Pangil Choi, Ph.D., P.E.

Assistant Professor | Department of Civil, Environmental, and Construction Engineering
Texas Tech University

2500 Broadway St, Lubbock, TX 79409 | Mobile: (806) 786-2005 | Email: pangil.choi@ttu.edu

EDUCATION

- **Ph.D. in Civil Engineering (Pavement Engineering)** — Texas Tech University, Lubbock, TX (Aug 2015)
  Dissertation: Evaluation of Structural Responses of Continuously Reinforced Concrete Pavement | Advisor: Dr. Moon Won
- **Ph.D. in Civil Engineering (Concrete Materials)** — Kangwon National University, South Korea (Feb 2010)
  Dissertation: Early-Age Shrinkage and Air Void Structure of Very-Early Strength Latex-Modified Concrete Using Ultra-Fine Fly Ash | Advisor: Dr. Kyong-Ku Yun
- **M.S. in Civil Engineering** — Kangwon National University, South Korea (Feb 2005)
  Thesis: Early-Age and Restrained Shrinkage of Very-Early Strength Latex-Modified Concrete | Advisor: Dr. Bong Hak Lee
- **B.S. in Civil Engineering** — Kangwon National University, South Korea (Feb 2002)

PROFESSIONAL LICENSURES & QUALIFICATIONS

- **Licensed Professional Engineer (P.E.)**, Texas, USA (License No. 136502), 12/12/2019
- **Licensed Concrete Engineer**, South Korea (License No. 07203110010G), 11/19/2007

PROFESSIONAL EXPERIENCE

- **Assistant Professor** — Dept. of Civil, Environmental, and Construction Engineering, Texas Tech University (Sep 2026 – Present)
- **Pavement Engineer / Forensic Engineer** — Texas Department of Transportation (TxDOT) (Feb 2019 – Aug 2026)
- **Senior Research Associate** — Center for Multidisciplinary Research in Transportation, Texas Tech University (Sep 2010 – Feb 2019)
- **Senior Researcher** — Daesang ENC Co. Ltd., South Korea (Mar 2008 – Feb 2010)
- **Academic Advisor** — Kangwon National University, South Korea (Mar 2006 – Feb 2008)
- **Construction Engineer** — Yu-Soo Construction Co., Ltd., South Korea (Oct 2001 – Feb 2005)

RESEARCH GRANTS & FUNDING

Academic Research Grants

- **TxDOT Interagency Cooperation Contract No. 000039510**: "Technical Support for Rigid Pavement Analysis, Design, Training, and Forensic Evaluations" Texas Tech University, **PI**, $800,000 (09/01/2026 – 08/31/2028)
- **TxDOT Project No. 0-6951:** "Development of Rational CPCD Pavement Design Procedures" — Texas Tech University, **Co-PI**, $318,978 (09/2017 – 08/2019)

- **TxDOT Project No. 0-6910:** "Development of Proper Overlay Type and Designs for PCC Pavement" — Texas Tech University, **Co-PI**, $271,633 (01/2016 – 02/2018)
- **TxDOT Project No. 0-6826:** "Research on Joint Sealant Materials to Improve Installation and Performance" — Texas Tech University, **Co-PI**, $203,285 (07/2014 – 01/2016)
- **TxDOT Project No. 0-6681:** "Minimize Premature Distresses in Continuously Reinforced Concrete Pavement" — Texas Tech University, **Co-PI**, $212,945 (CTR Share: $60,000) (09/2011 – 08/2013)

PATENTS

U.S. Patents Issued

- P. Choi, et al., Method for Constructing Continuously Reinforced Concrete Pavement Using Reinforcing Steel Introducing/Fixing Equipment, U.S. Patent US20150259862 A1, Sept. 17, 2015.

