. Lett.* vol. 22, pp. 185-187, April, 2012.
13. Y. H. Lai, W. Y. Cheung, S. K. Lok, G. K. L. Wong, S. K. Ho, K. W. Tam and I. K. Sou "Rocksalt MgS solar blind ultra-violet detectors," *AIP Advances*, pp. 012149, 2012.
14. Li Yang, Pedro Cheong, Wai-Wa Choi, Kam-Weng Tam and Ke Wu "Miniaturized parallel coupled-line filter-antenna with spurious response suppression," *IEEE Microw. Wireless Compon. Lett.* vol. 5, pp. 726-729, May, 2011.
15. Pedro Cheong, Ka-Fai Chang, Ying-Hoi Lai, Sut-Kam Ho, lam-Keong Sou and Kam-Weng Tam, "A ZigBee-based wireless sensor network node for ultraviolet detection of flame," *IEEE Trans. Ind. Electron.* vol. 11, pp. 5271-5277, Nov., 2011
16. Pedro Cheong, Ting-Shan Lv, Wai-Wa Choi and Kam-Weng Tam, "A compact microstrip square-loop dual-mode balun-bandpass filter with simultaneous spurious response suppression and differential performance improvement," *IEEE Microw. Wireless Compon. Lett.* vol. 4, pp. 77-79, April, 2011.
17. K. W. Tam, "Macao's wireless technology study summer camp and its five wireless games," *IEEE Microw. Magazine*, vol. 11, pp. 103 – 105, 2010.
18. C. P. Chiang and K. W. Tam, "Compact quasi-elliptic microstrip bandpass filter using terminated anti-parallel coupled-line," *IET Microw. Antennas*

- Propag.*, vol. 3, pp. 1206 – 1210, 2009.
19. D. Piscalreta, S. W. Ting and K. W. Tam, "Microstrip parallel coupled-line bandpass filter with selectivity improvement using U-shaped defected ground structure," *Microwave and Optical Technology Lett.*, vol. 50, pp. 911-914, April 2008.
 20. K. H. Chiang and K. W. Tam, "Electromagnetic assessment on human safety of mobile communication base stations at University of Macau," *American Journal of Applied Sciences*, vol. 5, pp. 1344 – 1347, 2008.
 21. K. H. Chiang and K. W. Tam, "Microstrip monopole antenna with enhanced bandwidth using defected ground structure," *IEEE Antennas Wireless Propag. Lett.*, vol. 7, pp. 532 – 535, 2008.
 22. S. W. Ting, K. W. Tam and R. Martins, "Novel defected ground structure element with triple transmission zeros and its application for multispurious suppression of microstrip parallel-coupled-line bandpass filter," *Microwave and Optical Technology Lett.*, vol. 49, pp. 1409-1412, June 2007.
 23. K. M. Ho, H. K. Pang and K. W. Tam, "Dual-band bandpass filter using defected ground structure," *Microwave and Optical Technology Lett.*, vol. 48, pp. 2259-2261, November 2006.
 24. W. W. Choi, K. W. Tam and R. Martins, "Spurious suppressed microstrip bandpass filter with two transmission zeros," *Microwave and Optical Technology Lett.*, vol. 48, pp. 1979-1981, October 2006.
 25. G. Y. Su, C. N. Chan, U. L. Tam and K. W. Tam, "Compact microstrip lowpass filter using a meander-line structure," *Microwave and Optical Technology Lett.*, vol. 48, pp. 1339-1341, July 2006.
 26. W. W. Choi, K. W. Tam and R. Martins, "Design of microwave lumped and transversal bandpass filter with noise reduction," *Microwave and Optical Technology Lett.*, vol. 48, pp. 1161-1164, June 2006.
 27. S. W. Ting, K. W. Tam and R. P. Martins, "Miniaturized microstrip lowpass filter with wide stopband using double equilateral U-shaped defected

- ground structure," *IEEE Microw. Wireless Compon. Lett.* vol. 16, pp. 240-242, May, 2006.
28. S. W. Fok, P. Cheong, K. W. Tam and R. P. Martins, "A novel microstrip square-loop dual-mode bandpass filter with simultaneous size reduction and spurious response suppression," *IEEE Trans. Microw. Theory Tech.*, vol. 54, pp. 2033-2041, May 2006.
29. P. Cheong, S. W. Fok and K. W. Tam, "Miniaturized parallel coupled-line bandpass filter with spurious response suppression," *IEEE Trans. Microw. Theory Tech.*, vol. 53, pp. 1810-1816, May 2005.
30. K. F. Chang and K. W. Tam, "Miniaturized cross-coupled filter with second and third spurious responses suppression," *IEEE Microw. Wireless Compon. Lett.* vol. 15, pp. 122-124, February, 2005.

