

SYMPOSIUM OVERVIEW

November 13, Wednesday				
16:00-17:30	Registration			(Tamna Hall Foyer)
18:00-19:30	Welcoming Reception			(Tamna Hall)
November 14, Thursday				
08:00-	Registration			(Tamna Hall Foyer)
08:30-09:00	Opening Ceremony			(Tamna Hall)
09:00-09:30	Keynote Lecture1: Chia-Ming Uang			
09:30-10:00	Keynote Lecture2: Luigi Di Sarno			
10:00-10:30	Keynote Lecture3: Woo-jong Kim			
10:30-11:00	Special Session1: Gang Shi			
11:00-11:20	Coffee Break			(Tamna Hall Foyer)
	Tamna Hall	Halla Hall	Ara Hall	Ora Hall
11:20-12:50	Session 1 Advances in Analysis and Design of Steel Structures for Fire Safety	Session 2 Monitoring Method of Building Structures using ICT, IoT and 3D technology	Session 3 Recent Research and Developments in Bolted and Welded Shear Connections	Session 4 Advanced Technology in Bridge
12:50-13:50	Lunch			
13:50-15:50	Session 5 Connections	Session 6 Advances in Steel & Composite Structures	Session 7 Elasto-Plastic Behavior and Deformation Capacity of Steel Materials and Members	Session 8 Advances in Construction and Maintenance of Steel Bridges
15:50-16:10	Coffee Break			(Tamna Hall Foyer)
16:10-18:10	Session 9 Dynamics	Session 10 Advances in Hybrid Structures	Session 11 Vibrations	Session 12 Advances in Construction and Maintenance of Steel Bridges
18:30	Banquet			(Tamna Hall)
November 15, Friday				
08:30	Registration			(Tamna Hall Foyer)
09:00-09:30	Keynote Lecture 4: Venkatesh Kodur			(Tamna Hall)
09:30-10:00	Keynote Lecture 5: Tsuyoshi Tanaka			
10:00-10:30	Keynote Lecture 6: Qilin Zhang			
10:30-11:00	Special Session 2: Yonkyun Song			
11:00-11:20	Coffee Break			(Tamna Hall Foyer)
	Tamna Hall	Halla Hall	Ara Hall	Ora Hall
11:20-12:50	Session 13 Smart Structures	Session 14 Rehabilitation and Vibration Control of Open Deck Bridges in Railway Engineering	Session 15 Fire-Resistant Structures	Session 16 Stainless Steel
12:50-13:50	Lunch			
13:50-15:50	Session 17 Light Gauge Structures	Session 18 Composite Structures	Session 19 Stability	Session 20 Connections
15:50-16:10	Coffee Break			(Tamna Hall Foyer)
16:10-18:10	Session 21 Fatigue	Session 22 Advanced Steel Applications	Session 23 Steel Bridge Rehabilitation	Session 24 Damage Assessment
November 16, Saturday				
Post-Symposium Tour				

Poster(Tamna Hall Foyer)

