BEI-NCKU-NCREE International Workshop on Structural and Infrastructure Engineering

Venue: National Cheng Kung University Department of Civil Engineering
Zhaoqun Building (卓群大樓), 1st Floor,
Huai-en Lecture Hall (懷恩講堂)
Date : February 27, 2024 (Tuesday)

Time	Topic	Speaker	Moderator
9:00-9:10	Opening Remarks and Group Photos	**Prof. Chyan-Deng Jan** **Dean, College of Engineering**	**Prof. Chung-Chan Hung** Director, Research Center for Earthquake Engineering and Vibration Control National Cheng Kung University
9:10-9:35	Composite-Based Rehabilitation for Deteriorated Highway Bridges: from Modeling to World-First Field Application	**Prof. Yail Jimmy Kim** University of Colorado Denver	**Prof. Chung-Chan Hung** Director, Research Center for Earthquake Engineering and Vibration Control National Cheng Kung University
9:35-10:00	Acquisition of Kinematic Behavior of Masonry Walls Subject to Out-of-Plane Loading based on Photogrammetry and Optical Fiber Sensors	**Prof. Terry YP Yuan** National Yang Ming Chiao Tung University	**Prof. Isamu Yoshitake** Yamaguchi University, Japan
10:00-10:25	Multifunctional Materials and Distributed Sensing Techniques for Structural Health Monitoring	**Prof. Kenneth Loh** UC San Diego	**Prof. Yail Jimmy Kim** University of Colorado Denver
10:25-10:45	Tea Break		
10:45-11:10	Assessment of the Seismic Critical Member of Wall Pier Bents under Riverbed Scouring and Evaluation of the Foundation Strengthening	**Prof. Shin-Tai, Song** National Chung-Hsing University	**Prof. Terry YP Yuan** National Yang Ming Chiao Tung University
11:10-11:35	NSM-CFCC strengthening for tunnel lining concrete	**Prof. Isamu Yoshitake** Yamaguchi University, Japan	**Prof. Fu-Pei Hsiao** Division Director, NCREE National Cheng Kung University
11:35-12:00	Application of OpenFresco in MDOF hybrid testing for reinforced concrete structures	**Prof. Fu-Pei Hsiao** Division Director, NCREE National Cheng Kung University	**Prof. Shin-Tai Song** National Chung-Hsing University

Organizers:

- Department of Civil Engineering, National Cheng Kung University
- Research Center for Earthquake Engineering and Vibration Control, College of Engineering, National Cheng Kung University

Co-organizers:

- National Center for Research on Earthquake Engineering
- Bridge Engineering Institute

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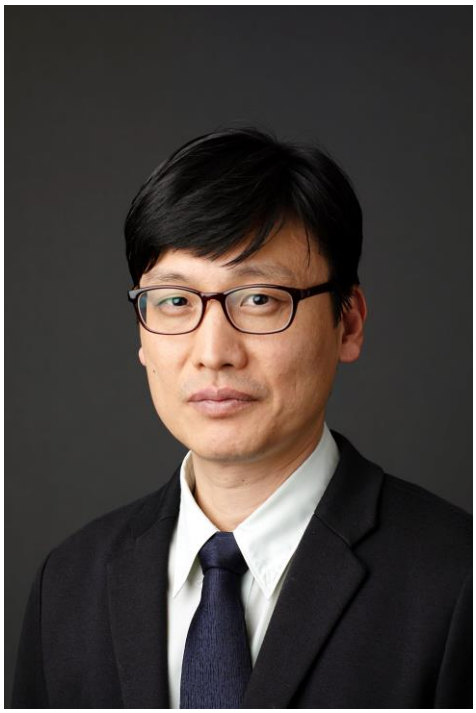
NCREE

BEI An International Technical Society



Prof. Yail Jimmy Kim

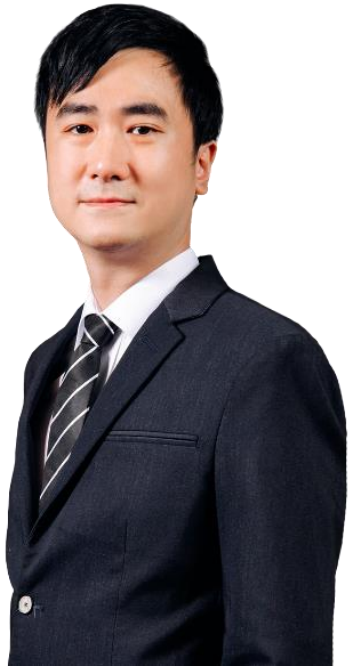
Department of Civil Engineering, University of Colorado Denver, CO, USA

President, Bridge Engineering Institute, An International Technical Society

Speech Title :