Conference Papers

IEEE International Microwave Symposium

1. Suyang Shi, Wai-Wa Choi, Kam-Weng Tam, Che Wenquan and Xue Quan, "Differential UWB power-distribution network with equal power ratio and out-of-phase single-ended outputs," in *IEEE MTT-S Int. Microwave Symp. Dig.*, June 2012, pp. 1-3.
2. Chan-Keong Chio, Ting Sio-Weng, Eng-Hock Lim and Tam Kam-Weng, "Compact dual-band quasi-elliptic bandpass filter with transmission-zero control," in *IEEE MTT-S Int. Microwave Symp. Dig.*, June 2012, pp. 1-3.
3. Pedro Cheong, Kuong-In Lai and Kam-Weng Tam, "Compact Wilkinson power divider with simultaneous bandpass response and harmonic suppression," in *IEEE MTT-S Int. Microwave Symp. Dig.*, May 2010, pp. 1588-1591.
4. S. W. Ting, K. W. Tam and R. Martins, "Compact microstrip quasi-elliptic bandpass filter using open-loop dumbbell shaped defected ground structure," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Jun. 2006, pp. 527-530.

5. Wai-Wa Choi, Kam-Weng Tam and Rui P. Martins, "Improvement of gain compression in microwave lumped and transversal bandpass filters," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Jun. 2005, pp. 2171-2174.
6. S. W. Fok, Pedro Cheong, K. W. Tam and R. P. Martins, "Microstrip dual-mode bandpass filter design with simultaneous size reduction & spurious response suppression," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Jun. 2005, pp. 2175-2178.
7. K. K. Sun and K. W. Tam, "A novel compact dual-mode bandpass filter with meander open-loop arms," in *IEEE MTT-S Int. Microwave Symp. Dig.*, June. 2004, pp. 1479-1482.
8. H. K. Pang, K. M. Ho, K. W. Tam and R. P. Martins, "A compact microstrip 1/4-SIR interdigital bandpass filter with extended stopband," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Jun. 2004, pp.1621 – 1624.

Asia Pacific Microwave Conference

1. Li Yang, Pedro Cheong, W. W. Choi and K. W. Tam, "Differential microstrip bandpass filter with dual-band responses using parallel-coupled line structure," to appear in *Proc. Asia-Pacific Microwave Conference*, Dec. 2012.
2. C. C. Leong, W. W. Choi and K. W. Tam, "A tunable dual-band DGS stub tapped branch-line coupler," in *Proc. Asia-Pacific Microwave Conference*, Dec. 2010, pp. 1252-1255.
3. Wai-Wa Choi and Kam-Weng Tam, "A novel compact microstrip dual-band bandpass filter based on transversal filter structure and centrally loaded resonator with independent control of passbands," in *Proc. Asia-Pacific Microwave Conference*, Dec. 2008, pp. 783-786.
4. Chung-Pong Chiang and Kam-Weng Tam, "Novel CMOS voltage sensor with process invariant threshold for passive UHF RFID transponders," in *Proc. Asia-Pacific Microwave Conference*, Dec. 2008, pp. 1-4.
5. Wai-Wa Choi, Kam-Weng Tam and R. P. Martins, "A novel microstrip transversal bandpass filter with simultaneous size reduction and spurious

- responses suppression,” in *Proc. Asia-Pacific Microwave Conference*, Dec. 2005 pp. 508-511.
6. D. Piscalreta and Kam-Weng Tam, “Miniaturized microstrip square loop resonator probe for solution sensing,” in *Proc. Asia-Pacific Microwave Conference*, Dec. 2005 pp. 249-251.
 7. K. V. Chiang, W. W. Choi and K. W. Tam, “Source degeneration inductor based noise suppression scheme for microwave lumped and transversal bandpass filter,” in *Proc. Asia-Pacific Microwave Conference*, Nov. 2003, pp.1961-1964.
 8. K. P. Lei, C .P. Chiang, W. W. Choi and K. W. Tam, “Novel coupled-line microstrip duplexer with high frequency isolation and 2nd spurious passband suppression,” in *Proc. Asia-Pacific Microwave Conference*, Nov. 2002, pp. 501-503.

