Yahong Dong

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Profile

Dr. Dong is an Associate Professor in the Department of Environmental Science and Engineering at Macau University of Science and Technology (MUST). She holds both MPhil and PhD degrees from the Department of Civil Engineering at The University of Hong Kong and previously studied Environmental Science (Major) and Computer Science (Minor) at Ocean University of China (Project 985) in her hometown of Qingdao. She has around seventy publications in peer-reviewed journals and conference proceedings, with a Google Scholar citation count of 1,846. Additionally, Dr. Dong serves as the Vice-Chairman of the Sustainable Development Committee at MUST. Her research interests include life cycle assessment, carbon accounting, sustainability assessment, and environmental modeling.

Education

2011.06 – 2014.05	**PhD**	Department of Civil Engineering The University of Hong Kong *Thesis:* *'Life Cycle Sustainability Assessment Modeling of Building Construction'*
2008.09 – 2011.05	**MPhil**	Department of Civil Engineering The University of Hong Kong *Thesis:* *'Analysis on Stratification and Algal Bloom Risk in Mirs Bay'*
2004.09 – 2008.08	**BSc**	Department of Environmental Science Ocean University of China *Final year project:* *'A Study on Air-Sea Energy Exchange over North Yellow Sea'*
	Minor	Department of Computer Science Ocean University of China *Final year project:* *'UI Design for the Ocean Information Integration Platform (OIIP)'*

Professional Experience

2022.09 – present	Associate Professor	Department of Environmental Science and Engineering Macau University of Science and Technology
2024.02 – 2024.02	Visiting Scholar	School of Engineering, Design and Built Environment Western Sydney University
2023.08 – present	Vice-Chairman	Sustainable Development Committee Macau University of Science and Technology
2023.07 – 2023.07	Visiting Scholar	Department of Civil, Environmental and Geomatic Engineering University College London
2021.10 – 2022.08	Distinguished Researcher	Institute of Low Carbon and Sustainable Development Jinan University
2019.03 – 2022.08	Professor	Qingdao Research Center of Green Development and Ecological Environment Qingdao University of Science and Technology
2017 – 2018	Research Fellow	Department of Civil and Environmental Engineering The Hong Kong Polytechnic University
2015 – 2017	Teaching Fellow	Faculty of Science and Technology Technological and Higher Education Institute of Hong Kong

2015 – 2015	Postdoctoral Fellow	Department of Architecture and Civil Engineering City University of Hong Kong
2014 – 2015	Postdoctoral Fellow	Department of Civil Engineering The University of Hong Kong
2010 – 2011	Research Assistant	Department of Civil Engineering The University of Hong Kong

Publications

Peer-reviewed Journal Papers:

1. Y Zhao, **Y Dong*,** 2024. Are Consumers Willing to Pay for Carbon-Labeled Products? A Global Analysis (Ready to submit)
2. R Zhang, H Shen, Y Yang, X Wang, **Y Dong***, 2024. Progress, trend, and challenges in carbon accounting of marine macroalgae (Ready to submit)
3. H Huang, **Y Dong***, G Chen, M Muller, 2024. A systematic review of monitoring and quantification of microalgal carbon sinks and critical analysis on biological mechanisms and applications (Ready to submit)
4. L Pan, C Shi, Y Wang*, K Li, X Guo, B Zhang, Y Liu, L Wang, S Xue, **Y Dong**, 2024. The role of transport in the whole life cycle carbon emissions of civil engineering structures needs to be revisited (Under Review)
5. B Zhang, L Pan, Y Wang*, C Shi, Y Liu, X Guo, S Xue, L Wang, **Y Dong,** 2024. Transport is crucial for China's construction industry embodied carbon emissions (Under Review)
6. S Wang, **Y Dong***, 2024. Analyzing environmental footprint of the global chocolate industry based on a hybrid life cycle assessment method (Unver Review)
7. **Y Dong***, 2024. Integrating stakeholder perspectives as a key dimension in LCA: An exploratory study for harmonizing LCSA (Under Review)
8. Q Wang*, X Sun, S Lin, **Y Dong** , H Shen , Z He , H Luo , L Zou , IK Chung, 2024. Large-scale seaweed cultivation as a nature solution for carbon-negative economy and restorative environmental stewardship: lessons from China. Renewable and Sustainable Energy Reviews (IF. 16.3)
9. Y Qu, **Y Dong*,** 2024. Life cycle assessment of campuses: a systematic review, Energy and Buildings (IF: 6.6)
10. T Yang, **Y Dong***, B Tang, Z Xu, 2024. Developing a D-LCA framework for buildings through integrating BIM and BEMP, Science of the Total Environment. (IF: 8.2)
11. A Gu*, X Zhou, Q Chen, **Y Dong**, 2024. Tracking greenhouse gas emissions in Chinese value chains with an interprovincial input–output model, Energy and Climate Management.
12. S Wang, **Y Dong*,** 2024. Applications of life cycle assessment in the chocolate industry: The state-of-the-art analysis based on systematic review. Foods. (IF: 4.7)
13. X Li, W Li, **Y Dong***, 2024. Importance to Reduce Carbon Emissions from Power Transmission and Distribution Systems. Energy Reports. (IF:4.7)

