Minchen(Tommy) Wei

Phone: (+852) 3400 3606 Email: minchen.wei@polyu.edu.hk
Web: https://www.polyucolorlab.com/

EDUCATION

The Pennsylvania State University — University Park, PA, USA
Ph.D. in Architectural Engineering — 2011-2015
Minor in Statistics

The Pennsylvania State University — University Park, PA, USA
M.Sc. in Architectural Engineering — 2009-2011

Fudan University — Shanghai, China
B.Eng. Illuminating Engineering & Light Sources — 2005-2009

ACADEMIC EXPERIENCE

The Hong Kong Polytechnic University	Hong Kong
Limin Endowed Young Scholar in Color and Imaging Science	Aug 2022 – now
Director, Colour Imaging and Metaverse Research Centre	Jul 2022 – now
Professor, Building Environment and Energy Engineering	Jul 2023 – now
Associate Professor, Building Environment and Energy Engineering	Jul 2020 – Jun 2023
Assistant Professor, Building Environment and Energy Engineering	Nov 2015 – Jun 2020

PROFESSIONAL SERVICES

Associate Editor/Senior Editor

☐ Journal of the Optical Society of America A (JOSA A)
☐ Color Research & Application
☐ LEUKOS

Guest Editor

☐ Lighting Research & Technology
☐ Color Research & Application

The International Commission on Illumination (CIE)

☐ Vice President (2023-current)
☐ National representative, Division 1 Color and Vision (2016-current)
☐ National representative, Division 8 Image Technology (2019-current)
☐ Chair, TC1-95 The Validity of the CIE Whiteness and Tint Equations (2015-current)
☐ Chair, JTC16 (D1/D8) The Validity of the Chromatic Adaptation Transforms (2018-current)
☐ Member, TC8-18 Guidelines for Definition and Evaluation of High Dynamic Range Images and Image Sequences (2021-current)
☐ Member, TC1-99 Modeling Two-dimensional Color Appearance Scales (2021-current)
☐ Member, JTC10 (D1/D8) A New Color Appearance Model for Color Management Systems: CIECAM16 (2017-current)
☐ Member, TC1-80 Methods for Psychophysical Studies for Brightness Judgements (2012-2015)
☐ Member, TC1-91 New Methods for Evaluating the Color Quality of White-Light Sources (2012-current)

☐ Member, TC1-90 Color Fidelity Index (2013-2017)

☐ Member, TC1-76 Unique Hue Data (2018-2021)

The International Commission on Illumination (CIE) – Hong Kong

☐ President (2022 – Present)

☐ Vice President (2019-2022)

☐ Member, Board of Administration (2016-current)

China Illuminating Engineering Society

☐ Secretary, Division 7 Lighting and Signaling for Transport (2017-current)

☐ Member, Division 3 Interior Lighting (2018-current)

The Illuminating Engineering Society (IES)

☐ Member, Color Committee (2016-current)

☐ Member, Color Metric Task Group (2013-2016)

☐ Advisory Member, Daylight Metrics Committee (2016-current)

Conference Chair/Committee

☐ Member, Program Committee, Computational Color Imaging Workshop (CCIW 2024).

☐ Chair Interactive Sessions, Color and Imaging Conference (2023)

☐ Member, International Advisory Committee. 7th Asia Color Association Conference (2022).

☐ Session Chair, Technical Program Committee. China International Forum on Solid State Lighting (2021, 2022).

☐ Conference Chair, The 5th CIE Expert Symposium on Color and Visual Appearance (2020)

☐ Chair Workshop Sessions, Color and Imaging Conference (2020)

☐ Member, Program Committee, IS&T London Imaging Meeting (2020)

☐ Session Chair, Color and Imaging Conference (2019)

☐ Member, Program Committee, China International Forum on Solid State Lighting (2019).

☐ Research Method Workshop Convener, CIE 2019.

☐ Member, International Organizing Committee, International Forum on Automotive Lighting (IFAL) (2015, 2016, 2017, 2018, 2019)

☐ Member, Paper Review Committee, Color and Imaging Conference (2017, 2018, 2019, 2020)

☐ Session Chair, CIE 2017 Midterm Meeting (2017)

☐ Session Chair, 2016 International Forum on Automotive Lighting (IFAL) (2016)

RESEARCH, TEACHING, & CONSULATNCY GRANTS

EXTERNAL GRANTS

☐ 2023-2024 Project funded by Facebook (USA): Gamut mapping and Tone mapping (**PI**). US$ 50,960.

☐ 2023-2023 Project funded by Facebook (USA): Optical System Prototype for Eye Tracking (**PI**). US$ 25,000.

☐ 2023-2023 Project funded by GravityXR: XR Display pipeline (**PI**). HK$ 658,950.

☐ 2022-2024 Project funded by XiaoMi: Adaptive Display Algorithms (**PI**). RMB 1,472,000.

☐ 2023-2025 National Science Foundation of China (NSFC) – China's Excellent Young Scientists Fund (**PI**). RMB 2,000,000.