South Korea Patents Issued

- Patent 10-1820380: Repairing Material for Crack and Damage of Asphalt and Cement Concrete Road, Partially Repairing Method and Asphalt Concrete Overlay Using the Same, Jan 15, 2018.
- Patent 10-1735077: Bridge Deck Using Precast Concrete Panel, May 4, 2017.
- Patent 10-1379384: Repair Method for Concrete Pavement, Mar 24, 2014.
- Patent 10-1341147: Structure of Integrated Pavement on Road-Bridge and the Method, Dec 4, 2013.
- Patent 10-1245828: Construction Method of Continuously Reinforced Concrete Pavements Using Reinforcement Inducing/Fixing Equipment, Mar 14, 2013.
- Patent 10-1121555: Concrete Composite for Repair of Pavement, Feb 22, 2012.
- Patent 10-1111353: Concrete Composite for Early-Strength, Jan 26, 2012.
- Patent 10-1089368: Rapid-Hardening Concrete Composition Capable of Reducing Initial Shrinkage Phenomenon and Hydration Heat, Nov 28, 2011.
- Patent 10-0909212: Concrete Composition for Repair of Pavement, Jul 17, 2009.
- Patent 10-0774448: Latex Modified Concrete Composition Using High Early Strength Cement, Nov 1, 2007.
- Patent 10-0783568: Measurement Apparatus for Autogenous Shrinkage of Concrete, Dec 3, 2007.

PUBLICATIONS

Peer-Reviewed Journal Articles (Corresponding Author)*

- Yun, J. *, Vigneswaran, S., Lee, M.-S., Choi, P., & Lee, S.-J. (2023). Effect of Blending and Curing Conditions on the Storage Stability of Rubberized Asphalt Binders. Materials, 16(3), 978.
- Yun, J. *, Na, I.-H., Choi, P., Ji, B., & Kim, H. (2023). Laboratory Evaluation of High-Temperature Properties of Recycled PMA Binders. Sustainability, 15(17), 12744.
- Lee, H. *, Koirala, N., Choi, P., & Seo, H. (2023). A Case Study on Distresses of Concrete Pavements Supported on a Retaining Wall. Applied Sciences, 13(20), 11226.
- Jeon, S. *, Hossain, M. S., Han, S., Choi, P., & Yun, K.-K. (2022). Self-Healing Characteristics of Cement Concrete containing Expansive Agent. Case Studies in Construction Materials, 17, e01609.
- Rouzmehr, F. *, Choi, P., Nam, J. H., & Won, M. (2021). Improvements of quality assurance testing program for subgrade and base layer construction. Construction and Building Materials, 310, 125157.

- Jeon, S.-I., Choi, P.*, & Won, M. (2021). Punchout evaluations and classification of continuously reinforced concrete pavement to improve pavement design. Road Materials and Pavement Design, 22(7), 1481–1499.
- Choi, P., Poudyal, L., Rouzmehr, F., & Won, M. (2020). Spalling in Continuously Reinforced Concrete Pavement in Texas. Transportation Research Record, 2674(11).
- Choi, P.*, Won, H., Cho, Y.-H., & Won, M. C. (2020). Development of Mechanical Tube Feeding Equipment for Construction of Continuously Reinforced Concrete Pavement (CRCP). International Journal of Pavement Engineering, 21(7), 856–862.
- Yun, K.-K. *, Choi, P., & Yeon, J. H. (2019). Microscopic Investigations on the Air-Void Characteristics of Wet-Mix Shotcrete. Journal of Materials Research and Technology, 8(2), 1674–1683.
- Zhou, W. *, Won, M. C., & Choi, P. (2019). Performance Evaluation of Whitetopping with Improved Design Practices in Texas. Journal of Testing and Evaluation, 47(3), 2127–2149.
- Yun, K.-K., Choi, P., & Yeon, J. H. (2018). Rheological characteristics of wet-mix shotcrete mixtures with crushed aggregates and mineral admixtures. KSCE Journal of Civil Engineering, 22(7), 2469–2479.
- Choi, P., Yun, K.-K., & Yeon, J. H. (2017). Rheological Properties of Wet-Mix Shotcrete Mixtures Made with Crushed Aggregate. ASCE Journal of Materials in Civil Engineering, 29(11), 04017227.
- Choi, P., Yun, K.-K., & Yeon, J. H. (2017). Effects of mineral admixtures and steel fiber on rheology, strength, and chloride ion penetration resistance characteristics of wet-mix shotcrete mixtures containing crushed aggregates. Construction and Building Materials, 142, 376–384.
- Jeon, S. I.*, Yun, K.-K., An, J. H., & Choi, P. (2017). A Study on Crack Self-Healing of Concrete Overlay for Bridge Decks. International Journal of Highway Engineering, 19(1), 11–19.
- Yun, K.-K., Choi, P., & Yeon, J. H. (2016). Predicting Pumpability and Shootability of Crushed Aggregate Wet-Mix Shotcrete Based on Rheological Properties. Advances in Materials Science and Engineering, 2016, 9838213.
- Choi, P.*, Kim, D.-H., Lee, B.-H., & Won, M. C. (2016). Application of ultrasonic shear-wave tomography to identify horizontal crack or delamination in concrete pavement and bridge. Construction and Building Materials, 121, 81–91.
- Chen, D. H.*, Choi, P., Chen, K. Y., & Won, M. (2016). Slot Stitching for Longitudinal Joint Separation Repairs. Construction and Building Materials, 115, 153–162.
- Choi, P., Yeon, J. H., & Yun, K.-K. (2016). Air-void structure, strength, and permeability of wet-mix shotcrete before and after shotcreting operation: the influences of silica fume and air-entraining agent. Cement and Concrete Composites, 70, 69–77.
- Choi, P.*, Kim, D.-H., Lee, B.-H., & Won, M. C. (2016). Evaluation of Structural Responses of Continuously Reinforced Concrete Pavement (CRCP) using Falling Weight Deflectometer. Canadian Journal of Civil Engineering, 43(1), 28–39.
- Yun, K.-K., Choi, P., & Yeon, J. H. (2015). Correlating rheological properties to the pumpability and shootability of wet-mix shotcrete mixtures. Construction and Building Materials, 98, 884–891.
- Choi, P.*, Jeon, S. I., & Yun, K.-K. (2015). Effect of fine fly ash and calcium hydroxide on air void structure in very early strength-latex modified concrete. Canadian Journal of Civil Engineering, 42(10), 797–807.
- Zhou, W., Choi, P.*, Ryu, S. W., & Won, M. C. (2015). Evaluation of Pavement Support for Pavement Design. ASCE Journal of Transportation Engineering, 141(9).
- Choi, P.* (2015). Spalling Related to Coefficient of Thermal Expansion (CoTE) of Continuously Reinforced Concrete Pavement in Texas. KSCE Journal of Civil Engineering, 19(6), 1747–1756.

