

YenYu Lin 林彥宇, Ph.D.

Curriculum Vitae

Dept. of Construction Engr.
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National Kaohsiung University of Science and Technology
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EDUCATIONAL HISTORY

Doctor of Philosophy in Civil Engineering 2012
University of Washington, Seattle WA
Dissertation: Eco-decision Making for Pavement Construction Projects
Advisor: Dr. Stephen T. Muench

Master of Science in Civil Engineering 2004
National Cheng Kung University, Tainan, Taiwan
Thesis: Analysis of cracks initiation and fatigue life of asphalt concrete (in Mandarin)
Advisor: Dr. Jian-Shiuh Chen

Bachelor of Science in Civil Engineering 2002
National Cheng Kung University, Tainan, Taiwan

REASERCH INTERESTS

- Engineering performance of roadway materials
- Life Cycle Assessment of construction materials and infrastructure
- Carbon management of infrastructure estimation and inventory
- Sustainability rating system and sustainable practices for Infrastructure

EMPLOYMENT HISTORY

Construction Engineering Dept., NKUST, 2017.02-present
Assistant Professor

Environmental Engineering Dept. I, Sinotech Engineering Consultants, Ltd 2013.02-2017.01
Project Director

Dept. Of Civil And Environmental Engineering, UW Graduate Research Associate	2007.09-2012.11
Railway Engineering Dept., Sinotech Engineering Consultants, Ltd Engineer	2007.01-2007.08
Business Dept., Hwang Chang General Contractor Co., Ltd Associate Engineer	2006.06-2006.12

AWARDS AND HONORS

- 鋪面工程傑出論文獎，中華鋪面工程學會，2024
- 112 年度國家科學及技術委員會工程處民生化材組產學成果優良獎，2023.11
- International Road Federation Global Road Achievement Award - Environmental mitigation, 公路總局西濱南八棟寮-九塊厝碳管理計畫，2019
- 鋪面工程傑出論文獎，中華鋪面工程學會，2018
- Outstanding Young Engineer, Sinotech Engineering Consultants, Ltd, 2016
- Best Paper Award, First International Conference on Transportation Infrastructure Materials, 2016.
- Paul B. Liao Endowed Regental Fellowship (Tuition waiver and stipend), 2007~2009.
- Citation of Distinguished Reserve Officer, Minister of National Defense, R.O.C., 2005.
- Presidential Award of National Cheng Kung University (first of class), 2002~2004.

AFFILIATIONS AND OTHER APPOINTMENTS

- Deputy Director of Young Engineer and Professional, Chinese Society of Pavement Engineering, 2018.11~2020.10, 2024.11~present
- Editorial Board, *Journal of Global Governance and Sustainability*, 2025.06~present
- Young Engineer and Professionals Committee, Chinese Road Federation, 2018.06~present
- Sustainability Committee, Value Management Institute of Taiwan, 2025.04~present
- Sustainability Committee, Taiwanese Institute of Built Environment Lifecycle Management, 2025.04~present
- ESG Committee, Taiwanese Public Engineering Development Association, 2025.02~present
- Deputy Secretary (South Region), Chinese Society of Pavement Engineering, 2020.11~2024.10

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- Technical Committee of The American Center for Life Cycle Assessment, 2010-2012.
 - Greenroads Foundation, Advisory Council, 2017.02~2023.01
 - Executive Secretary, Organizing Committee, 2021 Concrete Conference, Taiwan Concrete Institute, 2021.03~2021.11
 - International Scientific Committee, 5th International Conference of Transportation Infrastructure, 2021.11~2022.08
 - Organizing Committee, the 110th Road Engineering Association of Asia and Australasia (REAAA) Council Meeting & 7th Business Forum, 2018.06~2019.04
 - Industry Expert, Collaborative Teaching Program, National Taiwan University of Science and Technology, 2015-2016
 - 查核委員，高雄市政府工務局，工程查核小組，2025.06 ~ 迄今
 - 諮詢委員，監察院調查”豪雨導致市區道路坑洞及路基下陷”學者專家諮詢會議，2019.05
 - 諮詢委員，高雄市政府工務局，爭議調處委員會，2019.01 ~ 2019.12
 - 諮詢委員，內政部建築研究所 107 年度創新低碳綠建築環境科技計畫，學者專家諮詢會議，2018.05 & 2018.11
 - 委員，達”道”宜居專案，高雄市政風處，2017.02~2017.06
 - Invited Reviewer, Proceeding of ICPT, 2025
 - Invited Reviewer, International Journal of Pavement Research and Technology, 2019, 2023
 - Invited Reviewer, Journal of the Chinese Institute of Civil & Hydraulic Engineering, 2020, 2022~2024
 - Invited Reviewer, Proceedings of EASTS, 2017, 2019, 2023
 - Invited Reviewer, Journal of Cleaner Production, 2015.