□ 2023-2025 Hong Kong Research Grant Council – General Research Fund (GRF): Development of a Uniform Color Space for Stimuli under High Dynamic Range Conditions. (**PI**). HK$ 980,256.

□ 2022-2023 Project funded by Facebook (USA): Color Management of Mixed Reality Phase III (**PI**). US$ 79,000.

□ 2022-2024 Project funded by Transsion: Display calibration algorithm (**PI**). US$ 187,000.

□ 2022-2025 Hong Kong Research Grant Council – Research Impact Fund (RIF): Deeper Understanding of Color Matching Mechanism for Developing High Quality Lighting and Imaging Systems. (**PI**). HK$ 8,140,000.

□ 2022-2024 Hong Kong Research Grant Council – General Research Fund (GRF): Color Appearance of Virtual Stimuli Produced by Augmented Reality (AR). (**PI**). HK$ 838,393.

□ 2021-2022 Project funded by HUAWEI (China): Uniform Color Space. (**PI**). HK$ 760,000.

□ 2021-2024 Jiangsu Science and Technology Fund Collaboration with Hong Kong, Macao, and Taiwan Scheme: Development of Prototype for Measuring Camera Sensitivity Function. (**Co-PI**). Sharing RMB 300,000 out of RMB 800,000.

□ 2021 Google Research Scholar Program: Accurate Capture of Perceived Object Colors for Smart Phone Cameras. (**PI**). US$ 35,000. (very competitively selected worldwide).

□ 2021-2022 Project funded by Facebook (USA): Color Management of Mixed Reality Phase II (**PI**). US$ 71,500.

□ 2020-2021 Projected funded by Hong Kong SAR Electrical and Mechanical Services Department (EMSD): Provision of Engineering Analysis for Outdoor Lighting System (**PI**). HK$ 880,000.

□ 2020-2022 Project funded by HUAWEI (China): Display Color Calibration (**PI**). HK$ 895,620.

□ 2020-2021 Project funded by Facebook (USA): Color Management of Mixed Reality (**PI**). US$ 80,600.

□ 2020-2023 National Science Foundation of China (NSFC) – General Program: Two-step Chromatic Adaptation Transform for Quantifying the Effects of Adapting Chromaticities, Luminance, and Medium (**PI**). RMB 630,000 + HK$ 119,000 University matching funds.

□ 2020-2022 Hong Kong Research Grant Council – General Research Fund (GRF): Characterizing Light Source Color Rendition and Object Color Appearance Across a Wide Range of Light Levels (**PI**). HK$ 673,470 + HK$ 170,000 University matching funds.

□ 2019-2021 Hong Kong Research Grant Council – General Research Fund (GRF): Investigation of Perception Under Off-Planckian Light Sources Used for General Illumination (**PI**). HK$ 632,421 + HK$ 170,000 University matching funds.

□ 2019-2020 Project funded by OPPLE Lighting: Investigating Optimal Luminous Environment for Different Lighting Applications (**PI**). HK$ 250,000.

□ 2019-2020 Project funded by Hong Kong Environment Bureau and WSP: Illumination Level, Measurement Methodology Selection, and Assessment at Selected Areas in Hong Kong (**PI**). HK$ 224,250.

□ 2019 Harbin Institute of Technology Collaborative Research Project – Tunable LED Lighting for Low Light Levels (**PI**). RMB$ 125,000.

□ 2018-2019 Hong Kong Policy Innovation and Coordination Office – Public Policy Research (PPR): The Possibility of Reducing Illuminance Level by Using LED Lighting Products with

High CRI for Energy Reduction in Green Buildings (**PI**). HK$ 306,691 + HK$ 72,992.46 University matching funds.

□ 2018-2020 National Science Foundation of China (NSFC) – Young Scientists Fund: Characterization of Whiteness Appearance for Surface Colors (**PI**). RMB$ 210,000 + HK$ 23,883 University matching funds.

□ 2017/18 Hong Kong Research Grant Council – Hong Kong PhD Fellowship Scheme (**PI**).

□ 2017-2019 Hong Kong Research Grant Council – General Research Fund/Early Career Scheme (GRF/ECS): Development of A Metric for Characterizing Light Source Whiteness Rendition for Architectural Lighting (**PI**). HK$ 618,470 + HK$ 170,000 University matching funds.

□ 2016-2017 Project funded by WSP: Evaluation of Light Nuisance in Causeway Bay Hong Kong (**PI**). HK$39,000.

□ 2018-2020 Hong Kong Innovation and Technology Commission (ITC) – Innovation and Technology Fund (ITF) Midstream Research Program for Universities: Development of Intelligent Dynamic Bright Light System at Residential Dwellings to Enhance Circadian Rhythms for People with Dementia (**Co-PI**). HK$ 2,269,000.

INVITED TALKS (Excluding Paper Presentations)

CONFERENCES/SEMINARS/WORKSHOPS

□ Better Understanding of Human Color Vision for Image Quality. Imaging and Vision Special Event. Display Week 2023.