International Symposium on Antennas and Propagation

1. Li Yang, Pedro Cheong, Wai-Wa Choi and Kam-Weng Tam, “A three-port integrated dual band filter-antenna module,” in *Proc. Int. Symp. Antenna and Propagation*, Nov. 2010, pp. 1029-1032.
2. Wen-Yao Zhuang, Pedro Cheong, Wai-Wa Choi and Kam-Weng Tam, “An integrated open-loop resonator bandpass filter-slot antenna with stopband improvement,” in *Proc. Int. Symp. Antenna and Propagation*, Nov. 2010, pp. 1033-1036.
3. Bin-Kai Ou, Daniel Piscalreta, Pedro Cheong, Wai-Wa Choi and Kam-Weng Tam, “Open-loop stub-loaded dual-band resonator for solution sensing,” in *Proc. Int. Symp. Antenna and Propagation*, Nov. 2010, pp. 836-839.
4. C. C. Leong, W. W. Choi and K. W. Tam, “A tunable monopole antenna using double U-shaped defected ground structure with islands,” in *Proc. Int. Symp. Antenna and Propagation*, Oct. 2009, pp. 783-786.

Professional Affiliations

- Fellow of [IET](#)
 - Senior Member of [IEEE](#)
 - Member of [IEICE](#)
 - Chair of [IEEE Macau AP/MT Joint Chapter](#) (2010 – 2011)
 - Founder of [IEEE Macau AP/MT Joint Chapter](#) (2010)
 - Member of International Steering Committee of International Symposium on Antennas and Propagation of Communication Society of [Institute of Electronics, Information and Communication Engineers \(IEICE\)](#). (2009 – Present)
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Services

Professional Services

Conference Organization

- General Chair of International Symposium on Antennas and Propagation (2010)
- Chair of Macau RFID Forum (2010)
- Chair of IEEE AP-S Chapter Chair Meeting (2010)
- Vice Chairman of Cross Strait Tri-Regional Radio Science and Wireless Technology Conference (2009)
- Chair of IEICE Technical Meeting on Antennas and Propagation (2009)
- Chair of Wireless Communication Seminar Series (2006-2009)
- Chair of Macau Session of Asia-Pacific Microwave Conference (2008)
- Vice Chair of Asia-Pacific Microwave Conference (2008)

- Co-Chair of Technical Program of IEEE MTT-S International Microwave Workshop Series on Art of Miniaturizing RF and Microwave Passive Components (2008)
- Chair of The IEEE (HK/Macau) AP/MTT Postgraduate Conference (2008)
- Chair of RFIC Seminar Series (2008)
- General Secretary of Cross Strait Tri-Regional Radio Science and Wireless Technology Conference (2006)
- Registration Committee Chair of The ISCM International Conference on Chinese Medicine & Pre-Conference Symposium on Evidence-Based Chinese Medicine” (2005)
- Finance Committee Chair of IEEJ International Analog VLSI Workshop (2004)
- Technical Program Co-Chair of The IEEE (HK/Macau) AP/MTT Postgraduate Conference (2004)
- MTT Judge of The IEEE HK AP/MTT/LEOS Postgraduate Conference (2003)

Journal Reviewer

- IEEE Transactions on Microwave Theory and Techniques
- IEEE Microwave and Wireless Components Letters
- IEEE Antennas and Wireless Propagation Letters
- IET Microwaves, Antennas & Propagation
- IEICE Electronics Express
- Journal of Electromagnetic Waves and Applications
- Radio Science
- Hong Kong Institute of Engineers Transactions
- Chinese Medicine

University Services

Laboratory

- Founder and Faculty in charge of Wireless Communication Laboratory (2002 – Present)
- Founder and Faculty in charge of Radio Frequency Integrated Circuits and Systems Laboratory (2005 – Present)
- Faculty in charge of Electronics and Digital System Laboratory (2000 – 2009)

Engineering Service

- Technical Advisor of Campus Management Office for internal Radiation Monitoring of In-Campus 2G/3G base stations (2005 – Present)
- Technical Advisor of Information and Communication Technology Office for internal Radiation Assessment of In-Campus WiFi (2009)

Committee Work

- Member of Senate of University of Macau (2012 – Present)
- Member of the Academic Council of Faculty of Science and Technology (2000 – Present)
- Member of Recruitment Panel for Full Professors/Associate Professors (2012)
- Member of Recruitment Panel for Assistant Professors (2009 – 2012)
- Member of Recruitment Panel for Laboratory Technicians (2008, 2012)

Community Services

Engineering Service

- Consultant of Bureau of Telecommunications Regulation of Macao Government (2006 – Present)

- Consultant of The Science and Technology Development Fund of Macao Government (2009 – 2010)
- Consultant of Institute for Tourism Studies of Macao Government (2007)
- Consultant of Office for the Development of the Energy Sector of Macao Government (2007)

High School Outreach

- Faculty in charge of Wireless Technology Study Summer Camp (2008 – 2011)
- Invited speaker of Science Seminar of Communication Museum (2010)
- Founder of Wireless Technology Study Summer Camp (2008)

High School Committee Work

- Council Member of The Workers' Children High School (2010 – Present)
- Honorary Adviser of the Alumni Association of The Workers' Children High School (2001 – Present)

Contact Details

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