November 14, Thursday

08:00	Registration			
08:30-09:00	Opening Ceremony			
09:00-09:30	Keynote Lecture1	Historical Perspective on Seismic Steel Research and Design in the United States <i>Chia-Ming Uang (University of California, USA)</i>		
09:30-10:00	Keynote Lecture2	Seismic Vulnerability Assessment of Steel Petrochemical Steel Pipe-racks: Current Practice and Research Needs <i>Luigi Di Sarno (University of Sannio, Italy / University of Liverpool, UK)</i>		
10:00-10:30	Keynote Lecture3	Steel Bridge Design in Harmony with Concrete in Recent Korea <i>Woo-jong Kim (DM Engineering Co., Ltd, Korea)</i>		
10:30-11:00	Special Session1	Recent Research Advances and Design Code of High Strength Steel Structures in China <i>Gang Shi (Tsinghua University, China)</i>		
11:00-11:20	Coffee Break			
Time	Session 1(Tamna Hall)	Session 2(Halla Hall)	Session 3(Ara Hall)	Session 4(Ora Hall)
11:20 - 12:50	Advances in Analysis and Design of Steel Structures for Fire Safety Chairs:	Monitoring Method of Building Structures using ICT, IoT and 3D technology Chairs:	Recent Research and Developments in Bolted and Welded Shear Connections Chairs:	Advanced Technology in Bridge Chairs:
11:20-11:35	Severity Measures in Probabilistic Structural Fire Design <i>Hyunseok Park, Anthony Abu, Peter Moss</i>	Data Analysis to Detect Continuous Deformations of Architecture Using Machine Learning <i>Yoichiro Hashizume, Sakuya Kishi, Takashi Nakajima, Soichiro Okamura, Kenjiro Mori, Takumi Ito</i>	Net Section Capacity of High Strength Steel Bolted Connections with or without Staggered Bolts <i>Xue-Mei Lin, Michael C.H. Yam, Kwok-Fai Chung, Angus C.C. Lam</i>	Nominal Flexural Resistance Considering Ductility Ratio of Compact Composite I-Girder Sections Using HSB460 Steel Under Negative Bending <i>Ji-Hoon Lim, Dong-Ho Choi</i>
11:35-11:50	Equivalent Fire Severity in Deep Steel Beams <i>Jonathon MacIntyre, Anthony Abu, Peter Moss, Daniel Nilsson</i>	Study on Damaged Position Detection in Buildings Using Unsupervised Learning <i>Takayuki Kishimoto, Takashi Nakajima, Yoichiro Hashizume, Takumi Ito, Soichiro Okamura</i>	Bearing Strength of Multi-Bolt Lap Connection in High Strength Steel Considering Bolt Hole Misalignment <i>Yi-Fan Lyu,Yan-Bo Wang, Guo-Qiang Li</i>	Numerical Parametric Analysis of An Integral Bridge with Lateral Stiffness By Strut and Abutment Backfill <i>Jae-Young Kwak, Je-Hyuk Ann, Byung H. Choi</i>
11:50-12:05	Damage Evaluation of Composite Beams Under Fire Conditions <i>Moon Soo Kang, Jun Won Kang, Seong-Hoon Kee, Byong-Jeong Choi</i>	3D Monitoring and Damage Detection Method for Damaged Steel Frames After Seismic Disasters <i>Yasuhiro Beppu, Kenjiro Mori, Ayumu Ushigome, Takumi Ito</i>	Block Shear Strength of Lean Duplex Stainless Steel (STS329FLD) Double-Shear Bolted Connections <i>BoKyung Hwang, SeongKyu Hong, JeongYeon Kim, TaeSoo Kim</i>	A Study on The Buckling Coefficient Double Axisymmetric Box Girder Considering Effec ToF Flange and Web Slenderness Ratio <i>Nam-Joo Byun, Jeong-Hwa Lee, Young-Jong Kang</i>
12:05-12:20	Thermal Insulation Performance of PCM Infilled Hybrid Floor System Based on Small-Scale Heating Tests <i>Min Jae Park, Young K. Ju</i>	A Fundamental Study on Heat Generation Characteristic of Steel Member During Inelastic Behavior and Thermoelectric Conversion <i>Eriko Iwasaki, Takumi Ito, Kenjiro Mori, Takahiro Yamamoto, Takashi Nakajima, Masahiro Motosuke, Yoichiro Hashizume</i>	Bearing Capacity of Ultra High Strength Steel Bolted Connections After Fire <i>YongHyun Cho, Lip H. Teh, Ben Young</i>	Effectiveness of Laser-Arc Hybrid Welding in Fabrication of Steel Bridge Members <i>Kuya Morioka, Mikihito Hirohata, Naoyuki Matsumoto, Koutarou Inose</i>
12:20-12:35	A Study on The Collapse Behavior of PEB Building Through Fire Experiment <i>So-Yeong Kim, Kyung-Jae Shin, Hee-Du Lee, Jong-Hun Woo, Su-Woong Lee</i>	Development of Iot Monitoring System for Damage Detection of Building Structures and Feasibility Study on A Single-Story House <i>Natsuhiko Sakiyama, Takuji Yamamoto, Yoichiro Hashizume, Takashi Nakajima, Takumi Ito</i>	Advanced Finite Element Modelling on Welded Stud Shear Connections in Composite Slabs with Profiled Steel Decking Having Various Geometrical Configurations <i>Min-Hui Shen, Kwok-Fai Chung, Jing-Zhong Tong</i>	Paint Coating Removal Technique for Bolted Joints By Portable Heating Device <i>Mikihito Hirohata, Daiki Toyoshima, Hideyuki Konishi</i>
12:35-12:50	An Experimental Study on The Fire Resistance of Wall-Slab Connection At High Temperature <i>Su-Hyeon Lee, Byong-Jeong Choi, Cheol-Kyu Kang, Jun-Won Kang, Seong-Hoon Kee</i>	Nonlinearity Detection Method of Shaking Table Test with Steel Frame Using Second Time Derivative of Absolute Acceleration <i>Masaki Wakui, Kazuki Buto, Jun Iyama, Eiichi Sato</i>	Simulation of Bearing Strength of Untightened Cold-Formed Steel Bolted Connections <i>Aziz Ahmed, Lip H. Teh, Refat A. Bhuiyan</i>	Compressive Loading Test of Corroded Girder End in Steel Riveted Highway Bridge <i>Kanto Ishikawa, Jun Murakoshi, Kuniei Nogami, Yusuke Kishi, Shoichi Komine, Naofumi Hosomi</i>
12:50-13:50	Lunch			

