Sung Tae Kim

Research Fellow, Ph.D.

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Education

2016-2022	Ph.D. Dept. of Civil Engineering, Inha University Graduate School, Korea(Structural Engineering) (Supervisor: Prof. Soo Bong Shin) (Ph.D. Thesis : Performance Evaluation of PS Strand with Built-in Optical Fiber Sensors and Smart Monitoring of Prestressing Force for PSC Structures)
1999-2001	M.S., Dept. of Civil Engineering, KookMin University, Korea (Structural Engineering) (Supervisor: Prof. Sung Woo Lee) (M.S. Thesis : Bending and Compression Characteristics of Concrete-Filled Fiber Glass Composite Tube by Experiment)
1992-1998	B.S., Dept. of Civil Engineering, KookMin University, Korea

Employment

2022-Present	Research Fellow, Structural Eng. Div., KICT, Korea
2011-2022	Senior Researcher, Structural Eng. Div., KICT, Korea
2001-2011	Researcher, Structural Eng. Div., KICT, Korea

Major Projects

2021-present	Development of Smart Maintenance Monitoring Techniques to Prepare for Disaster and Deterioration of Port Infra Structures, KIOST, Korea
2021-present	Development of Construction Materials that Having High Performance Based on Carbon(Focused on Building Insulation Materials and

	Corrosion Free Bridge Cable), KICT, Korea
2018-2022	Smart Monitoring System for Concrete Structures Using FRP Nerve Sensor, KICT, Korea
2018-2019	BH Girders for Southeast Asia, KICT, Korea
2017-2017	A Performance Evaluation on the Segmental BH Girder System, KICT, Korea
2013-2017	Development of Smart Prestressing System and Grouting Technology for Prestressed Concrete Bridges, KICT, Korea
2013-2017	Design Technology for High Performance Concrete (SUPER Structure 2020), KAIA, Korea
2007-2012	Development of Economic and Durable Hybrid Cable Stayed Bridge System(SUPER Bridge 200), KICT, Korea
2006-2010	Development of Hybrid Bridge System Appling FRP and FRC, KAIA, Korea
2004-2006	Development of Steel-Free Deck Systems for Bridges, KICT, Korea
2001-2004	Establishment of Advanced Design for Material Quantity Reduction and Quality Improvement of PSC Box Girder Bridges, KAIA, Korea

Major Publication (in recent 5 years)

- Effect of various factors related to the bond-type anchorage system on tensile performance of carbon fiber-reinforced polymer strand cables (Elsevier-INTERNATIONAL JOURNAL OF ADHESION AND ADHESIVES, 2023.10.01)
- Evaluation of transfer length of CFRP tendon in pretensioned concrete beam using embedded FBG sensors(Elsevier-Structures, 2023.09.06)
- Temperature Compensation of Fiber Bragg Grating Sensors in Smart Strand(MDPI-SENSORS, 2022.04.25)
- Analysis of Short-Term Prestress Losses in Post-tensioned Structures Using Smart Strands(SPRINGER- INTERNATIONAL JOURNAL OF CONCRETE STRUCTURES AND MATERIALS, 2022.01.05)
- Analysis of Long-Term Prestress Loss in Prestressed Concrete (PC) Structures Using Fiber Bragg Grating (FBG) Sensor-Embedded PC Strands(MDPI-APPLIED SCIENCES, 2021.12.20)
- Combining point and distributed strain sensor for complementary data-fusion: A multi-fidelity approach(ELSEVIER-MECHANICAL SYSTEMS AND SIGNAL PROCESSING, 2021.08.01)
- Smart Sensing of PSC Girders Using a PC Strand with a Built-in Optical Fiber Sensor(MDPI-APPLIED SCIENCES, 2021.01.01)
- Dynamic Performance of a New-Type PSC I-girder for Railway Bridge

Application(MDPI-APPLIED SCIENCES, 2022.12.05)

- Model updating based on mixed-integer nonlinear programming under model-form uncertainty in finite element model(SPRINGER- ENGINEERING WITH COMPUTERS, 2022.04.23)
- Measurement of Mechanical and Thermal Strains by Optical FBG Sensors Embedded in CFRP Rod(HINDAWI-JOURNAL OF SENSORS, 2019.10.08)

Research interests

- Maintenance of Bridge structures : Monitoring, Repair, Reinforcement, Rehabilitation
- Sensing for Structures : Measurement, Sensing, Optical Fiber Sensor
- FRP composite : GFRP reinforcing bars, Headed bar, Concrete Bridge Deck, Bonding
- UHPC : Steel fiber, Strength, Design Standard, Bridges
- PSC Structures : Strand, Prestress, Smart Strand, CFRP Strand
- Emergency Rehabilitation : Steel, Concrete, UHPC, Rapid Construction, Lightweight Concrete