14. R Zhang, Q Wang, H Shen, Y Yang, P Liu, **Y Dong***, 2024. Environmental benefits of macroalgae products: a case study of agar based on life cycle assessment. Algal Research-Biomass Biofuels and Bioproducts. (IF: 4.6)
15. Y Zhao, **Y Dong***, Peng Liu, 2024. Predicting low carbon pathways on the township level in China: a case study of an island. Environmental Monitoring and Assessment. (IF: 2.9)
16. **Y Dong***, ST Ng, P Liu, 2023. Towards the principles of life cycle sustainability assessment: An integrative review for the construction and building industry. Sustainable Cities and Society. (IF: 10.5)
17. **Y Dong***, T Yang, P Liu, Z Xu, 2023. Comparing the standards of life cycle carbon assessment of buildings: an analysis of the pros and cons. Buildings. (IF:3.1)
18. Y Liu, S Xue, X Guo, B Zhang, X Sun, Q Zhang, Y Wang*, **Y Dong**, 2023. Towards the goal of zero-carbon building retrofitting with variant application degrees of low-carbon technologies: Mitigation potential and cost-benefit analysis for a kindergarten in Beijing. Journal of Cleaner Production. (IF: 9.7)
19. **Y Dong***, P Liu, MU Hossain, 2023. Life cycle sustainability assessment of building construction: a case study in China. Sustainability. (IF: 3.3)
20. **Y Dong***, YT Zhao, J Zhang, P Liu, 2022. Development of a framework of carbon accounting and management on the township level in China. Journal of Environmental Management. (IF: 8.0)
21. **Y Dong**, YT Zhao, H Wang, P Liu, Y He, GY Lin*, 2022. Integration of life cycle assessment and life cycle costing for the eco-design of rubber products. Scientific Reports. (IF: 3.8)
22. **Y Dong**, MU Hossain, H Li, P Liu*, 2021. Developing Conversion Factors of LCIA Methods for Comparison of LCA Results in the Construction Sector. Sustainability. (IF: 3.3)
23. MU Hossain, **Y Dong**, ST Ng*, 2021. Influence of Supplementary Cementitious Materials in Sustainability Performance of Concrete Industry: A Case Study in Hong Kong, Case Studies in Construction Materials. (IF: 6.5)
24. **Y Dong**, ST Ng, P Liu*, 2021. A comprehensive analysis towards benchmarking of life cycle assessment of buildings based on systematic review. Building and Environment. (IF: 7.1)
25. MU Hossain, ST Ng*, **Y Dong**, B Amor, 2021. Strategies for mitigating plastic wastes management problem: A lifecycle assessment study in Hong Kong. Waste Management. (IF: 7.1)
26. **Y Dong,** P Liu*, 2021. Evaluation of the completeness of LCA studies for residential buildings. Clean Technologies and Environmental Policy. (IF: 4.2)
27. **Y Dong**, Y Zhao, MU Hossain, Y He, P Liu*, 2021. Life cycle assessment of vehicle tires: A systematic review. Cleaner Environmental Systems. (IF: 6.1)
28. **Y Dong**, P Liu, MU Hossain, Y Fang, Y He, H Li*, 2021. An Index of Completeness (IoC) of life cycle assessment: Implementation in the building sector, Journal of Cleaner Production. (IF: 9.7)

29. J Guo, **Y Dong,** JHW Lee*, 2020. A real time data driven algal bloom risk forecast system for mariculture management, Marine Pollution Bulletin. (IF: 5.3)
30. HY Li*, X Zhang, ST Ng, M Skitmore, **YH Dong**, 2019. Social sustainability indicators of public construction megaprojects in China, Journal of Urban Planning and Development. (IF: 1.7)
31. U Hossain, CS Poon*, **YH Dong**, 2018. Evaluation of environmental impact distribution methods for supplementary cementitious materials, Renewable & Sustainable Energy Reviews. (IF: 16.3)
32. U Hossain, CS Poon*, **YH Dong**, IMC Lo, JCP Cheng, 2018. Development of social sustainability assessment method and a comparative case study on assessing recycled construction materials, International Journal of Life Cycle Assessment. (IF: 4.9)
33. **YH Dong**, AK An*, YS Yan, S Yi, 2017. Hong Kong's Greenhouse Gas Emissions from the Waste Sector and its Projected Changes by Integrated Waste Management Facilities, Journal of Cleaner Production. (IF: 9.7)
34. **YH Dong**, ST Ng*, MM Kumaraswamy, 2016. Critical analysis of the life cycle impact assessment methods, Environmental Engineering and Management Journal, 2016, 15 (4): 879-890 (IF: 0.9)
35. **YH Dong**, ST Ng*, 2016. A modeling framework to evaluate sustainability of building construction based on LCSA, International Journal of Life Cycle Assessment, 2016, 21 (4): 555 – 568. DOI: 10.1007/s11367-016-1044-6 (IF: 4.9)
36. **YH Dong**, L Jaillon*, P Chu, CS Poon, 2015. Comparing carbon emissions of precast and cast-in-situ construction methods–A case study of high-rise private building, Construction and Building Materials, 2015, 99: 39 – 53. DOI: 10.1016/j.conbuildmat.2015.08.145 (IF: 7.4)
37. **YH Dong**, ST Ng*, 2015. A social life cycle assessment model for building construction in Hong Kong, International Journal of Life Cycle Assessment, 2015, 20 (8): 1166 – 1180. DOI: 10.1007/s11367-015-0908-5 (IF: 4.9)
38. **YH Dong**, ST Ng*, 2015. A Life Cycle Assessment model for evaluating the environmental impacts of building construction in Hong Kong, Building and Environment, 2015, 89: 183 – 191. DOI: 10.1016/j.buildenv.2015.02.020 (IF: 7.1)
39. **YH Dong**, ST Ng*, AHK Kwan, SK Wu, 2015. Substituting local data for overseas life cycle inventory – a case study of concrete products in Hong Kong, Journal of Cleaner Production, 2015, 87: 414 – 422. DOI: 10.1016/j.jclepro.2014.10.005 (IF: 9.7)
40. **YH Dong**, ST Ng*, 2014. Comparing the midpoint and endpoint approaches based on 'ReCiPe' – a study of commercial buildings in Hong Kong, International Journal of Life Cycle Assessment, 2014, 19 (7): 1409 – 1423. DOI: 10.1007/s11367-014-0743-0 (IF: 4.9)
41. Y Zhao*, **YH Dong**, 2008. Synthesis and interfacial properties of dialkylbenzenesulfonates. Energy Sources, 2008, 30 (11): 975-980. DOI:10.1080/15567030601082241 (IF: 0.57)