TECHNICAL PROGRAM

November 14, Thursday

Time	Session 5(Tamna Hall)	Session 6(Halla Hall)	Session 7(Ara Hall)	Session 8(Ora Hall)
13:50 - 15:50	Connections Chairs:	Advances in Steel & Composite Structures Chairs:	Elasto-Plastic Behavior and Deformation Capacity of Steel Materials and Members Chairs:	Advances in Construction and Maintenance of Steel Bridges Chairs:
13:50 - 14:05	Experimental Study of CFT Moment Connections Through Vertical Diaphragm <i>Kyungtae Kim, Young-Gi Kim, Taejin Kim, Jong-Ho Kim</i>	Experimental Study on Load Capacity of High Strength Concrete Encased Columns with Large Slenderness Under Static Force <i>Honghui Qi, Yong Du, J.Y. Richard Liew</i>	Experimental Study of Exposed-Type Column Bases with Double Yield Mechanism <i>Feng-Zhi Wang, Yao Cui, Hao Li</i>	Corrosion Investigation of Main Cable Consisted of Strand Ropes Used for Over 50 Years on An Actual Suspension Bridge <i>Kazuhiro Miyachi, Koji Kinoshita, Yoshitomo Yano, Yosuke Hatasa, Kazuya Tamada</i>
14:05-14:20	Experimental Investigation on A Full-Scale Modular Building Unit with Post-Tensioned Connections <i>Dam-I Jung, Bong-Ho Cho, Doo-Yong Lee, Jae-Sub Lee, Chan-Woo Jung</i>	Suspension Footbridge Form-Finding with Laplacian Smoothing Algorithm <i>Zhuoju Huang, Jiemin Ding</i>	Numerical Investigation on Beam-To-Column Connections Subjected to Combined Flexure and Tension <i>Hayato Asada, Tsuyoshi Tanaka</i>	Shear Lag in Stiffened Box Girder Under Concentrated Load <i>Eiki Yamaguchi, Naoto Kittaka</i>
14:20-14:35	Continuation Method For Design Of Eccentrically Loaded Weld Group <i>Sung-Yong Kim, Jong-Hyun Jung, Cheol-Ho Lee</i>	Damage Performance and Acoustic Emission Characteristic for Concrete Filled Square Steel Tube Columns Under Axial Compression <i>Jianguang Yue, Cunpeng Qian, Hua Fang</i>	Experimental Study on Plastic Deformation Capacity of Composite Beam <i>Hirochika Kodaka, Norihito Miki, Shoichi Kishiki, Yoshihiro Iwata, Satoshi Yamada, Takashi Hasegawa</i>	Effectiveness of Buckling Restrained Damper on Seismic Behavior of Truss Bridge <i>Purevdorj Sosorbura, Eiki Yamaguchi</i>
14:35-14:50	Ultimate Strength of Gusset Plate-Tube Joints Subjected to Shear and Moment <i>Woo-Bum Kim</i>	Parametric Analysis on Hysteresis Performance and Restoring Force Model of LYP Steel Plate Shear Wall with Two-Side Connections <i>Ya-Qi Suo, Sheng-Gang Fan, Cheng-liang Liu, Yun-Long Han, Yang Guo, Run-Min Ding</i>	Extremely Low Cycle Fatigue Behavior of Structural Steel <i>Thaileang Touch, Satoshi Yamada, Takanori Ishida, Yu Jiao</i>	A Numerical Study on Overall Buckling Strength of Welded Box Section Columns Made of Sbh400 <i>Daisuke Matsu, Hiroki Takezawa, Kiyoshi Ono, Hideyuki Kasano</i>