□ Keynote: Challenges and Opportunities in Color Science Introduced by Metaverse. 7th Asia Color Association Conference. Oct 20, 2022.

□ Workshop: VR/AR/MR Appearance and Perception. Color and Imaging Conference. Nov 20, 2020.

□ Short course: Chromatic Adaptation and Its Application in Imaging Systems. London Imaging Meeting. (competitively selected). Sep 29, 2020.

□ Recent Work on Color Science at PolyU. International Color and Lighting Technology Symposium. Zhejiang University. Nov 21, 2019.

□ Characterizing LED Color Rendition Using IES TM-30-15. International Color and Lighting Technology Symposium. Zhejiang University. Nov 22, 2019.

□ Color Appearance and Light Levels. The 19th International Meeting on Information Display. Gyeongju, Korea. Aug 27, 2019.

□ Workshop: Research Method for Investigating Light Source Color Rendition. CIE 2019. Washington DC, USA. Jun 16, 2019.

□ Workshop: Modeling Color Quality of Light Sources. CIE 2019. Washington DC, USA. Jun 17, 2019.

□ Maintaining Color Preference under Different Light Levels. SSLChina 2018. Shenzhen. Oct 25, 2018.

□ Daylighting and Daylight-responsive Control System for Energy Efficient Buildings. The Chartered Institution of Building Services Engineering (CIBSE). Hong Kong. Aug 24, 2018.

□ Study of Chromatic Adaptation via Perception of White. CIE TC1-96 Meeting. Taipei, Taiwan. Apr 28, 2018.

□ Quantification of External Lighting on Human Circadian System in Metropolises at Night. CIE 2018 Smart Lighting. Taipei, Taiwan. Apr 24, 2018.

□ Whiteness Appearance under Different Illuminants. Color, Imaging, and Illumination Symposium. Hangzhou, China. Nov 6, 2017.

□ An Experiment on Color Quality Evaluation. CIE 2017 Midterm Meeting, Workshop on Color Quality. Jeju, Korea. Oct 22, 2017.

□ Should We Stick the Chromaticity on the Planckian Locus? Hong Kong CIE International Symposium. Hong Kong. Oct 20, 2017.

□ Climate-based Daylight Analysis for Energy Efficient Building Design. Energy Institute Hong Kong, Technical Talk on Energy Engineering – Challenge and Opportunities. Hong Kong. Dec 10, 2016.

□ Whiteness Scales for Samples with and without Fluorescent Whitening Agents. Symposium on Color and Lighting Quality. Taipei, Taiwan. Nov 22, 2016.

□ Considerations in LED Spectral Deign for Enhanced Color Quality. 13th China International Forum on Solid State Lighting. SSLChina 2016. Beijing, China. Nov 15, 2016.

□ CIE TC1-91 Color Quality Status quo. CIE 2016 "Lighting Quality & Energy Efficiency" Color Rendering Metrics Workshop, Melbourne, Australia. Mar 3, 2016.

□ LED Color Quality Evaluation Status quo. CIE Hong Kong International Lighting Symposium 2015. Hong Kong. Oct 30, 2015.

□ LED Lighting Quality & Health. Lighting Revolution-2015 IALD Greater China Region Forum, Shanghai, China. Sep 24, 2015.

□ Evaluation of Color Quality of LED Lighting. 2014 LED Lighting Application & Optical Design, Shanghai, China. Dec 19, 2014.

□ A Two-measure System for Color Quality and Current Research of Color Rendering in IES. CIE Division 1 meeting. Kuala Lumpur, Malaysia. Apr 28, 2014.

UNIVERSITIES, COMPANIES, AND GOVERNMENT OFFICES

□ Recent Research on Color Science Related to Wide Color Gamut and High Dynamic Range. Huawei ISP Summit (Keynote). May 10, 2023.

□ Challenges Introduced by New Technologies to Color Science. University of Leeds. Leeds Institute of Textiles and Color. Oct 27, 2022.

□ Considering Daylight Quantity and Quality from a One-year Perspective. Lutron Symposium. Sep 30, 2022.

□ Light Source Color Rendition and Color Quality Evaluation. Tianjin University. Jan 26, 2022.

□ Color Management Challenges to Advanced Multi-Media Systems and Devices. Huawei Multi-Media Summit (Keynote). Nov 12, 2021.

□ Application of Color Science on Smartphone, Tablet, and Laptop. HONOR. Apr 29, 2021.

□ Recent Work on Color Science and Illumination at The Hong Kong Polytechnic University. Signify. Apr 9, 2021.

□ Camera Pipeline and Color Reproduction. OPPO. Mar 23, 2021.

□ Enhance the Accuracy of Cameras in Capturing Scene and Object Colors. HUAWEI. Sep 12, 2020.

□ Better Color Reproduction for Smartphones from Camera to Display. HUAWEI. Apr 24, 2020.

□ Effect of Adapting Luminance, Adapting CCT, and Medium on Color Appearance. Facebook Reality Labs. Sep 4, 2019.

□ Color Rendition of LED Light Sources. Ulsan National Institute of Science and Technology. Ulsan, Korea. Aug 26, 2019.