42. Y Zhao*, **YH Dong**, CF Bi, and YH Fan, 2008. Study on Dynamic Interfacial Tension of a Series of Alkylbenzene Sulfonates with Alkane. Acta Chimic Sinica, 2008, 66 (7): 799-802. (IF: 1.84)

Peer-reviewed Journal Papers (in Chinese):

43. J Guo, **Y Dong** *, 2021 Analysis of Innovative Economic Theory from the Perspective of Ecological Civilization, Shandong Social Sciences. (in Chinese, IF: 1.303, CSSCI)

International Conferences:

44. **Y Dong***, Y Zhao, 2024, Comparative Analysis of Dynamic and Static Life Cycle Assessment: A Case Study of a Commercial Building, The 2nd International Conference on Construction Project Management and Construction Engineering (iCCPMCE-2024), November 20-23, 2024, Sydney, Australia
45. Y Qiu, **Y Dong***, 2024, Accounting and predicting GHG emissions of academic campuses: A case study of Macau University of Science and Technology, The 2nd International Bay Area Urban Agglomeration Green Development Conference, August 14-17, 2024, Macao.
46. H Huang, **Y Dong***, 2024, Accounting and monitoring of phytoplankton carbon sinks in Macao coastal waters, The 2nd International Bay Area Urban Agglomeration Green Development Conference, August 14-17, 2024, Macao.
47. Y Zhao, C Tang, **Y Dong***, 2024, Greenhouse gas assessment and net-zero pathways of Yan Pu Bay, The 2nd International Bay Area Urban Agglomeration Green Development Conference, August 14-17, 2024, Macao.
48. X Li, W Li, **Y Dong**, S.A. Sherif, 2024, Impact of Clean Energy on the Carbon Emission Structure of the Power Grid in China, Proceedings of the ASME 2024 Heat Transfer Summer Conference (HT2024), July 15-17, 2024, Anaheim, California, United States.
49. Y Zhao, **Y Dong**, W Li, TA Khan, H Cheng, J Mehmood, 2024, Carbon Emission Model of China's Power Industry Based on Life Cycle Perspective, Proceedings of the ASME 2024 Heat Transfer Summer Conference (HT2024), July 15-17, 2024, Anaheim, California, United States.
50. J Chen, Z Li, **Y Dong***, Y Zhao, 2023, Life cycle assessment of high-performance concrete with high elastic modulus, The 7th Sustainable Process Integration Laboratory Scientific Conference (SPIL'23) in Conjunction with Renewable Energy System for Residential Building Heating and Electricity Production (RESHeat) Workshop, 1 – 3 November 2023 (Hybrid), Mikulov, Czech Republic.
51. S Wang, **Y Dong***, 2023, Life cycle assessment of the chocolate industry: a systematic review, The 7th Sustainable Process Integration Laboratory Scientific Conference (SPIL'23) in Conjunction with Renewable

Energy System for Residential Building Heating and Electricity Production (RESHeat) Workshop, 1 – 3 November 2023 (Hybrid), Mikulov, Czech Republic.