14:50-15:05	Experimental Investigation on Shear Capacity of Rivets <i>Qingtian Su, Sizhe Wang, Xu Jiang</i>	Evaluating Failure of Continuous Steel-Concrete Composite Bridge Girders Under Localized Hydrocarbon Exposure <i>Gang Zhang, Chao-jie Song, Shuanhai He, Qiao Huang</i>	Numerical Analysis of Welded Flange-Bolted Web Beam-To-Column Connection Considering Bolts Slip <i>Dong-Seok Lee, Satoshi Yamada, Yu JIAO, Shoichi Kishiki, Takanori Ishida</i>	A Numerical Study on Local Buckling Strength of Simply Supported Plates Made of SBHS400 <i>Kotaro Sobajima, Kiyoshi Ono, Seiji Okada</i>
15:05-15:20	Behavior and Strength of Combined Bolted-Welded Lap Joints with High-Strength Steel <i>Dae-Kyung Kim, Cheol-Ho Lee</i>	Direct Strength Method for Stainless Steel Lipped Channel Columns Undergoing Local Buckling <i>Mei-He Chen, Sheng-Gang Fan, Ya-Qi Suo</i>	A Concise Hysteresis Model of High Performance 590Mpa Steel Grade Considering The Bauschinger Effect <i>Satoshi Yamada, Dong-Seok Lee, Yu JIAO, Takanori Ishida, Shoichi Kishiki</i>	An Experimental Study on Stress-Strain Characteristic of Electric Resistance Welded Steel Pipes <i>Hitoshi Ozoe, Taiki Inamori, Kiyoshi Ono</i>
15:20-15:35	Structural Behavior of Pin Detailed Connection with Concrete Slab <i>Nobuhiko Tatsumi, Shoichi Kishiki</i>	Parametric Analysis on Elastic Buckling Performance of Low Yield Point Steel Plate Shear Wall with Two-Side Connections <i>Sheng-Gang Fan, Yang Guo, Yun-Long Han, Cheng-Liang Liu, Ting Zhu</i>	Study on Cumulative Deformation Capacity of Steel Beam-To-Column Connections Based on Numerical Analysis <i>Yu Jiao, Satoshi Yamada</i>	Artificial-Intelligence-Based Cable Force Control in Cantilever Erection of Cable-Stayed Bridges <i>Yu-Chi Sung, Eng-Huat Teo, Chun-Ying Wang, Kuo-Hung Chao</i>
15:35-15:50	Research on The Shear Resistance of Headed Studs in Push-Out Test with Cracked Concrete <i>Disheng Zou, Qingtian Su</i>	Nonlinear Analytical Model for CFDST Stub Columns with Corrugated Steel Tubes <i>Yong Fang, Chang-Yong Liu, Yu-Yin Wang, Hua Yang</i>	Finite Element Analysis of Value-Added Exposed Column Base Connections <i>Yao Cui, Yangzi He, Fengzhi Wang, Hao Li</i>	Optimum Fatigue Life Management Through Updating Process with Inspection Information <i>Baixue Ge, Sunyong Kim</i>
15:50-16:05	Seismic Performance of H-Shaped Beam-To-Rectangular Tubular Section Column Connections Using Slotted Diaphragm <i>Joo-Ho Jin, Hee-Sun Seo, Ji-Mo Koo, Seong-Hoon Hwang, Koo-Yun Park, Kyung-Koo Lee</i>		Experimental Study on Cyclic Behaviors of A High Ductility Twinning Induced Plasticity Steel <i>Kim Eng Chouery, Liang-Jiu Jia, Man-Chao He, Min Xia</i>	
15:50-16:10	Coffee Break			