PUBLICATIONS

- Chen, Jian-Shiuh, C.T. Lee, Yen-Yu Lin, (2018) “Characterization of a Recycling Agent for Restoring Aged Bitumen,” Journal of Materials in Civil Engineering, Volume 30 Issue 8, August 2018 (SCI)
 - Liao, Min-Chih, Yen-Yu Lin and Tseng, M., (2018) "Laboratory Evaluation of Aging on Engineering Properties of Fine-Graded Porous-Asphalt Concrete," Journal of Testing and Evaluation, Vol. 46, No. 1, 2018 (SCI)
 - Liao, Min-Chih, Yen-Yu Lin, (2017) “Rutting Performance of Porous Asphalt Concrete for Heavy Duty Pavement,” Journal of Eastern Asia Society for Transportation Studies, Vol.12, April 2018.
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- Chen, Jian-Shiuh, Han-Chang Ho, Yen-Yu Lin, (2017) "Production, Construction, Properties, and Performance of a Test Road with High Reclaimed Asphalt Pavement Content," Transportation Research Record: Journal of the Transportation Research Board, No.2633, Vol. 3, November 2017 (SCI)
 - Chen, Jian-Shiuh, C.T. Lee, Yen-Yu Lin, (2017) "Influence of Engineering Properties of Porous Asphalt Concrete on Long-Term Performance," Journal of Materials in Civil Engineering, Volume 29 Issue 4, April 2017 (SCI)
 - Chen, Jian-Shiuh, P. Y. Chu, Yen-Yu Lin, K. Y. Lin (2007), "Characterization of Binder and Mix Properties to Detect Reclaimed Asphalt Pavement Content in Bituminous Mixtures", Canadian Journal of Civil Engineering, Vol. 34, No. 5, pp.581 – 588 (SCI)
 - 林彥宇、鄭羽岑、周翊嫻 (2024 年 03 月)。2050 淨零排放：以鋪面工程為例。鋪面工程，22(1),13-26。(113 年鋪面工程傑出論文獎)
 - 林彥宇、陳伯玟、蔣曜州 (2023 年 09 月)。溫拌劑添加於瀝青混凝土抗開裂性質之研究。鋪面工程，21(3),45-58。(獲鋪面學會推薦參與中國工程師學會論文獎)
 - 林彥宇、蔡孟儒、陳昱宏 (2023 年 12 月)。纖維添加於瀝青混凝土之抗開裂性能之研究。鋪面工程，21(4),59-70。國科會：111-2622-E-008-017。
 - 翁浚誠、林彥宇、吳宗翰 (2021 年 06 月)。水淬爐石粉瀝青膠漿之質流性研究。鋪面工程，第 19 卷，第 4 期。科技部：109-2222-E-992-001-MY2。
 - 張宸翔、許焜奮、曾國鴻、林彥宇、呂沒間 (2021 年 03 月)。鋪面型式及黏層對層間黏結力之數值分析。鋪面工程，第 19 卷，第 3 期。
 - 陳保展、羅國鋒、林彥宇、許珮蓓、王寧沂 (2018 年 06 月)。西濱快速公路八棟寮至九塊厝新建工程之鋪面工程生命週期排碳特性分析。鋪面工程，16(2), p55-p64。(107 年鋪面工程傑出論文獎)
 - 胡憲倫、林彥宇、許珮蓓、黃琬淇、周武雄、黃慶耀，「台灣公共工程碳足跡推動之現況及展望」，土木水利雙月刊，第四十一卷第六期，第 58-64 頁，2014。
 - 黃琬淇、林彥宇、周武雄、許珮蓓、楊伊萍，道路工程碳足跡盤查規範制度與實務應用，中興工程季刊，第 125 期，第 86-94 頁，2014。