52. TY Yang, **Y Dong***, BN Tang, P Liu, 2023, Integrating BIM and BEMP in dynamic life cycle assessment (D-LCA): a case study of a commercial building, The 18th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), September 24-29, 2023 (Hybrid), Dubrovnik, Croatia.
53. Y Qiu, **Y Dong***, YT Zhao, Analyzing carbon emissions of university campuses: a case study of Macau University of Science and Technology, The 18th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), September 24-29, 2023 (Hybrid), Dubrovnik, Croatia.
54. **Y Dong***, TY Yang, ZY Xu, P Liu, 2022, Life cycle carbon assessment of buildings based on GB/T 51366: the pros and cons, The 6th Sustainable Process Integration Laboratory (SPIL) Scientific Conference, 14 – 15 November 2022 (Hybrid), Brno, Czech Republic.
55. **Y Dong***, YT Zhao, P Liu, 2022. Achieving carbon emissions peak at township level: a case study in China, 5th SEE SDEWES Conference, May 22 - 26, 2022 (Hybrid), Vlore, Albania
56. **Y Dong***, P Liu, 2022. Replacing natural gas with electricity: a life cycle carbon assessment of the Chinese liquor industry, 5th SEE SDEWES Conference, May 22 - 26, 2022 (Hybrid), Vlore, Albania
57. **Y Dong***, P Liu, 2021. The influential factors of consumer purchasing of carbon-labeled products in the post-COVID-19 era, Energy, Water, Emission & Waste in Industry and Cities, The 5th Sustainable Process Integration Laboratory Scientific Conference, November 4-5, 2021 (Hybrid), Brno, Czech Republic.
58. **Y Dong*,** YT Zhao, P Liu, 2021. Development of a calculation tool of regional carbon emissions (CToRCE) in China, Energy, Water, Emission & Waste in Industry and Cities, The 5th Sustainable Process Integration Laboratory Scientific Conference, November 4-5, 2021 (Hybrid), Brno, Czech Republic.
59. **YH Dong***, YT Zhao, P Liu, 2021. Life cycle environmental analysis and life cycle costing of high wear-resistant rubber hoses. Building a Sustainable Future based on Innovation and Digitalization, The 10th International Conference on Life Cycle Management, September 5-8, 2021 (Hybrid), Stuttgart, Germany.
60. **YH Dong***, P Liu, 2021. Life cycle sustainability assessment of a residential building project in northeast China. Building a Sustainable Future based on Innovation and Digitalization, The 10th International Conference on Life Cycle Management, September 5-8, 2021 (Hybrid), Stuttgart, Germany.
61. **YH Dong***, P Liu, 2020. Development of an index for the completeness of LCA studies. The 4th Sustainable Process Integration Laboratory Scientific Conference, Energy, Water, Emission & Waste in Industry and Cities, November 18-20, 2020 (Hybrid), Brno, Czech Republic.
62. YT Zhao, GY Lin, H Wang, P Liu, **YH Dong***, 2020. Comparative analyses of rubber hoses for construction based on Life Cycle Assessment. The 4th Sustainable Process Integration Laboratory Scientific Conference,

Energy, Water, Emission & Waste in Industry and Cities, November 18-20, 2020 (Hybrid), Brno, Czech Republic.

63. **YH Dong**, P Liu*, 2019. A framework of life cycle sustainability assessment modeling of buildings. Proceedings of the 22nd Conference on Process Integration, Modelling and Optimization for Energy Saving and Pollution Reduction, October 19-21, 2019, Crete, Greek.
64. H Li, ST Ng*, **YH Dong**, 2016. Stakeholder analysis of sustainable construction in China, International Conference on Advancement of Construction Management and Real Estate, December 14-17, 2016, Hong Kong.
65. **YH Dong**, ST Ng*, H Li, 2016. Development of a social life cycle impact assessment method for construction management in Hong Kong, International Conference on Advancement of Construction Management and Real Estate, December 14-17, 2016, Hong Kong.
66. **YH Dong***, 2016. Sustainability assessment of public residential buildings in Hong Kong based on LCSA, EcoBalance 2016, The 12th Biennial International Conference on EcoBalance, Responsible Value Chains for Sustainability, October 3-6, 2016, Kyoto, Japan.
67. **YH Dong**, L Jaillon*, CS Poon, 2016. Life cycle assessment of precast and cast-in-situ construction, Sustainable Built Environment Regional Conference, June 15 – 17, 2016, Zurich, Switzerland.
68. **YH Dong**, ST Ng*, 2015. A life cycle sustainability assessment framework for building construction, The First International Conference for Sustainable Development and Management, June 28 – 30, 2015, Hong Kong.
69. **YH Dong,** ST Ng*, 2014. Life cycle assessment of biodiesel in Hong Kong, EcoBalance 2014, The 11th International Conference on EcoBalance, Creating Benefit through Life Cycle Thinking, October 27-30, 2014, Tsukuba, Japan.
70. **YH Dong**, ST Ng*, 2013. Application of life cycle assessment to compare the environmental footprint of concrete methods, SETAC Europe 19th LCA Case Study Symposium: LCA in Market, Research, Policy: Harmonization beyond Standardization, November 11-13, 2013, Rome, Italy.
71. **YH Dong**, ST Ng*, 2013. LCA modeling for building construction processes, Sustainable Building 2013 Hong Kong Regional Conference – Urban Density & Sustainability, September 12-13, 2013, Hong Kong.
72. **YH Dong**, CTC Wong, ST Ng*, JMW Wong, 2013. Life Cycle assessment of precast concrete units, International Conference on Civil, Environmental and Architectural Engineering, March 28-29, 2013, Madrid, Spain.

Conferences (in Chinese):

73. **Y Dong**, Application of Life Cycle Sustainability Assessment in the Construction Sector, Guangdong-Hong Kong-Macao Greater Bay Area Low-Carbon and Healthy Habitat Summit Forum, November 16, 2023, Shenzhen, China

74. **Y Dong**, Offshore Microalgae Carbon Sink Prediction Study, Interdisciplinary Research Seminar on Marine Carbon Sink Management and Macroalgae Restoration, May 2023, Jinan University, Guangzhou, China
75. **Y Dong**, the challenge of building carbon neutrality and the technological path to deal with it, Xiangshan Science Society, November 14-15, 2022. Beijing, China
76. **Y Dong**, 2021. Lingshan Island Provincial Nature Reserve carbon peak, carbon neutrality action plan, the fourth China Low Carbon Road Summit Forum, July 15-17, 2021, Zouping, Shandong, China