Composite-Based Rehabilitation for Deteriorated Highway Bridges: from Modeling to World-First Field Application

Dr. Yail Jimmy Kim is President of the Bridge Engineering Institute, An International Technical Society, and a Professor in the Department of Civil Engineering at the University of Colorado Denver, Colorado, USA. He has been involved in civil and structural engineering for more than three decades. He is past Chair of the American Concrete Institute (ACI) Committee 345, Concrete Bridge Construction and Preservation, from 2012 to 2018 and Subcommittee 440-I, FRP-Prestressed Concrete, from 2013 to 2023. Dr. Kim is an active member of numerous technical committees and scientific/organizing committees of renowned international conferences, as well as an elected council member of the International Institute for FRP Composites in Construction (IIFC). He is the recipient of a number of awards from institutional, national, and international competitions, including the Centennial Research Award at North Dakota State University (two times), Intelligent Sensing for Innovative Structures Award of Merit, the Award of Excellence by the Ontario Ministry of Public Infrastructure Renewal, Fellow of the Japan Society for the Promotion of Science, the Excellence in Research and Creative Activities Award by the University of Colorado Denver (highest recognition at the campus level, awarded to one faculty per year), and the prestigious Chester Paul Siess Award for Excellence in Structural Research (the highest research award in structural concrete bestowed by the American Concrete Institute). His research interests encompass advanced composite materials for rehabilitation, structural informatics, complex systems, and science-based structural engineering, including statistical, interfacial, and quantum physics. He is the author of ten books and 192 journal papers, most of which have been published in top-tier journals such as those of ACI, the American Society of Civil Engineers (ASCE), and Elsevier. He serves as an Associate Editor and member of editorial boards of international journals. He is the sole author of *AASHTO Guide Specifications for Bridges Carrying Light Rail Transit Lods*. Dr. Kim is a Fellow of the American Concrete Institute.



Prof. Terry YP Yuen

Department of Civil Engineering,
National Yang Ming Chiao Tung University

Speech Title :

Acquisition of Kinematic Behavior of Masonry Walls Subject to Out-of-Plane Loading based on Photogrammetry and Optical Fiber Sensors

Dr. Yuen is an Associate Professor of Structural Engineering at the National Yang Ming Chiao Tung University (NYCU), a Chartered Structural Engineer of the UK (CEng, MIStructE), and a panelist of the Seismic and Dynamic Events Panel of the IStructE (UK). His research covers various topics in numerical simulations of structural and solid behavior, eco-efficient construction materials, earthquake engineering, smart optical fiber sensors, and nonlinear solid and structural mechanics. He has been the principal investigator or co-investigator of several international and national research projects funded by the Ministry of Science and Technology (R.O.C)'s prestigious Einstein Program, the Engineering and Physical Sciences Research Council (EPSRC, UK), the Scientific and Technological Research Council of Turkey (TÜBİTAK), and the Research Grants Council of Hong Kong.

Dr. Yuen's research achievements have earned him several academic awards, including the Outstanding Young Structural Engineering Professor Award presented by the Chinese Society of Structural Engineering (2021), MOST Young Scholar Fellowship 2018, Actively Seeking Excellent Young Scholars Overseas Scholarship Award by FAOS 2018, HKIE-IStructE Structural Excellence R&D Grand Award 2017, the HKIE Best Transactions Prize 2016, and the Institution of Civil Engineers (UK)'s Telford Premium 2014.

Prof. Kenneth Loh

Department of Structural Engineering
UC San Diego

Speech Title :

Multifunctional Materials and Distributed Sensing Techniques for Structural Health Monitoring

Dr. Ken Loh is the TaylorMade Golf Chancellor's Endowed Professor in the Department of Structural Engineering at UC San Diego and previously served as the Department Vice Chair (2018-2021). He is the Director of the Active, Responsive, Multifunctional, and Ordered-materials Research (ARMOR) Lab and is the Director of the Jacobs School of Engineering, Center for Extreme Events Research (CEER). He is also an affiliate faculty member of the Materials Science & Engineering Program. Dr. Loh received his B.S. in Civil Engineering from Johns Hopkins University in 2004. His graduate studies were at the University of Michigan, where he completed two M.S. degrees in Structural Engineering (2005) and Materials Science & Engineering (2008), as well as a Ph.D. in Structural Engineering in 2008. He started his Assistant Professor career in January 2009 in the Department of Civil & Environmental Engineering at UC Davis, before joining UC San Diego in January 2016. His research interests are in multifunctional and stimuli-responsive materials, tomographic imaging techniques, wearable sensors, active metamaterials, and soft material actuators applied towards solving problems related to human performance, structural sustainment, and human-structure interactions. In addition to his academic career, Dr. Loh is an Engineering Duty Officer in the U.S. Navy Reserve and a co-founder of a start-up company, JAK Labs, Inc.