Conference Proceedings

- Lin, Yen-Yu, Bo-Wen Chen and Po-Chieh Hsu (2025 Jul), "Intermediate Temperature Anti-Cracking Properties of Warm-mix Asphalt Concrete," 14th International Conference on Road and Airfield Pavement Technology (ICPT 2025)
 - Lin, Yen-Yu, Meng-Ru Tsai, Yu-Chen Cheng (2025, May), "Mastic Rheological Properties and Cracking Properties of Fiber Asphalt Concrete," 2025 NTRO International Technical Conference
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- Su, Che-Chun, Fu-Yu Tsai, Yen-Yu Lin, Chung-Lu Yuan, Chung-Ren Huang (2022, Nov). Assessment of Carbon Emission, Construction Period and Cost of GRSW. GeoAsia7 Conference
 - Min-Chih Liao, Yen-Yu Lin, "Rutting Performance of Porous Asphalt Concrete for Heavy Duty Pavement," International Conference of Eastern Asia Society For Transportation Studies, Ho Chi Minh City, Vietnam, September 2017
 - Min-Chih Liao, Kun-Chih Sia, Yen-Yu Lin, "Rheological Properties of Bitumen Blended with Natural Asphalt at Low Shear Conditions," International Conference on Road and Airfield Pavement Technology, Hong Kong, August 2017
 - Min-Chih Liao and Yen-Yu Lin, "Pavement Performance Evaluation of Porous Asphalt Concrete Overlay," 10th International Conference on Road and Airfield Pavement Technology, 2017, Hong Kong.
 - Min-Chih Liao and Yen-Yu Lin, "Engineering Properties of PAC Thin Surfacing for Pavement Rehabilitation," 2nd IRF Asia Regional Congress & Exhibition, Kuala Lumpur, Malaysia, 16-20, October, 2016.
 - Min-Chih Liao and Yen-Yu Lin, "Laboratory Evaluation of Cold-mix Porous Asphalt Concrete (CM-PAC) Patching Materials", 8th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV8), Singapore, 2016.
 - Jian-Shiuh Chen; Cheng-Te Lee; Yen-Yu Lin, "Laboratory and Field Evaluation of Porous Pavement," First International Conference on Transportation Infrastructure Materials, Xi-an, China, 2016. **(Best Paper Award)**
 - Steve Muench, Yen-Yu Lin, Si Katara, and Amit Armstrong, "Roadprint: Practical Pavement Lifecycle Assessment (LCA) Using Generally Available Data," International Symposium on Pavement LCA, Davis, California, USA, 2014.
 - Muench, S.T.; Martinez Caraballo, E., Lin, Yen-Yu, Gutub, S., Willoughby, K. and Uhlmeier, J., "Impact on Emissions and Energy Consumption of Evolving Pavement Materials Practices from 1990 to 2010: A Washington State Department of Transportation Case Study." TRB Annual Meeting, TRB, National Research Council, Washington, D.C., 2014
 - 林彥宇、游承勳、余紀彤（2024 年 11 月）。再生瀝青混凝土抗開裂性能評估。第 16 屆鋪面材料再生及再利用學術研討會暨第 6 屆永續與創新基礎建設研討會。
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- 林彥宇、陳昱宏、許柏杰（2024 年 11 月）。纖維長度影響密級配瀝青混凝土之研究。第 16 屆鋪面材料再生及再利用學術研討會暨第 6 屆永續與創新基礎建設研討會。國科會：111-2622-E-008-017。
 - 林彥宇、蔡孟儒、梁懷蓉（2022 年 11 月）。不同填充料於瀝青膠泥之流變性質研究。第十五屆鋪面材料再生及再利用學術研討會暨第四屆永續與創新基礎建設國際研討會。科技部：109-2222-E-992-001-MY2。
 - 林彥宇、吳諺柏、陳伯玟（2022 年 11 月）。瀝青混凝土抗開裂性能之研究。第十五屆鋪面材料再生及再利用學術研討會暨第四屆永續與創新基礎建設國際研討會。
 - 蘇育民、林彥宇、周翊嫻、林禹辰、陳彥霖（2022 年 11 月）。再生瀝青混凝土現地抗開裂性能之研究。第十五屆鋪面材料再生及再利用學術研討會暨第四屆永續與創新基礎建設國際研討會。
 - 林彥宇、李彥華、朱崇德（2021 年 11 月）。瀝青混凝土產品階段碳排放之研究。中華民國第二十一屆鋪面工程學術研討會。（優秀論文獎）
 - 鍾凱羽、黃隆昇、林彥宇(通訊作者)，「不同孔隙之多孔隙瀝青混凝土降溫行為之研究」，工程永續與土木防災研討會，2019。
 - 許焜奮、曾國鴻、林彥宇(通訊作者)，「鋪面型式及黏層對層間黏結力影響之研究」，第十九屆鋪面工程學術研討會，2017。
 - 夏明勝、林彥宇、許珮蒨、周武雄、曠永銓，「臺灣西濱快速公路碳足跡盤查作業實務及展望」，第三屆兩岸四地公路交通發展論壇，香港，2014。
 - 林彥宇、許珮蒨、周武雄，「鋪面工程溫室氣體排放量評估與減量策略研析」，第二屆兩岸四地公路交通發展論，台灣，2013。

Manuals

- Contributing author, Pilot Test Version, Compendium of System Planning and Processes, Project Delivery and Operations & Maintenance Criteria, Sustainable Highway Self-evaluation Tool, FHWA, 2011.
- Contributing author, Greenroads Manual v1.5, University of Washington, 2011.
- Contributing author, Greenroads Manual v2.0, Greenroads Foundation, 2015.