□ Effect of Adapting Luminance Level on Color Appearance. National Taiwan University of Science and Technology. Taipei, Taiwan. May 30, 2019.

□ Color, Illumination, and Imaging. Wuhan University. Wuhan, China. Apr 19, 2019.

□ Human Perception to White Stimuli Produced by Surface Colors and Self-Luminous Colors. Beijing Institute of Graphic Communication. Oct 29, 2018.

□ Latest Research on LED Color Quality. Fudan University. Oct 27, 2018.

□ Color Quality of Light Sources. Wuhan University. Wuhan, China. Jan 10, 2018.

□ Visual Responses to Optical Radiation of Different LED Spectra. GE Lighting, Shanghai, China. Jan 6, 2015.

□ Recent Development of Color Quality Evaluation. Philips Research Asia, Shanghai, China. Jan 5, 2015.

□ A New Color Rendition Method Proposed by IES and a New Metric Evaluating Whiteness. Zhejiang University, Hangzhou, China. Dec 24, 2014.

□ LED Development and Roadway Lighting. Hong Kong Highways Department – Lighting Division. Hong Kong. Aug 2, 2018.

□ LED for Road Lighting. Hong Kong Highways Department – Lighting Division. Hong Kong. Aug 1, 2017.

□ Lighting Basics. CIE Hong Kong Professional Short Courses. Hong Kong. May 7, 2019.

□ Lighting Simulation Procedures and Design Considerations. CIE Hong Kong Professional Short Courses. Hong Kong. May 29, 2018.

□ Characterization of Color Quality of LED Sources. CIE Hong Kong Professional Short Courses. Hong Kong. May 9, 2017.

HONORS & AWARDS

□ 2023 Hong Kong PolyU, Dean's Award for Outstanding Achievement in Research Funding

□ 2022 Hong Kong PolyU, President Award for Outstanding Achievement – Knowledge Transfer: Industry

□ 2022 China's Excellent Young Scientists Fund

□ 2022 Hong Kong PolyU, Young Innovative Researcher Award

□ 2022 Hong Kong PolyU, Dean's Award for Outstanding Achievement in Research Funding

□ 2022 Hong Kong PolyU, Faculty Award for Outstanding Achievement - Knowledge Transfer: Industry

□ 2021 Hong Kong PolyU, Faculty Award for Outstanding Research and Scholarly Activities

□ 2021 Google Research Scholar Award

□ 2021 Hong Kong PolyU, Dean's Award for Outstanding Young Researcher

□ 2021 CIE Service Award for Organizing the 5th CIE Expert Symposium on Color and Visual Appearance

□ 2020 Hong Kong PolyU, Dean's Award for Outstanding Achievement in Research Funding

□ 2016 Chinese Illuminating Engineering Society Service Award

□ 2015 The Architectural Engineering Institute (AEI) Design Competition – Runner up in Building Integration Category

□ 2014 The International Society for Optics and Photonics (SPIE) Optics and Photonics Education Scholarship

□ 2014 Penn State College of Engineering Distinguished Teaching Fellowship

□ 2014 Penn State College of Engineering Graduate Student Travel Grant

□ 2013 US Department of Energy (DOE) Energy Efficient Building (EEB) Hub syEnergy Conference People's Choice Award

□ 2013 The US Nuckolls Fund for Lighting Education, Jules Horton Award

□ 2013 Illuminating Engineering Society (IES) Emerging Professionals Scholarship

□ 2012 Penn State College of Engineering Graduate Student Travel Grant

□ 2012 Illuminating Engineering Society (IES) Young Professional Scholarship

□ 2010 Illuminating Engineering Society (IES) Young Professional Scholarship

PUBLICATIONS

†Students under my supervision, *Corresponding author, °My PhD supervisor

JOURNAL ARTICLES

1. †Yue S, ***Wei M**. 2023. Effective Cross-sensor Color Constancy using a Dual-mapping Strategy. Journal of the Optical Society of America A.

2. Huang M, Gao X, ***Wei M**, Wang Y, Li Y, Li X. 2023. Effect of Primary Peak Wavelength and Stimulus Size on Metameric Failure through Color Difference Evaluations. Color Research & Application.

3. Huang M, Gao X, ***Wei M**, †Shen Y, Wang Y, Li X. 2023. Color Difference Evaluations on Metameric Color Stimuli by Observers of Three Age Groups. Optics Express. 31(17):28241-28256.

4. †Wu J, ***Wei M**, Yang Y, Wang W. 2023. Color Characterization Model for OLED Displays with Crosstalk Effects. Color Research & Application.

5. †Bai X, †Liu S, Deng S, *Zhang L, **Wei M**. 2023. An Optimal Control Strategy for ASHP Units with a Novel Dual-fan Outdoor Coil for Evener Frosting Along Airflow Direction Based on GRNN Modelling. Energy and Buildings.

6. †Liu S, †Bai X, Deng S, *Zhang L, **Wei M**. 2023. Developing a Novel Control Strategy for Frosting Suppression Based on Condensing-frosting Performance Maps for Variable Speed Air Source Heat Pumps. Energy and Buildings.