Time	Session 9(Tamna Hall)	Session 10(Halla Hall)	Session 11(Ara Hall)	Session 12(Ora Hall)
16:10 - 18:10	Dynamics Chairs:	Advances in Hybrid Structures Chairs:	Vibrations Chairs:	Advances in Construction and Maintenance of Steel Bridges Chairs:
16:10-16:25	A Experimental Study on The Hysteresis Behavior and Energy Dissipation According to Trapezoidal Corrugated Steel Plate <i>Don-Woo Lee, Mi-Na Yoo, Su-Deok Shon, Seung-Jae Lee</i>	Experimental Study on The Behaviours of High Strength Concrete Encased Steel Columns <i>Jian Zhu, Yong Du, Richard Liew</i>	Local Strain Based Low Cycle Fatigue Assesment of Gusset Plates in Steel Truss Bridges Under Earthquake <i>Chao Jiang, Takeshi Hanji, Kazuo Tateishi, Masaru Shimizu</i>	Development of A Large-Scale Steel Bridge Model for Providing Visual Understanding of Structural Framing and Detail <i>Koji KINOSHITA, Yuta SAKURAI, Hideaki HATANO, Minoru KUNIEDA, Keitetsu ROKUGO</i>
16:25-16:40	A Study on The Structural Performance According to Ceiling Bracket of The Restrained Moment Connection Modular System <i>Don-Woo Lee, Eui-Shin Kawk, Su-Deok Shon, Seung-Jae Lee, Chang-Hoon Kang</i>	Out-of-Plane Stability of Fixed Concrete-Filled Steel Tubular Arches Under Uniformly Distributed Loads <i>Chang-Chun Yuan, Chang-Yong Liu, and Qing Hu</i>	Hysteretic Behavior of Origami-Inspired Steel Plate Shear Wall <i>Wang Shuting, Lu Jinyu, Lu Ding, Qiao Xudong</i>	Experimental Verification for Effect of General Corrosion on Fatigue Strength <i>Lee-Sak An, Yeun Chul Park, Ho-Kyung Kim</i>
16:40-16:55	Real-Time Detection of Beam-End Fractures Based on Strain Measurements During Earthquakes <i>Jun Iyama, Takashi Hasegawa, Hiroto Nakagawa, Yosuke Kaneshiro</i>	Axially Compressive Behavior of Circular Concrete-Filled Steel Tube with Notch <i>Haijia Huang, Lanhui Guo, Hongda Li, Sumei Zhang</i>	Finite Element Analysis of Flexural Yielding Steel Strip Damper Subjected to Cyclic Load <i>Robel Wondimu Alemayehu, Jae-hoon Bae, Chang-Hwan Lee, Young K. Ju</i>	Development of Maintenance System for Highway/ Expressway in Thailand Using Mobile Laser Scanning <i>Taweep Chaisompob, Ekarin Lueangvilai, Tran Thanh Ha, Satoshi Annaka</i>
16:55-17:10	Radius-Cut Coke-Shaped Strip Dampers Subjected to Cyclic Loading <i>Jae-hoon Bae, Chang-Hwan Lee, Minjae Park, Jaeho Ryu, Youngsik Kim, Young K. Ju</i>	Experimental Study of Cft Column Reinforced with Aramid and Polyester FRPs <i>Tae-Hun Lee, Won-Ho Choi, Sung-Mo Choi</i>	Correction Factors for Predicting Critical Wind Velocity of Vortex-Induced Vibration <i>Seungtaek Oh, Jung Sik Kong</i>	Study on Benefit-Cost Ratio Analysis of Retrofit Strategies for Bridge Maintenance <i>Chien-Kuo Chiu, Eiki Yamaguchi, Daniel Santoso</i>
17:10-17:25	Prototype Development of A Readily-Deployable Pressure and Vibration Measurement System for Civil Infrastructures <i>Tae-Hun Kim, Oh-Sung Kwon, Ho-Kyung Kim</i>	Bolted End-Plate Splice Method for Composite Column (BB Splice for PSRC Column) <i>Jong-Jin Lim, Dae-Kyung Kim, Seung-Hwan Lee, Tae-Sung Eom</i>	Experimental Study on Full Scale Moment Resisting Frame Subjected to Multiple Set of Cyclic Loading Histories <i>Keita Kotaki, Takanori Ishida, Randy Tenderan, Shoichi Kishiki, Satoshi Yamada</i>	Analyzing Rust Constituent Produced By Mixture of Chloride Anti-Freezing Agent and Corrosion Inhibitor in Existing Bridge <i>Yosuke Hatasa, Koji Kinoshita, Rina Hasulke, Kazuhiro Miyachi</i>
17:25-17:40	Safety Verification of Tension-Only Braced-Frame Structures Subjected to Multiple Aftershocks <i>Shotaro Nakada, Shoichi Kishiki</i>	Experimental Investigation of Axial Compression Behavior of Encased Composite Columns with High-Strength Angles <i>Tae-Sung Eom, Jin-Won Kim</i>	Pounding Effects Upon Pier Responses in A Multi-Span Simply Supported Steel Girder Bridge Under Earthquakes Considering Foundation Conditions <i>Ho-Seong Mha, Jeong-Hun Won, Sang-Hyo Kim, Sung Bo Kim</i>	Applicability of Leeb Hardness Test for Estimating Change in Mechanical Properties of Fire-Damaged Steel Members <i>Jun Ito, Mikihiro Hirohata</i>
17:40-17:55		Productivity Enhanced Composite Structural System in Singapore and South Korea <i>Jaewook Jeong, Seunghwan Lee</i>	Evaluation of Equivalent Static and Dynamic Analysis Method for Seismic Design of Non-Structural Elements <i>Su-Chan Jun, Cheol-Ho Lee, Sung-Yong Kim, Seung-Ho Lee</i>	Analysis of The Total System Performance of Cable-Stayed Bridge with Floating Tower According to The Inclined Tendon Arrangement <i>Minseo Jang, Yun Woo Lee, Seungjun Kim, Young-Jong Kang</i>
17:55-18:10		Numerical Modeling and Analysis on Concrete-Filled Steel Tubes Incorporating High-Strength Steel <i>Chengliang Tu, Yongjiu Shi</i>	Energy Absorption Capacity and Damage Distribution in Torsional-Systems Using Energy-Based Design Approach <i>Bagheri Bahador, Shin Seung-Hoon, Oh Sang-Hoon</i>	A Study on The Long-Term Measurement Data Analysis of Existing Cable Stayed Bridge Using ARX Model <i>Yun-Woo Lee, Min-Seo Jang, Seung-Jun Kim, Young-Jong Kang</i>
18:10-18:25			Measurement of Bolt Tension of Friction Damper Using Manufactured Load Cell <i>Hye-Min Shin, Dae-Geun Kim, Min-Ki Lee, Ye-Jin Jang, Kyung-Jae Shin</i>	
18:30	Banquet			