- Choi, P.* & Yun, K.-K. (2014). Experimental analysis of latex-solid content effect on early-age and autogenous shrinkage of very-early strength latex-modified concrete. Construction and Building Materials, 65, 396–404.
- Yun, K.-K. & Choi, P.* (2014). Cause and Control of Cracking at Bridge Deck Overlay with Very-Early Strength Latex-Modified Concrete. Construction and Building Materials, 56, 53–62.
- Zhou, W., Choi, P.*, Saraf, S., Ryu, S. W., & Won, M. C. (2014). Premature Distresses at Transverse Construction Joints (TCJs) in Continuously Reinforced Concrete Pavements. Construction and Building Materials, 55, 212–219.
- Choi, P.* & Won, M. C. (2014). Construction Issues and Design Procedure for Transverse Steel in Continuously Reinforced Concrete Pavement (CRCP). International Journal of Highway Engineering, 16(4), 01–09.
- Choi, P.*, Ha, S.-J., Chon, B.-J., Kil, Y.-S., & Won, M. C. (2014). Review of transverse steel design in continuously reinforced concrete pavement through finite element analysis. International Journal of Highway Engineering, 16(2), 25–34.
- Ryu, S., Choi, P., Choi, S.*, & Won, M. (2013). Improvements of Full-Depth Repair Practices for Distresses in Continuously Reinforced Concrete Pavement. Transportation Research Record, 2368, 102–113.
- Yun, K.-K., Choi, P.*, Choi, S.-Y., & Kim, K.-H. (2008). Thermal and Autogenous Shrinkages of Very-Early Strength Latex-Modified Concrete. Transportation Research Record, 2020, 30–39.

