

## Sunghwan Kim, PhD, PE

Associate Director, [Program for Sustainable Pavement Engineering & Research \(PROSPER\)](#)

Adjunct Assistant Professor, [Civil, Construction and Environmental Engineering \(CCEE\)](#)

Iowa State University

813 Bissell Road, 24 Town Engineering Bldg.

Ames, IA 50011-1066

(515) 294-4698

[sunghwan@iastate.edu](mailto:sunghwan@iastate.edu)

**IOWA STATE UNIVERSITY**  
Civil, Construction, and Environmental Engineering

**IOWA STATE UNIVERSITY**  
**Institute for Transportation**

### EDUCATION

- PhD, Civil Engineering, Iowa State University, 2006
- MS, Civil Engineering, Iowa State University, 2004
- BS, Civil Engineering, Korea University, Seoul, South Korea, 1998

### PROFESSIONAL EXPERIENCE

- Assistant Research Scientist IV, Institute for Transportation, Iowa State University, 2017–present
- Assistant Research Scientist II, Institute for Transportation, Iowa State University, 2015–2017
- Associate Director, Program for Sustainable Pavement Engineering and Research (PROSPER), Institute for Transportation, Iowa State University, 2013–present
- Research Assistant Professor, Department of Civil, Construction, and Environmental Engineering, Iowa State University, 2007–2015
- Civil/Material Engineer, Hyundai Development Company Engineering & Construction, Seoul, South Korea, 1998–2002

### SELECTED RESEARCH PROJECTS

- Development of a Smartphone-Based Road Performance Data Collection Tool, IHRB
- Development of Pavement Structural Analysis Tool (PSAT) for Iowa Local Roads, IHRB
- Investigation on Pavement ME Design Reflective Cracking, Faulting, IRI Prediction Models, Concrete Overlays Design Tool, and Performance Threshold Levels for Iowa Pavement Systems, Iowa DOT
- Development of Iowa Pavement Analysis Technique (IPAT), IHRB
- Self-Heating Electrically Conductive Concrete Demonstration Project, Iowa DOT/IHRB
- Concrete Grinding Residue: Its Effect on Roadside Vegetation and Soil Properties, Minnesota DOT
- Investigation into the Feasibility of Using Electrically Conductive Asphalt Cement Concrete for Heated Airport Pavements, FAA Center of Excellence (COE)
- Evaluation of Otta Seal Surfacing for Low-volume Roads in Iowa–Phase I and Phase II, IHRB
- Impact of Curling and Warping on Concrete Pavement–Phase I and Phase II, Iowa DOT/IHRB
- Evaluating Roadway Subsurface Drainage Practices–Phase I and Phase II, IHRB

## SELECTED PUBLICATIONS

Authored/co-authored more than 150 technical publications and more than 60 technical presentations in pavement engineering areas.

- Yang, S., Ceylan, H., Gopalakrishnan, K., **Kim, S.**, Taylor, P. C., and Alhasan, A. (2017). Characterization of Environmental Loads Related Concrete Pavement Deflection Behavior Using Light Detection and Ranging Technology. *International Journal of Pavement Research and Technology*, Vol. 11, Issue 5, pp. 470-480.
- Rezaei-Tarahomi, A., Kaya, O., Ceylan, H., **Kim, S.**, Gopalakrishnan, K., and Brill, D. R. (2017). "Development of Rapid Three-dimensional Finite-Element Based Rigid Airfield Pavement Foundation Response and Moduli Prediction Models," *Transportation Geotechnics*, Vol.13, pp. 81-91.
- Abdualla, H., Ceylan, H., **Kim, S.**, Gopalakrishnan, K., Taylor, P. C., and Turkan, Y. (2016). System Requirements for Electrically Conductive Concrete Heated Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2569, pp. 70–79.
- **Kim, S.**, Ceylan, H., Ma, D., and Gopalakrishnan, K. (2014). Calibration of Pavement ME Design and Mechanistic-Empirical Pavement Design Guide Performance Prediction Models for Iowa Pavement Systems. *Journal of Transportation Engineering*, Vol. 140, No. 10, 04014052.
- **Kim, S.**, Ceylan, H., and Gopalakrishnan, K. (2014). Finite Element Modelling of Environmental Effects on Rigid Pavement Deformation. *Frontiers of Structural and Civil Engineering Journal*, Volume 8, Issue 2, pp. 101–114.
- **Kim, S.**, Gopalakrishnan, K., Ceylan, H., and Steffes, R. F. (2014). Performance Evaluation of Roadway Subdrain Outlets in Iowa. *Transportation Research Record: Journal of the Transportation Research Board*, Volume 2462, pp. 68–76.
- **Kim, S.**, Gopalakrishnan, K., and Ceylan, H. (2011). A Simplified Approach for Predicting Early-Age Concrete Pavement Deformation. *Journal of Civil Engineering and Management*, Vol. 17, No. 1, pp. 27–35.
- **Kim, S.**, Gopalakrishnan, K., and Ceylan, H. (2011). Structural Characterization of Iowa's Rubblized PCC Pavements. *Journal of Transportation Engineering*, Vol. 138, No. 4, pp. 406–413.
- **Kim, S.**, Gopalakrishnan, K., and Ceylan, H. (2011). Unbound Material Characterization with Nottingham Asphalt Tester (NAT). *Proceedings of the ICE - Construction Materials*, Vol. 165, Issue 6, pp. 355–365.
- **Kim, S.**, Gopalakrishnan, K., Ceylan, H., and Wang, K. (2010). Early-Age Response of Concrete Pavements to Temperature and Moisture Variations. *The Baltic Journal of Road and Bridge Engineering*, Vol. 5, No. 3, pp. 132–138.

## PROFESSIONAL AFFILIATIONS, HONORS, AND SERVICE

- Participated in developing new pavement structure assessment program using FWD deflection data for Iowa DOT

## **AWARDS, RECOGNITIONS**

- Professional and Scientific Outstanding New Professional Award, Iowa State University, Ames, Iowa, 2016.
- Research Excellence Award, Iowa State University, Ames, Iowa, 2006.