7. *Fong K, Ge X, Ting H, **Wei M**, Cheung H. 2023. The Effects of Light Therapy on Sleep, Agitation and Depression in People with Dementia: A Systematic Review and Meta-analysis of Randomized Controlled Trials. American Journal of Alzheimer Disease and Other Dementias.

8. †Yue S, *__Wei M__. 2023. Color Constancy from A Pure Color View. Journal of the Optical Society of America A. 40(3):602-610.

9. †Bai X, †Liu S, Deng S, *Zhang L, __Wei M__. 2022. A Modelling Study on The Frosting Characteristics of a Novel Dual-Fan Outdoor Coil in an Air Source Heat Pump Unit. Applied Thermal Engineering.

10. †Wang H, ***Wei M**, Qu X. 2022. Constant Hue Loci in Different Color Spaces for Stimuli in Rec. 2020 Color Gamut and HDR Conditions. Optics Express. 30(25):44896-44907.

11. †Liu S, †Bai X, Deng S, *Zhang L, __Wei M__. 2022. A Modelling Study on Developing the Condensing-Frosting Performance Maps for a Variable Speed Air Source Heat Pump. Journal of Building Engineering. 58:104990.

12. Huang M, Wang Y, ***Wei M**, Li Y, Gao X, Li X. 2022. Effect of Observer Age and Stimulus Size on the Performance of CIE Color Matching Functions. Optics Express.30:16973-16986.

13. †Liu S, †Bai X, Zhang L, Lin Y, Deng S, *Wang W, __Wei M__. 2022. Developing condensing-frosting performance maps for a variable speed air source heat pump (ASHP) for frosting suppression. Applied Thermal Engineering. 211:118397.

14. †Bai X, †Liu S, Deng S, *Zhang L, __Wei M__. 2022. An Experimental Study on Achieving Even-Frosting for an Air Source Heat Pump using a Novel Dual-fan outdoor coil. Energy and Buildings. 255:111695.

15. †Huang Z, ***Wei M**. 2021. Effects of Adapting Luminance and CCT on Appearance of White and Degree of Chromatic Adaptation, Part II: extremely high adapting luminance. Optics Express. 29(25):42319-42330.

16. †Wu J, ***Wei M**. 2021. Color Mismatch and Observer Metamerism between Liquid Crystal Displays and Organic Light Emitting Diode Displays, Part II: adjacent stimuli with a larger field of view. Optics Express. 29(25):41731-41744.

17. †Li Y, ***Wei M**, Zhang X. 2021. Consideration of Degree of Chromatic Adaptation for Reproducing Illuminated Scenes. Color Research & Application. 47(3):605-614.

18. †Huang HP, __Wei M__, *Li HC, Ou LC. 2021. Visual Comfort of Tablet Devices under a Wide Range of Ambient Light Levels. Applied Science. 11(18):8679.

19. Huang M, Li Y, Liu X, ***Wei M**. 2021. Effect of Primary Peak Wavelength on Color Matching and Color Matching Functions Performance. Optics Express.29(24):40447-40461.

20. †Li Y, ***Wei M**. 2021. Perception of White for Stimuli with Luminance Beyond the Diffuse White. Journal of Imaging Science and Technology. 65(5):050405.

21. †Wu J, ***Wei M**, Fu Y, Cui C. 2021. Color Mismatch and Observer Metamerism between Liquid Crystal Displays and Organic Light Emitting Diode Displays. Optics Express. 29(8):12292-12306.

22. *Royer MP, Houser KW, Durmus D, Esposito T, __Wei M__. 2021. Recommended Methods for Conducting Human Factors Experiments on the Subjective Evaluation of Color Rendition. Lighting Research & Technology. 54:199-236.

23. †Huang HP, ***Wei M**, †Chen S. 2020. White Appearance of Virtual Stimuli Produced by Augmented Reality. Color Research & Application. 46(2):294-302.

24. †Wang J, ***Wei M**. 2021. Comparison of Daylight Simulation Methods for Reflected Sunlight from Curtain Walls. Building Simulation. 14:549-564.

25. †Chen S, ***Wei M**. 2020. Chromaticities for Producing White Stimuli Depend on Viewing Mode rather than Viewing Medium: A Pilot Study. LEUKOS. 16(4):255-265.

26. †Wang J, ***Wei M**, Ruan X. Characterization of Accepted Daylight Quality in Typical Residential Buildings in Hong Kong. Building & Environment. 182: 107094

27. †Hu Y, ***Wei M**, Luo MR. 2020. Observer Metamerism to Display White Point using Different Primary Sets. Optics Express.28(14):20305-20323.

28. †Bao W, ***Wei M**. 2020. Testing the Performance of CIECAM02 from 100 to 3500 cd/m2. Color Research & Application. 45:992-1004.

29. †Zhu Y, ***Wei M**, Luo MR. 2020. Investigation on the Effects of Adapting Chromaticities and Luminance on Color Appearance on Computer Displays using Memory Colors. Color Research & Application. 45:612-621.