Referred Conference Proceedings

- Won, M., Choi, P., & Nam, J. (2023). Review of Punchout Mechanism and ME Design of CRCP. Transportation Research Board 102nd Annual Meeting, Washington, D.C.
- Jabonero, C., Lee, H. J., Koirala, N., Choi, P., & Won, M. (2023). Optimum Steel Depths in Continuously Reinforced Concrete Pavement (CRCP). Transportation Research Board 102nd Annual Meeting, Washington, D.C.
- Won, M.-C., Choi, P., Ryu, S., Nam, J., & Jeon, S. (2018). Optimum Repair and Rehabilitation Methodologies of CRCP in Texas. 13th International Symposium on Concrete Roads, Berlin, Germany.
- Choi, P., Won, H., & Won, M. (2018). Evaluations of Concrete Pavement Rehabilitations Focused on Portland Cement Concrete Overlays in Texas. Korean Society of Road Engineers Conference.
- Won, M. & Choi, P. (2017). Factors Influencing CRCP Performance in Texas. 4th Conference on Australian Society for Concrete Pavements, Kingscliff, Australia.
- Choi, P. & Won, M. C. (2016). Performance of Bonded CRCP Overlay in Texas. ISCP's 11th International Conference on Concrete Pavements (11th ICCP), San Antonio, TX.
- Choi, P., Kil, Y., Chon, B. J., & Won, M. C. (2016). Development of Tube Feeding Equipment for Construction of Continuously Reinforced Concrete Pavement. Transportation Research Board 95th Annual Meeting, Washington, D.C.
- Jeon, B.-J., Bae, J.-O., Kil, Y.-S., & Choi, P. (2014). Condition Evaluation of Continuously Reinforced Concrete Pavement with Mechanical Placement Method. Korea Concrete Institute Conference, 699–700.
- Jeon, B.-J., Choi, P., & Kil, Y.-S. (2013). Field Application of Continuously Reinforced Concrete Pavement with Mechanical Placement Method. Korea Concrete Institute Conference, 55–56.
- Chon, B.-J., Choi, P., & Kil, Y.-S. (2012). Distress Types of Continuously Reinforced Concrete Pavement. Korea Concrete Institute Conference, 777–778.

- Yun, K.-K., Choi, P., Kim, J.-W., Han, S.-H., & Ma, S.-J. (2011). Effect of Crushed Sand Gradation on the Rheology of High-Performance Wet-Mix Shotcrete. 6th International Symposium on Sprayed Concrete, Norway, 441–452.
- Kim, D.-H., Bae, J. O., Kang, J. K., Kim, S.-M., Choi, P., & Lee, B. H. (2010). Design and Construction of Highway Tollgate with PTCP Technique. KSCE Conference, 205–208.
- Kim, D.-H., Choi, P., Lee, B. H., Kim, S.-M., Bae, J. O., & Joo, J. L. (2010). Application of Post-Tensioned Concrete Pavement for Tollgate Construction. KSRE Conference, 157–162.
- Choi, P., Jeong, B. S., Kim, H. S., & Yun, K. K. (2009). Early-Age Behavior of Very-Early Strength Latex-Modified Concrete with Latex Content. KSCE Conference, 3103–3106.
- Yun, K.-K. & Choi, P. (2009). Effect of Polymer-Cement Ratio on the Temperature Rise with Heat of Hydration and Autogenous Shrinkages of Very-Early Strength Latex-Modified Concrete. Transportation Research Board 88th Annual Meeting, Washington, D.C.
- Jeong, B.-S., Choi, P., Kim, H.-S., Kim, Y.-G., & Yun, K. K. (2009). Toughness of Steel-Fiber Reinforced VES-LMC. KSRE Conference, 69–72.
- Choi, P., Jeong, B.-S., Yun, K.-K., & Kwan, S.-A. (2009). Air-void Analysis of Deteriorated Jointed Concrete Pavement. Korea Concrete Institute Conference, 253–254.
- Choi, P., Lee, B.-H., Jeong, B.-S., & Kim, D.-H. (2009). Application of High Durable Concrete in Post-Tensioned Concrete Pavement. Korea Concrete Institute Conference, 435–436.
- Yun, K.-K., Jeong, W.-K., Kim, S.-H., & Choi, P. (2005). Field Application Example of Very-Early Strength Latex-Modified Concrete in Korea. 5th ICPT Korea Society of Road Engineering, 814–820.