Book Chapters and Other Publications

77. **Y Dong**, U Md Hossain, (2024) Environmental Assessment, LCSA Encyclopedia, Edward Elgar Publishing. (In progress)
78. **Y Dong**, U Md Hossain, (2024) Environmental Footprint, LCSA Encyclopedia, Edward Elgar Publishing. (In progress)
79. **Y Dong**, U Md Hossain, (2024) Environmental Impact, LCSA Encyclopedia, Edward Elgar Publishing. (In progress)
80. U Md Hossain, **Y Dong**, (2024) Environmental Management, LCSA Encyclopedia, Edward Elgar Publishing. (In progress)
81. U Md Hossain, **Y Dong**, (2024) Environmental Sustainability, LCSA Encyclopedia, Edward Elgar Publishing. (In progress)
82. **Y Dong**, Y Li, Current Status, Effectiveness, and Trends of Urban Dual Carbon Cooperation in the Greater Bay Area, Development Report of the Guangdong-Hong Kong-Macao Greater Bay Area (2022-2023) (in Chinese)
83. **Y Dong**, Life Cycle Assessment in the Building and Construction Sector, Rethinking Pathways to Sustainable Built Environment, Taylor & Francis.
84. **Y Dong***, Y Fang, and ST Ng, Blue Book of Low Carbon Development - China Carbon Label Development Report (2021-2022) - Construction Industry Chapter (in Chinese)
85. **Y Dong**, Y Yang, and H Shen (2022), Suggestions for Promoting the Low Carbon Development of Guangdong's Marine Industry, Southern Think Tank Special Report (in Chinese)
86. X Song, **Y Dong**, and H Shen (2021), Suggestions for universities in the Guangdong-Hong Kong-Macao Greater Bay Area to build zero-carbon campuses and lead zero-carbon communities, Southern Think Tank Special Report (Approved by provincial and ministerial leaders, in Chinese)

Research Grants and Projects

Investigated Research Projects:

1. Zero-Carbon Smart Campus System and Green Building Verification, FRG-MUST, MOP 900,000, 2024.12-2025.11, Principal Investigator.

2. Development of MUST Sustainability Website, FRG-MUST, RMB 271,000, 2024.12-2025.11, Principal Investigator.
3. Development of Zero-Carbon Smart Campus System for Macao based on Dynamic Life Cycle Assessment, FDCT, MOP 1,874,000, 2023.11-2026.11, Principal Investigator.
4. Carbon-negative regional development of Yan Pu Bay, Ecological and Environmental Department of Cangnan Government, RMB 1,045,000, 2024.4-2024.12, Principal Investigator.
5. Design theory and application technique of recycled concrete in coastal regions, FDCT-NSFC, MOP 2,000,000, 2023.11-2026.11, Co-Investigator.
6. Analysis of carbon footprint of macroalgae in China. Jinan University, RMB 65,000, 2023.6-2024.5. Principal Investigator.
7. Research on microalgae carbon sink monitoring and prediction technology in Macau coastal waters, FDCT, MOP 667,000, 2023.5-2025.4, Principal Investigator.
8. Development of a carbon management framework for campus: a case study of M.U.S.T., FRG, Macau University of Science and Technology, MOP 100,000, 2022.10-2023.4, Principal Investigator.
9. Life cycle sustainability assessment modeling of buildings, General Project, Natural Science Foundation of Shandong Province, RMB 100,000, 2022.1-2024.12, Principal Investigator.
10. Carbon Neutrality of Lingshan Island Provincial Nature Reserve – Pathway and Approaches. Shandong Provincial Nature Conservation Fund, RMB 442,400, 2021.4-2021.12, Principal Investigator.
11. Social life cycle assessment of construction waste, RMB 200,000, Talent Grant, Qingdao University of Science and Technology, 2019.3-2022.9, Principal Investigator.
12. Life Cycle Sustainability Assessment of Biodiesel Produced in Hong Kong, THEi Seed Grant, HK$100,000, 2016-2017, Principal Investigator.

Participated Research Projects:

13. Research on theory and technology of large-scale seaweed carbon sequestration and sink enhancement, Southern Ocean Science and Engineering Guangdong Laboratory (Zhuhai) 2021 Independent Scientific Research Project (Key Project), RMB 4,000,000, 2022-2024.
14. Guangdong Marine Industry Carbon Emission Accounting and Assessment System, Department of Natural Resources of Guangdong Province, RMB 5,000, 000, January 2022- December 2022.
15. Development of a HKGBC Green Building Product Labelling Scheme, Hong Kong Green Building Council (HKGBC), 2012-2014.
16. Establishing a Hong Kong based Carbon Labeling Framework for Construction Materials (Phase II), Hong Kong Construction Industry Council Research Fund, 2012-2013.
17. Establishing a Hong Kong based Carbon Labeling Framework for Construction Materials, Hong Kong Construction Industry Council Research Fund, 2011-2012.
18. Water Quality Forecast and Management System for Hong Kong (WATERMAN), Hong Kong Jockey Club Charities Fund, 2008-2011.

Standards and Software Copyright

- Accounting and assessment standard for carbon footprint of cultivated macroalgae, T/IPIF 0020-2023. Association Standard.