30. †Bao W, ***Wei M**, Xiao K. 2020. Investigating Unique Hues at Different Chroma Levels with a Smaller Hue Angle Step. Journal of the Optical Society of America A. 37(4):671-679.

31. †Kong X, ***Wei M**, Murdoch M, Heynderickx I, Vogels I. 2020. Assessing the Temporal Uniformity of CIELAB Hue Angle. Journal of the Optical Society of America A. 37(4):521-528.

32. Yang B, ***Wei M**. 2020. Road Lighting: A Pilot Study Investigating the Effect of Color Contrast on Visual Performance. Lighting Research & Technology. 52:895-905.

33. *Zhang X, †Wang M, **Wei M**, Liu S. 2020. Optimal Number of Sensors for a Digital Imaging System to Accurately Capture Colors from the Metamer Mismatching Perspective. Color Research & Application. 45:275-289.

34. ***Wei M**, †Bao W, †Huang HP. 2020. Consideration of Light Level in Specifying Light Source Color Rendition. LEUKOS. 16(1):55-65.

35. †Chen S, ***Wei M**. 2020. LED Illumination and Color Appearance of White-Balanced Images. LEUKOS. 16(3):203-215.

36. †Chen S, ***Wei M**, Dai Q, Huang Y. 2020. Estimation of Possible Suppression of Melatonin Production Caused by Exterior Lighting in Commercial Business Districts in Metropolises. LEUKOS. 16(2):137-144.

37. *Royer MP, **Wei M**, Wilkerson A, Safranek S. 2020. Experimental Validation of Color Rendition Specification Criteria Based on ANSI/IES TM-30-18. Lighting Research & Technology.52:323-349.

38. †Bao W, ***Wei M**. 2020. Change of Gamut Size for Producing Preferred Color Appearance from 20 to 15000 lx. LEUKOS. 17(1):21-42.

39. Guo Q, **Wei M**, Zheng Z, Huang X, Song X, Qiu J, *Dong G. 2019. Full-Color Chemically Modulated g-C3N4 for White-Light Emitting Device. Advanced Optical Materials. 7:1900775.

40. ***Wei M**, †Chen S. 2019. Effects of Adapting Luminance and CCT on Appearance of White and Degree of Chromatic Adaptation. Optics Express. 27(6):9276-9286.

41. ***Wei M**, Royer MP, †Huang HP. 2019. Perceived Color Fidelity under LEDs with Similar Rf but Different Ra. Lighting Research & Technology. 51:858-869.

42. †Wang J, ***Wei M**, Chen L. 2019. Does Typical Weather Data Allow Accurate Predictions of Daylight Quality and Daylight-responsive Control System Performance? Energy and Buildings. 184:72-87.

43. †Huang HP, ***Wei M**, Ou LC. 2019. Effect of Text-Background Lightness Combination on Visual Comfort for Reading on a Tablet Display under Different Surrounds. Color Research & Application. 44 (1):54-64.

44. ***Wei M**, †Chen S, †Huang HP, Luo MR. 2018. Development of a Whiteness Formula for Surface Colors under an Arbitrary Light Source. Optics Express. 26(14):18171-18181.

45. †Huang HP, ***Wei M**, Xiao K, Ou L. 2018. Unique Hue Judgments using Saturated and Desaturated Munsell Samples under Different Light Sources. Color Research & Application. 44:419-425.

46. Cai W, Yue J, *Dai Q, Hao L, Lin Y, Shi W, Huang Y, **Wei M**. 2018. The Impact of Room Surface Reflectance on Corneal Illuminance and Rule-of-thumb Equations for Circadian Lighting Design. Building and Environment. 141:288-297.

47. ***Wei M**, †Wang Y. 2018. Judgement of White Appearance for Surface Colors under Individual and Simultaneous Observations. LEUKOS. 14(4):245-257.

48. †Chen S, ***Wei M**. 2018. Impact of FWA Excitation on White Balance Algorithms. Color Research & Application. 43(5):685-696.

49. †Huang HP, ***Wei M**, Ou LC. 2018. White Appearance of a Tablet Display under Different Ambient Lighting Conditions. Optics Express. 26(4):5018-5030.

50. ***Wei M**, †Chen S. 2018. Impact of Spectral Power Distribution of Daylight Simulators on Whiteness Specification for Surface Colors. Color Research & Application. 43(1):27-33.

51. *Royer MR, Wilkerson AM, **Wei M**. 2018. Human Perceptions of Color Rendition at Different Chromaticities. Lighting Research & Technology. 50:965-994.

52. †Wang Y, ***Wei M**. 2018. Preference Among Sources with Different Duv but Similar Color Rendition: A Pilot Study. Lighting Research & Technology. 50:1013-1023.

53. †Ma S, **Wei M**, Liang J, Wang B, Chen Y, Pointer M, *Luo MR. 2018. Evaluation of Whiteness Indices. Lighting Research & Technology. 50(3):429-445.