PRESENTATIONS & INVITED TALKS

- Choi, P. (2026). Texas Concrete Pavement, 2026 Lubbock Concrete Pavement Workshop, Lubbock, TX.
- Flores, R. T., & Choi, P. (2026). CRCP Basics, 2nd Annual ACI San Antonio Concrete Symposium, San Antonio, TX.
- Choi, P., & Carrasco, R. (2026). A Performance Based Update from PMIS and FWD, 2026 Concrete Conference, Austin, TX.
- Rodriguez, R., & Choi, P. (2026). Whitetopping Project on FM 1405 – Beaumont District, 2026 Concrete Conference, Austin, TX.
- Choi, P. (2026). TxDOT Rigid Pavement Design and Policy, 2026 Concrete Conference, Austin, TX.
- Choi, P. (2025). Long-Life Concrete Pavement in Texas, El Paso, TX.
- Choi, P. (2025). Rigid Pavement Workshop (4-hr Seminar), Fort Worth, TX.
- Choi, P. (2025). An Update from TxDOT: Concrete Pavement Performance, San Antonio, TX.
- Choi, P. (2024). CRCP Service Life Analysis in Texas, 13th ICCP & National Concrete Consortium (NCC), Minneapolis, MN.
- Choi, P. (2024). Reevaluation of CRCP Design Life in Texas, Concrete Conference, Austin, TX.
- Choi, P. (2024). TxDOT's Rigid Pavement Policy & Design Procedure, Concrete Conference, Austin, TX.
- Choi, P., & Carrasco, R. (2022). Case Studies of Bridge Approach Slab (BAS) Evaluations & Recommendations, TxDOT MNT-TRF Conference, Galveston, TX.
- Choi, P. (2022). Evaluating Settlement and Voids Below Bridge Approach Slabs, TxDOT Bridge Workshop, Austin, TX.
- Choi, P. (2021). Pavement Design – EIT Training, TxDOT/CCT Conference, Round Rock, TX.

- Flores, R. T., & Choi, P. (2021). Concrete Pavement Foundation Consideration, TxDOT/CCT Conference, Round Rock, TX.
- Flores, R. T., & Choi, P. (2020). CRCP Evaluation and Forensic Studies, ACI Central Texas Chapter, Austin, TX.

TEACHING & ACADEMIC INSTRUCTION

- **Texas Tech University** — Assistant Professor: CE3321-002 Introduction to Geotechnical Engineering (Fall 2026)
- **Texas State University** — Lecturer: CSM 5384A Construction Failure (Spring/Summer 2026, Spring/Summer/Fall 2025)
- **Gangwon Provincial College (South Korea)** — Adjunct Professor: Applied Mechanics I & II, Materials and Lab for Civil Engineering, Prestressed Concrete Design, Reinforced Concrete, Structural Mechanics (2005–2006, 2008–2010)
- **Kangwon National University (South Korea)** — Lecturer: Materials and Lab for Civil Engineering, Reinforced Concrete, Design of Prestressed Concrete Structure (2005–2006, 2008–2010)
- **Korea National University of Transportation (South Korea)** — Lecturer: Prestressed Concrete, Reinforced Concrete for Civil Engineering (2008)

ACADEMIC ADVISING & MENTORING

Dissertation Committee Member

- **Kyeo Re Lee**, Ph.D., "Air Void Structures of Remixed High-Performance Cellular Concrete", Kangwon National University (2019)

Ph.D. Student Mentoring

- **Wujun Zhou**, Ph.D., "Effect of pavement support condition on CRCP behavior and performance", Texas Tech University (2013)
- **Sureel Saraf**, Ph.D., "Premature distress mitigation in continuously reinforced concrete pavements", Texas Tech University (2013)

HONORS & AWARDS

- **Outstanding Research Award** — Korea Society of Civil Engineering (KSCE), South Korea (Jan 2010)
- **Outstanding Achievement Award for Research Paper Publications** — Kangwon National University, South Korea (Sep 2009)
- **Quiz Korea Scholarship ($7,000)** — Korean Broadcasting System (KBS), South Korea (Feb 2007)

PROFESSIONAL SERVICE & AFFILIATIONS

- **Committee Member** — AGC of Texas Concrete Paving Committee
- **State Representative (Texas)** — National Concrete Consortium (NC2)
- **Peer Reviewer for Academic Journals**
  - Transportation Research Record: Journal of the Transportation Research Board (TRB)
  - ASCE Journal of Performance of Constructed Facilities
  - Construction and Building Materials

- International Journal of Pavement Engineering
- Applied Sciences (MDPI), Infrastructures (MDPI)
- International Journal of Pavement Research and Technology
- KSCE Journal of Civil Engineering
- International Journal of Concrete Structures and Materials
- Innovative Infrastructure Solutions