Research report

- Muench, S.T.; Martinez, E. and Lin Yen-Yu, Determining Changes in Greenhouse Gas Emissions (1990-2010) due to Pavement Technology. WA-RD 838.1. Washington State Department of Transportation (WSDOT), Olympia, WA, 2015

Software

- **Lin, Yen-Yu**, Muench, S.T. and Pavia Systems, Inc. Roadprint. Pavement life cycle assessment (LCA) online application. (2013)

OTHER SCHOLARLY ACTIVITY

Invited Presentation and Lecture

- “碳盤基礎概念”，氣候中和減碳行動專案委辦服務計畫，高雄市殯葬處，2025.06
- “道路鋪面與生命週期碳足跡”，蘇花改工程處，2025.02
- “道路鋪面生命週期碳足跡”，113 年淡江大橋年度研討會，2024.10
- “軌道基礎設施減碳措施與挑戰”，台灣高鐵，2024.09
- “基礎設施減碳措施與挑戰”，桃園市政府水務局，2024.08
- “學術面向工程碳足跡盤查精進策略探討”，113 年淡江大橋年度座談會，2024.05
- “Laboratory Performance Evaluation of Low Carbon Asphalt Concrete,” Taiwan-Indonesia Science and Technology Innovation Center: Low Carbon Construction Workshop, 2024.04
- “2050 淨零與工程碳排放”，國道鋪面工程減碳之策略專題研究教育訓練，2023.12
- “公共工程全生命週期減碳策略”，中華民國工程技術商業同業公會，2023.12
- “2050 淨零與工程碳排放”，高雄市土木技師公會，2023.11
- “水淬爐石粉於密級配瀝青混凝土質流、剝脫與開裂之影響”，成功大學土木系碩專班專題討論，2023.11
- “水淬爐石粉於密級配瀝青混凝土質流、剝脫與開裂之影響”，落重式撓度儀結合動態地磅檢測分析成果發表會，2023.10
- “2050 Net Zero and Construction,” Invited speaker at the Taiwan International Water Forum, 2023.10
- “Carbon Management of Highway -The Experience of Taiwan,” Invited speaker at 28th Singapore Symposium on Pavement Technology, 2023.10
- “2050 Net Zero and Challenges for Pavement Engineering,” College of Design and Engineering, Department of Civil & Environmental Engineering, National University of Singapore, 2023.10
- “Sustainability of Roadway Engineering,” Seminar talk at Faculty of Transportation Engineering, College of Engineering, Can Tho University, 2023.04
- 2050 淨零與工程碳排放，中興顧問社對外課程，2023.06
- “公共工程生命週期節能減碳之道”，台中市政府研考會，2022.12
- “溫室氣體管理與 2050 淨零”，瀝青混凝土施工及實務教育訓練，高公局中區養護分局，2022.12
- “工程碳排放與淨零”，中央大學營管所，2022.11
- “工程碳排放與計算方法”，臺北市工務局年度教育訓練，2022.11