54. ***Wei M**, †Wang Y, †Ma S, Luo MR. 2017. Chromaticity and Characterization of Whiteness for Surface Colors. Optics Express. 25(23): 27981-27994.

55. ***Wei M**, †Ma S, †Wang Y, Luo MR. 2017. Evaluation of Whiteness Formulas for FWA and non-FWA Whites. Journal of the Optical Society of America A. 34(4): 640-647.

56. *Dai Q, Cai W, Shi W, Hao L, **Wei M**. 2017. A Proposed Lighting-Design Space: Circadian Effect Versus Brightness Appearance. Building and Environment. 122:287-293.

57. ***Wei M**. 2017. Consider Colorimetric Quantities in Obtrusive Light Evaluation. Lighting Research & Technology. 49(1):4.

58. ***Wei M**, Yang B, Lin Y. 2017. Optimization of a Spectrally Tunable LED Daylight Simulator. Color Research & Application. 42(4):419-423.

59. *Royer MP, **Wei M**. 2017. The Role of Presented Objects in Deriving Color Preference from Psychophysical Studies. LEUKOS. 13(3):143-157.

60. *Royer MP, Wilkerson AM, **Wei M**, °Houser KW, Davis R. 2017. Human Judgements of Color Rendition Vary with Average Fidelity, Average Gamut, and Gamut Shape. Lighting Research & Technology. 49(8):966-991.

61. ***Wei M**, °Houser KW. 2017. Systematic Changes in Gamut Size Affects Color Preference. LEUKOS. 13(1): 23-32.

62. Xu W, **Wei M**, Smet KAG, *Lin Y. 2017. Evaluation of the Prediction of Perceived Color Differences by Color Fidelity Metrics. Lighting Research & Technology. 49(7):805-817.

63. *Lin Y, **Wei M**, Smet KAG, Tsukitani A, Bodrogi P, Khanh TQ. 2017. Color Preference Varies with Lighting Application. Lighting Research & Technology. 49(3): 316-328.

64. ***Wei M**, **°**Houser KW, David A, Krames MR. 2016. Color Gamut Size and Shape Influence Color Preference. Lighting Research & Technology. 49(8): 992-1014.

65. **Wei M**, **°***Houser KW. 2016. What is the Cause of Apparent Preference for Sources with Chromaticity below the Blackbody Locus? LEUKOS. 12(1-2): 95-99.

66. Ashdown I et al. 2015. Correspondence: In Support of the IES Method of Evaluating Light Source Color Rendition. Lighting Research & Technology. 47: 1029-1034.

67. *David A, Fini PT, **°**Houser KW, Ohno Y, Royer MP, Smet KAG, **Wei M**, Whitehead L. 2015. Development of the IES Method for Evaluating the Color Rendition of Light Sources. Optics Express. 23(12):15888-15906.

68. *Lin Y, Fotios SA, **Wei M**, Liu Y, Guo W, Sun Y. 2015. Eye Movement and Pupil Size Constriction under Discomfort Glare. Investigative Ophthalmology & Visual Science. 56(3): 1649-1656.

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70. Jia Z, Isikman S, Wei M, Chan T. Gaze-Aware Tone Mapping with Adaptive Sparkles P207793US01.

STUDENTS SUPERVISED

PHD STUDENTS

□ Siyuan Chen (08/2016-08/2020) Currently working at HUAWEI.

□ Jun Wang (08/2017-11/2021)

□ Wenyu Bao (08/2017-11/2021) Currently working at HUAWEI.

□ Yiqian Li (08/2018-09/2022)

□ Shengnan Liu (09/2019-03/2023)

☐ Xiaoxia Bai (09/2019-06/2023)

☐ Jialu Wu (01/2020-04/2023) Currently working at HUAWEI.

☐ Hongbing Wang (09/2020-current)

☐ Shuwei Yue (09/2021-current)

☐ Yu Wang (09/2021-current)

☐ Mengjing Zhao (09/2021-current)

☐ Zheng Huang (09/2021-current). Awardee of PolyU Presidential Fellowship

☐ Di Yang (09/2021-current). Awardee of PolyU Presidential Fellowship

☐ Fangjia Du (09/2022-current)

☐ Jiamin Guo (09/2022-current)

☐ Ruikai He (09/2022-current)

☐ Shuya Xie (01/2023-current)

☐ Yuetong Shen (09/2023-current)

☐ Ziyuan Liu (09/2023-current)

☐ Yixuan Liu (09/2023-current)

☐ Yuyang Liu (09/2023-current)

☐ Jinzhao Yue (09/2023-current)

☐ Yuzhao Wang (Co-supervised with Prof. Ronnier Luo at Zhejiang University; 08/2016-06/2017 at PolyU) Currently working at VIVO.

☐ Hsin-Pou Huang (Co-supervised with Prof. Li-Chen Ou at National Taiwan University of Science and Technology; 08/2017-08/2018 at PolyU) Currently working at Chihelee University of Technology in Taiwan as an Assistant Professor.