Prof. Shin-Tai Song

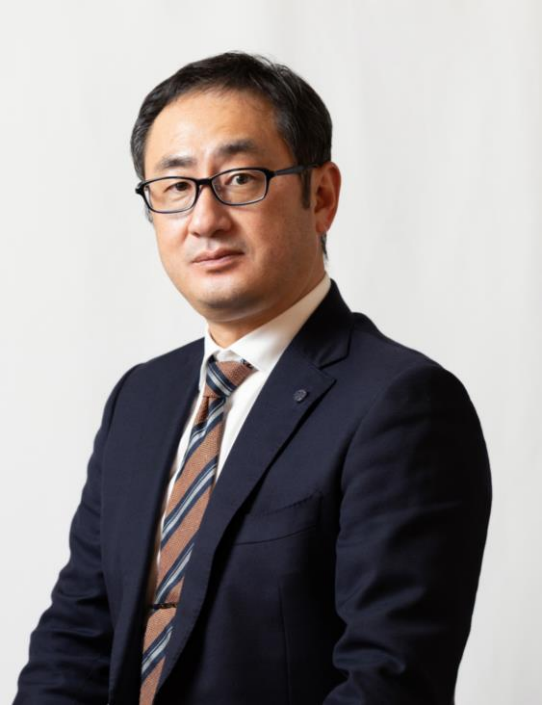
Department of Structural Engineering
National Chung-Hsing University

Speech Title:

Assessment of the Seismic Critical Member of Wall Pier Bents under Riverbed Scouring and Evaluation of the Foundation Strengthening

Dr. Shin-Tai Song is an Associate Professor of Structural Engineering at National Chung-Hsing University in Taiwan. He received his B.S. in Civil Engineering from National Chiao-Tung University, followed by his M.S. and Ph.D. in Structural Engineering from the University of California, Davis. Dr. Song's research focuses on the performance-based design and assessment of reinforced concrete bridges and prestressed concrete bridges.

Dr. Song is an active member of professional organizations, including Bridge Engineering Institute, Earthquake Engineering Research Institute, the Chinese Society of Structural Engineering. He currently serves as the chair of the Scientific Committee at Taiwan Post-Tensioning Institute. Dr. Song has received recognition for his contributions to teaching and research. He was honored with the Distinguished Teaching Award from National Ching-Hsing University in 2012, 2014, and 2021. Additionally, his research work was acknowledged with the Best Paper Award at the 2019 Bridge Engineering Institute Conference.



Prof. Isamu Yoshitake

Department of Civil and Environmental Engineering, Yamaguchi University

Speech Title:

NSM-CFCC strengthening for tunnel lining concrete

Dr. Yoshitake is a Professor of the Department of Civil and Environmental Engineering and is the Chief-director of Education and Research Center for Infrastructure Management of Yamaguchi University, Yamaguchi, Japan. He received his B.Eng. (1996), M.Eng. (1998), and D.Eng. (2000) degrees from Yamaguchi University. His research interests include durability of concrete, reinforced & prestressed concrete structures, and advanced strengthening materials such as FRP. He is a member of American Concrete Institute (ACI), International Institute for FRP in Construction (IIFC), Japan Concrete Institute (JCI), Japan Society of Civil Engineers (JSCE), and Japan Society of Material Science (JSMS). Prof. Yoshitake has been the vice-president of Bridge Engineering Institute (BEI) since 2018, and a council member of IIFC since 2018. In addition, prof. Yoshitake is the vice-president of Clinical Institute for Tunnels & Tunneling (CITT) in Japan.

Prof. Fu-Pei, Hsiao

Division Director/Research Fellow, Tainan Experimental Technology Division/Building Engineering Division, National Center for Research on Earthquake Engineering, Taiwan

Professor (Joint Appointment), Department of Civil Engineering, National Cheng Kung University

Speech Title:

Application of OpenFresco in MDOF hybrid testing for reinforced concrete structures

Dr. Hsiao is a division director in the Tainan Experimental Technology Division at the National Center for Research on Earthquake Engineering. He is also a Professor (Joint Appointment) in the department of Civil Engineering of the National Cheng Kung University. He received his B.Sc. (1998) from National Cheng Kung University, Tainan, Taiwan, and his Ph.D. also from National Cheng Kung University, Tainan, Taiwan, in 2003. His research focuses on seismic assessment, seismic retrofitting, large-scale structure testing, and hybrid testing. He has been a member of the Concrete Engineering Council at the Chinese Institute of Civil and Hydraulic Engineering for a long time. He services himself into the formulation of engineering specifications for concrete structures in Taiwan.