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- “工程碳排放-現在與未來”，淡江大橋教育訓練，公路總局西濱北工程處，2022.06
 - “公路工程碳排放計算”，國道瀝青混凝土路面生命週期評估座談會，2022.04
 - “基礎設施之減碳作為與挑戰”，成功大學節能講堂，2021.12
 - “綠道路設計介紹”，交通部公路總局技術座談，材料試驗所，2019.04
 - “Sustainability of Roadway Engineering,” Workshop, CE Dept., NKUST, 2018.08
 - “Carbon Footprint Inventory for Road: The Practice in Taiwan,” 7th REAAA Business Forum, 2019.04
 - “Introduction of Carbon Footprint Inventory and Life-Cycle Analysis of Highways,” Seminar, KAUS, 2018.05
 - “混凝土新思維-碳足跡”，晉瑜混凝土技術講座，2018.03
 - “國內水利機關節能減碳及碳管理作為”，水利設施工程簡碳創新經驗分享講座，經濟部水利署，2017.11
 - “綠道路評估系統簡介”，工程碳管理與綠道路教育訓練，台灣區國道新建工程局第二區工程處，2016.07
 - “Lesson learned from highway carbon footprint inventory and verification – experience of Taiwan,” 7th International Highway Technology Summit, Shanghai, 2015.04
 - “Experience on Carbon footprint inventory of Westshore Expressway in Taiwan,” 3rd Cross Strait Highway and Traffic Conference, Hong Kong, 2014.11
 - “Toward Low Carbon Design–Carbon Management of the Suhua Highway Improvement Project,” CICHE International Round Table Meeting Sustainable Innovation Low Carbon Design and Eco-City, Taipei, 2013.12
 - “溫室氣體、生命週期評估與工程碳足跡應用”，中興工程基金會-工程實務校際專題演講，國立台灣大學，2014.10
 - “溫室氣體、碳足跡與生命週期評估”，鼎漢國際工程顧問股份有限公司，2013.04
 - “GHG emission evaluation and reducing strategy of pavement construction,” 2nd Cross Strait Highway and Traffic Conference, Taipei, 2013.11
 - “Lifecycle Assessment Framework and Inventory for Pavement Construction,” Graduate Student Seminar, University of Washington, 2010.09
 - “Lifecycle Assessment Framework and Inventory for Pavement Construction,” Graduate Student Seminar, University of Washington, 2010.09
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Funded Research Projects

Academy of Medical Sciences, UK

- PI, Multi-waste source valorisation Towards Optimal & Innovative Applications via Digital Manufacturing: Bridging Taiwan and UK Decarbonisation experiences (MSVIA-DMTUK)” (2025.03~2026.03)

National Science and Technology Council, Taiwan

- PI, The application of GGBFS on DGAC in conjunction with Balance performance evaluation (2024.08~2025.07)
- Co-PI, Development and test verification of innovative joint fasteners in cold-rolled steel structural systems (III) (2025.06~2026.05)
- Co-PI, Development and test verification of innovative joint fasteners in cold-rolled steel structural systems (II) (2024.06~2025.05)
- Co-PI, Development and test verification of innovative joint fasteners in cold-rolled steel structural systems (I) (2023.06~2024.05)
- Co-PI, Integration of PSO-based projected algorithms and micro X-ray computed tomography in civil materials toward resilient and durable design (2022.06~2023.05)
- Co-PI, A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters (2022.01~2025.06)
- PI, Effects of blast furnace slag (BFS) filler on DGAC moisture susceptibility in conjunction with fineness of BFS fillers (2020.08~2022.07)

Taipei City Research Projects

- PI, Strategies for infrastructure 2050 Net Zero II (2023.01~2023.12)
- PI, Strategies for infrastructure 2050 Net Zero (2022.01~2022.12)

教育部計畫

- 協同主持人，高雄山都心-永續藍圖計畫，大學社會責任實踐計畫 (2023.01~2024.12)
- 協同主持人，安居桃花源-港都山線人文新風貌營建計畫，大學社會責任實踐計畫 (2020.01~2022.12)
- 協同主持人，義築桃花源-港都山線人文新風貌營建計畫，大學社會責任實踐計畫 (2018.01~2019.12)

產學合作計畫

- 主持人，中興工程顧問股份有限公司，高快速公路碳排估算及減碳設計參考指引諮詢顧問(2024.10~2025.11)
- 主持人，茂登碳中和股份有限公司，中油大林石化油品儲運中心節能減碳顧問案 (2024.05~2027.11)
- 協同主持人，營建署，橋梁伸縮縫使用 UHPC 初步可行性評估委託專業服務案 (2022.06~2024.05)
- 協同主持人，公路總局材料試驗所，瀝青混凝土抵抗疲勞裂縫之耐久性研究及規範研擬 (2021.02~2022.12)

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- 主持人，世誠營造股份有限公司-國立臺灣藝術大學多功能活動中心新建工程碳排放盤查作業 (2017.05~2019.09)
 - 主持人，中興工程顧問股份有限公司-西濱快速公路八棟寮至九塊厝新建工程(交通部公路總局西濱快速公路南區臨時工程處)委託工程碳管理暨碳足跡盤查輔導及查證服務工作-碳足跡盤查輔導與分析(2017.04~2018.12)
 - 主持人，環興科技股份有限公司-國道 4 號臺中環線豐原潭子段(交通部國道新建工程局)-綠道路先導評估及認證作業(2017.04~2018.10)
 - 主持人，環興科技股份有限公司(交通部公路總局西濱快速公路北區臨時工程處)-碳足跡應用於快速公路地工合成材料之研究委託服務工作(2017.04~2018.08)