- Carbon sequestration monitoring technology regulation of the cultivated macroalgae，T/IPIF 0018-2023. Association Standard.
- Software Copyright: Carbon-Easy (Building) Carbon Emission Calculation Information Tool System V1.0, National Copyright Administration of the People's Republic of China (2023SR1048181)

Teaching Activities

2022/Present MUST

Undergraduate courses:

- *Propaedeutic Sustainability*, Undergraduate courses, General Education Elective, GSS-17, Macau University of Science and Technology (in English).
- *Industrial Ecology*, Undergraduate courses, Department of Environmental Science and Engineering, Faculty of Innovation Engineering, Macau University of Science and Technology (in English).
- *AI in Sustainability,* Undergraduate courses, General Education Elective, Macau University of Science and Technology (in English).

Postgraduate courses:

- *Environmental Impact Assessment*, Master Course, Department of Environmental Science and Engineering, Faculty of Innovation Engineering, Macau University of Science and Technology (in English).

Supervision of Master Students:

- SQ Jin (2024-Present) Prediction of carbon sink by machine learning.
- J Zhou (2024-Present) Field work of carbon sink data collection.
- HM Gu (2024-Present) Energy modeling of buildings.
- LY Mu (2024-Present) Carbon emission of schools.
- C Tang (2023-Present) Regional carbon emissions.
- L Huang (2023-Present) Prediction of carbon reduction pathways.
- KM Chen (2023-Present) Green building schemes.
- HH Meng (2023-Present) Water quality modeling.
- SH Wang (2022-2024) Hybrid life cycle assessment.
- YH Li (2022-Present) LCA of recycled concrete.
- Y Qiu (2022-2024) Zero-carbon campus.
- HP Huang, (2022-2024) Carbon sequestration of microalgae in Macao coastal waters.
- YP Lyu (2022-Present) Forecast of phytoplankton carbon sink by artificial neutral network.
- CY Li (2022- Present) Analysis of water footprint in Pearl River Delta.

Supervision of PhD Students:

- YT Zhao (2023.9-Present) Carbon negative regions.

- Y Qiu (2024.9-Present) Dynamic O-LCA modeling of university campuses.
- HP Huang (2024.9-Present) Carbon sequestration of microalgae in Pearl River Delta.
- ZN Yi (2024.9-Present) Monitoring and predicting carbon sink by remote sensing.
- MH Liang (2024.9-Present) Dynamic life cycle sustainability assessment (LCSA).
- YL Xu (2025.9-Present) Green Building Assessment in Macao.

2021/2022 JNU

Co-supervision of PhD Students:

- Hedy X Wang (2022-Present) , Life cycle carbon emission analysis of macroalgae.
- Ruimin Zhang (2023-Present), Monitoring macroalgae and life cycle assessment of agar products in China.

2019/2022 QUST

Undergraduate Courses:

- *Sustainable Energy Systems* (in English)
- *Recent Development in Research* (in Chinese)

Postgraduate Courses:

- *Academic writing* (in Chinese)

Supervision of Undergraduate FYPs:

- PL Fu (2020), Application of LCA in the new energy industry.
- CL Li (2020), Influence of carbon labeling to the public consumption.
- GY Wang (2020), Comparative analysis of carbon emissions of electricity powers.
- WT Wang (2020), Environmental impacts of fuel cell based on LCA.
- Y Xiao (2020), Life cycle assessment of electric vehicles.
- XH Li (2021), Life cycle carbon emissions of new energy vehicles.
- YB Meng (2021), Environmental Product Declaration of Rubber Products.
- WJ Zhang (2021), Life cycle energy consumption of green buildings.
- BL Chen (2021), Relationship between carbon emissions and new energy industry in China.
- Y Hu (2022), Analysis of the carbon emission peak of power industry

Supervision of Master Students:

- YT Zhao (2019-2022), Life cycle assessment of vehicle tires and rubber products.
- TY Yang (2021-2024), Building information modeling (BIM) integrated with life cycle assessment.

2015/2017 THEi

Undergraduate Courses:

- *Industry –based Student Project.* Undergraduate Course (SEV4013), Technological and Higher Education Institute of Hong Kong. (in English)
- *Introduction to Ecology*, Undergraduate Course (SEV 4104), Technological and Higher Education Institute of Hong Kong. (in English)

- *Managing Chemical Wastes in Hong Kong*, Safety, Health and Industrial Training, Undergraduate Course (SEV 4109), Technological and Higher Education Institute of Hong Kong. (in English)
- *Introduction to Environmental Economics*, Undergraduate Course (SEV 4112), Technological and Higher Education Institute of Hong Kong. (in English)
- *Environmental Policy and Legislations*, Undergraduate Course (SEV 5211), Technological and Higher Education Institute of Hong Kong. (in English)
- *Sustainable Energy Systems*, Undergraduate Course (SEV 5371), Technological and Higher Education Institute of Hong Kong. (in English)
- *Sustainability Assessment and the Role of LCA*, General Education Course (GEE 5301-1), Technological and Higher Education Institute of Hong Kong. (in English)
- *Green Building and the Assessment Schemes*, General Education Course (GEE 5301-2), Technological and Higher Education Institute of Hong Kong. (in English)
- *Heat/Mass Transfer & Energy Efficiency,* Undergraduate Course (SEV 5271), Technological and Higher Education Institute of Hong Kong. (in English)

Field Trips with Students:

- ASB Biodiesel, Chun Wang Street, Tseung Kwan O Industrial Estate, Tseung Kwan O, Hong Kong
- CLP ElectriCity, Castle Peak Power Station, Lung Yiu Street, Tap Shek Kok, Hong Kong
- Dunwell, Wang Lee Street, Yuen Long Industrial Estate, Yuen Long, Hong Kong
- Kadoorie Farm & Botanic Garden Corporation, Lam Kam Road, Tai Po, Hong Kong
- Zero Carbon Building, HKCIC, Kowloon Bay, Hong Kong