MASTER STUDENTS

☐ Binquan Liang – MEng in Building Services Engineering (with dissertation), 09/2019-07/2020

☐ Ka Lok Wong – M.Sc. in Building Services Engineering (with dissertation), 08/2018-01/2020

☐ Ziyu Shu – MEng in Building Services Engineering (with dissertation), 08/2017-05/2018

☐ Haochun Zhao – MEng in Building Services Engineering (with dissertation), 08/2017-05/2018

☐ Wing Kit Wan – M.Sc. in High Performance Buildings (with dissertation), 08/2017-05/2018

☐ Tang Ho Lam – MEng in Building Services Engineering (with dissertation), 08/2016-05/2017

☐ Kin Ho Yang – MEng in Building Service Engineering (with dissertation), 08/2016-05/2017

EXCHANGE RESEARCH STUDENTS

☐ Zheng Huang – M.Sc. at Wuhan University, supervised by Dr. Qiang Liu (07/2018-08/2018 at PolyU)

☐ Xiaoxuan Liu – M.Sc. at University of Science and Technology Liaoning, supervised by Prof. Changjun Li (07/2018-12/2018 at PolyU)

☐ Yuecheng Zhu – Ph.D. at Zhejiang University, supervised by Prof. Ronnier Luo (09/2018-12/2018 at PolyU)

□ Mengmeng Wang – M.Sc. at Hangzhou Dianzi University, supervised by Dr. Xiandou Zhang (04/2019-08/2019 at PolyU)

□ Yu Hu – Ph.D. at Zhejiang University, supervised by Prof. Ronnier Luo (04/2019-08/2019 at PolyU)

□ Jie Yang – Ph.D. at University of Leeds, supervised by Dr. Kaida Xiao (05/2019-06/2019 at PolyU)

□ Xiangzhen Kong – Ph.D. at Eindhoven University of Technology, supervised by Prof. Ingrid Heynderickx (08/2019-12/2019 at PolyU)

STUDENTS' AWARDS AND SCHOLARSHIP

□ Di Yang: 2021-2023 Hong Kong PolyU Presidential PhD Fellowship.

□ Zheng Huang: 2021-2023 Hong Kong PolyU Presidential PhD Fellowship.

□ Yat Kuen Wong: 2019 CIE (Hong Kong) Outstanding Student Lighting Project Award HK$ 5,000

□ Ka Lok Wong: 2018 CIE (Hong Kong) Student Scholarship HK$ 5,000

□ Hsin-Pou Huang: 2018 IDW Student Travel Grants JPY 15,000

Self-nomination for Young Leader Conference

Minchen Wei

I, as a young researcher, have been very active in the field of colour and imaging science. My research achievements not only help us to deeply understand the human visual system, but also brings great impacts to industries through technology transfer. In the past several years, I collaborated with a wide range of world-leading high-tech companies, and developed various impactful solutions that have been adopted on real products and production lines.

In the past three years, I carried out high-quality scientific work to understand how the human visual system perceives colour stimuli with different spectral compositions, especially those produced by new display systems, such as LCD, OLED and LED displays. My work revealed that the OLED displays tend to produce a green tint due to the narrow-band spectral shape, and the necessity to investigate the underlying mechanisms by collaborating with neuroscientists and vision scientists, which has been supported by the Research Impact Fund (RIF) scheme under the Research Grant Council with a funding of HK$ 8.14 million. The research findings have led to the development of breakthrough solutions for solving the bottleneck problems for various world-leading companies. For example, I developed a solution for Huawei to achieve the colour consistency between different display technologies, and also developed a solution for Transsion (the largest smartphone manufacturer in Africa) to achieve the best-ever colour consistency among a batch of products in the market.

My work also addresses the human's needs of better image quality. I carry a series of studies to understand how the cameras and displays should work together to provide better viewing experience to users by understanding the fundamental mechanisms in the human visual system, such as chromatic adaptation and opponent colour. Algorithms were then developed for different stages in the imaging pipelines. For example, I worked with Huawei to develop a new white balance algorithm for their smartphones, with Xiaomi to develop new solutions for colour tuning, and Google to develop an end-to-end colour pipeline for smartphone cameras. In the past three years, I have been working closely with Facebook to develop solutions for mixed reality headsets, aiming to provide realistic viewing experience to users.

In addition to the scientific work, I am also active in professional societies and bodies. I am the Vice President of the International Commission on Illumination (CIE) and also the chair of two technical committees. I also serve as the associate editors for the Journal of the Optical Society of America A (JOSA A), Color Research and Application, and the Journal of the Illuminating

Engineering Society (LEUKOS). In the recent years, I also participated in SID Display Week. Early this year, I was invited to deliver a talk at Imaging and Vision Special Event at Display Week 2023. I also submitted three paper to ICDT 2024. In the future, I will more actively participate in various events and activities organized by SID China and also SID, and are more than happy to join various technical committees to make contributions and take leaderships in the community. In particular, my recent work on VR/AR/MR can make more contributions to the standardization, helping to improve the quality and user experience of VR/AR/MR headsets and products.