Supervision of Undergraduate FYPs:

- SY Chua (2016), Life Cycle Assessment of Lightweight Building Façade Panel.
- AYH Wong (2016), Life-Cycle Cost Management of Concrete Surface Spalling of Reinforced Concrete Structure.
- WY Chan (2017), Comparative Study on Carbon Labeling Schemes.
- YC Chau (2017), Life Cycle Carbon Emissions of Student Residential Hall at THEi Tsing Yi Campus.
- WL Choi (2017), Application of Life Cycle Assessment in the Environmental Field.
- JLC Choi (2017), Development of an Impact Assessment Method of Eutrophication in Hong Kong.
- S Huen (2017), Social Life Cycle Assessment of Biodiesel.
- TYH Kwan (2017), Environmental Life Cycle Assessment of Biodiesel.
- BY Lai (2017), Analysis of the Influence from HATS to the Water Quality in Hong Kong Coastal Waters.
- LT Law (2017), Embodied Carbon Emission Analysis of Student Residential Hall at THEi Tsing Yi Campus.
- S Lu (2017), Review on the Recent Development of LCIA Method of Water Footprint.
- KY Yip (2017), Life Cycle Costing Modeling of Biodiesel.
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Co-supervision of PhD Students:

- Hossain, Mohammad Uzzal (2013-2017), Life Cycle Assessment of Recycled Construction Materials: Methodology Framework Development and Results Evaluation, The Hong Kong Polytechnic University

Examination of FYPs:

- PT Chan (2016), Development of Lightweight Green Roofing System by Recycled Scrap Rubber Tyre Chips.
- TH Cheng (2016), Development of Lightweight Building Façade Panels by Recycled

Rubber/Plastic/Aggregate Materials

- MC Chin (2016), Life Cycle Assessment of Glass Bottle Incineration in HK: Future Study.
- SH Chu (2016), Life Cycle Assessment of Reverse Osmosis Desalination Process: Feasibility Study in HK.
- TF Fung (2016), Reliability Assessment of Rain-induced Shallow Landslides.
- SL Ho (2016), Feasibility Study of Carbon Trading in China.
- HY Kong (2016), Improving Maintainability of Rigid Pavement in Down Town of Hong Kong.
- KT Kung (2016), Evaluation of Greenhouse Gas Emissions from Organic Waste Treatment Facility, Phase 1 in Hong Kong based on Life Cycle Assessment Perspective.
- CN Lee (2016), Numerical simulation of Zhouqu debris flow using FLO-2D.
- YL Lee (2016), Possible Use of Industrialized Housing and Building System in Hong Kong Public Housing.
- CH Li (2016), The Studies and Applications of the Vertical Greening System in Hong Kong.
- CY Ng (2016), A Study of Shear Strength for Reinforced Concrete Beam-Column Joint.
- VPY Siu (2016), Study of Flow Measurement by Tipping Bucket.
- HM Tsang (2016), Insight from Neighboring Regions - Enhance the Use of Prefabrication in Hong Kong through Policy Change.
- IWF Wong (2016), Development of Lightweight Building Façade Panels by Recycled Rubber/Plastic/Aggregate Materials.
- KW Wong (2016), Life Cycle Assessment of Glass Bottle Incineration in Hong Kong.
- Z Zhong (2016), Maintainability of Public Rental Housing from Design, Construction and Management Perspectives.

2009/2013 HKU

- *Hydraulics and Hydrology*, Undergraduate Course (CIVL2004), Department of Civil Engineering, The University of Hong Kong (in English)

Invited Talks and Other Presentations

- November, 2024, Overview of Previous Research on Life Cycle Assessment and Life Cycle Sustainability Assessment, Deakin University, Australia
- May, 2024, Carbon Emission Accounting and Carbon Neutral Pathway Exploration at Macau University of Science and Technology, BEWG Forum at BEYOND EXPO 2024, Venetian Macau Cotai Expo, Macao
- February, 2024, Overview of Previous Research on Life Cycle Assessment and Life Cycle Sustainability Assessment, Western Sydney University, Australia
- November, 2023, Applications of life cycle sustainability assessment in the building industry, Shenzhen, China
- November, 2023, Carbon footprint training course, Jinan University, Guangzhou, China
- July, 2023, Life Cycle Assessment and Life Cycle Sustainability Assessment: A Summary on Previous Research, University College London, United Kingdom
- July, 2023, Achieving the “dual carbon target” at township level: a case study of an island, University College London, United Kingdom
- May, 2023, Carbon sink by microalgae in coast waters, Marine Carbon Sink Management and Macroalgae Restoration Forum, Jinan University
- May, 2023, Challenges and Opportunities of LCSA: a Case Study of Buildings, Symposium on Improving

Energy Efficiency of Buildings to Promote Low-carbon Development, Macau University of Science and Technology

- December 2022, How to publish scientific papers, MUST。
- October 2022, Jinan University (Guangzhou), Life cycle assessment- an introduction.
- March 2022, Qingdao Energy Conservation Association, Topic: Carbon Emissions of Buildings.
- March 2022, Qingdao Energy Conservation Association, Topic: Product Carbon Footprint.
- January 2022, China Certification & Accreditation Association, Topic: Greenhouse Gas Accounting.
- December 2021, China Certification & Accreditation Association, Topic: Greenhouse Gas Accounting
- August 2021, Jinan University, Guangzhou, Topic: Life cycle sustainability assessment of buildings.
- August 2021, China Academy of Science, Topic: Development of a Calculation Tool for Carbon Accounting.
- April 2019, Qingdao University of Science and Technology, Life cycle sustainability assessment of buildings.
- February 2016, City University of Hong Kong, Topic: Life cycle assessment and green buildings.
- December 2015, 14th Hong Kong Green School Award, VTC, HKSAR, Topic: Towards a Low-carbon School.
- December 2014, Sichuan University, China, Topic: Life cycle sustainability assessment modeling of building construction.
- May 2012, The University of Hong Kong, HKSAR, Topic: Introduction to LCA.

Membership and Certification

Associate Director	**2022-present**	China Green Building and Energy Saving (Macau) Association.
Individual member	**2021-present**	United Nations Environmental Programme (UNEP), Life Cycle Initiative (LCI)
Registered Lecturer	**2021-present**	China Certification and Accreditation Association (CCAA)
Associate member	**2015 – present**	Hong Kong Green Building Council (HKGBC)
BEAM Pro (with BI)	**2015 - 2018**	BEAM Professional accredited by Hong Kong Green Building Council (HKGBC)
Member	**2015 - 2017**	Hong Kong Concrete Institute (HKCI)
Student member	**2013-2014**	Society of Environmental Toxicology and Chemistry (SETAC)
Student member	**2012-2014**	Hong Kong Green Building Council (HKGBC)

Professional Services

Conference Session Chair

- The Decarbonising Building Industry (DBI) 2024 Conference, November 25, 2024, Melbourne, Australia
- The 2nd International Bay Area Urban Agglomeration Green Development Conference, August 14-17, Macao, China
- The 18th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), September 24-29, 2023, Dubrovnik, Croatia
- The 5th SDEWES SEE Conference, Sustainable Development of Energy Water and Environment Systems (SDEWES), May, 2022, Vlore, Albania
- International Conference on Advancement of Construction Management and Real Estate, December, 2016, Hong Kong, China.
- International Conference for Sustainable Development and Management,

June 2015, Hong Kong, China

Publication Chair - 2023 International Conference on Industrial Design and Environmental Engineering (IDEE 2023), November 24–26, 2023 in Zhengzhou, China.

Conference Advisory Board -The 19th Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES2024 Rome
- The 1st North American Conference on Sustainable Development of Energy, Water and Environment Systems - NA. SDEWES2024
-The 17th Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES2023 Dubrovnik

Organizing committee - The 5th International Conference on Urban Engineering and Management Science (ICUEMS 2024)
-China-Portugal Forum on Coastal Environment and Innovative Technology for Sustainable Development (CPCET 2023), March 27 - April 1, 2023

Journal Editor **Editorial Board:** International Journal of Sustainable Engineering
Guest Editor: Special Issue: Life Cycle Assessment as an Environmental Sustainability Tool, Sustainability
Guest Editor: Special Issue: Frameworks, Tools, Methods, Indicators, and Considerations for Evaluating Circular Economy in Buildings, Buildings

Journal Reviewer Renewable and Sustainable Energy Review
Waste Management
Energy and Buildings
Sustainable Cities and Society
Sustainable Production and Consumption
Journal of Environmental Management
Environmental Impact Assessment Review
Journal of Cleaner Production
Journal of Industrial Ecology
Science of the Total Environment
Construction and Building Materials
International Journal of Life Cycle Assessment
Building and Environment

Book Reviewer Green Construction Project Life Cycle Management, Developing a Body of Knowledge for Green Construction Project Management

Competition Chair The 4th International Conference on Resources and Environmental Research

Departmental Services

- Outreach Committee of Faculty
- Academic Forum Organizing Committee
- Online undergraduate enrollment host
- Postgraduate enrollment interviewer
- Undergraduate dissertation examiner
- Postgraduate thesis examiner
- Examination invigilator
- Participation in the assessment of department
- Consultant for students with Special Education Needs (SEN)

Honors and Awards

- 2022 The 5th National LCA Carbon Neutral Competition. The Second-class Prize.
- 2022 The 4th National WebLCA Competition. The First-class Prize.
- 2021 Top 10 Most Viewed Presentations, Developing a Calculation Tool of Regional Carbon Emissions (CToRCE): A Case Study of Lingshan Island in China, 5th Sustainable Process Integration Laboratory Scientific Conference: Energy, Water, Emissions & Waste in Industry and Cities, November 4-5, 2021, Brno, Czech Republic.
- 2017 Best Contribution to Sustainable Production, International Life Cycle Academy, ILCA. (Paper: U Hossain, CS Poon, YH Dong. Environmental impact distribution methods for sustainability assessment of concrete incorporating supplementary Cementitious Materials, Renewable & Sustainable Energy Reviews.)
- 2015 Best Paper Award, International Conference for Sustainable Development and Management, June 2015, Hong Kong, China.
- 2014 Senior Tutor Award in Department of Civil Engineering, The University of Hong Kong
- 2011-2014 Postgraduate Scholarship, The University of Hong Kong
- 2008-2010 Postgraduate Studentship, The University of Hong Kong
- 2008 Outstanding Graduate in Shandong Province

Languages

English

Putonghua

Cantonese