TECHNICAL PROGRAM

November 15, Friday

Novemer 15, Friday

8:30	Registration			
09:00-09:30	Keynote Lecture4	Strategies for Mitigating Fire Hazard in Steel Bridges Venkatesh Kodur (Michigan State University, USA)		
09:30-10:00	Keynote Lecture5	Design and Welding of Beam-to-Column Connections for Supper High-Strength Steel Materials Tsuyoshi Tanaka (Kobe University, Japan)		
10:00-10:30	Keynote Lecture6	Applications of Some New Technologies in Design, Construction and Maintainance of a Landscape Steel Footbridge Qilin Zhang (Tongji University, China)		
10:30-11:00	Special Session2	Manufacturing and Application Issues of Giga Steel Yonkyun Song(POSCO, Korea)		
11:00-11:20	Coffee Break			
Time	Session 13(Tamna Hall)	Session 14(Halla Hall)	Session 15(Ara Hall)	Session 16(Ora Hall)
11:20-12:50	Smart Structures Chairs:	Rehabilitation and Vibration Control of Open Deck Bridges in Railway Engineering Chairs:	Fire-Resistant Structures Chairs:	Stainless Steel Chairs:
11:20-11:35	Vibration Control of Pipes Using Dual Rubber Springs Smart Damper Yunkyu Ha, Eunsoo Choi, Tae Yeong Kim, Seong Jun Park, Yeon Seong Lee, Du Hyun Kim, Alireza Ostadrahimi	Some of The Results of Monitoring of Stress-Strain State of Railroad Bridges Steel Superstructures Andrey Yashnov	Evaluation of The Lateral Torsional Buckling Behavior of Stepped Beams At Midspan Exposed to Fire Shane Alolod, Xuan Tung Nguyen, Mabel Catuira, Jong-Sup Park	Experimental Investigation on Cold-Formed Ferritic Stainless Steel Hollow Sections Zhe Lu, Ying Hu
11:35-11:50	Self-Centering Devices Using Dual SMA Rings with Symmetric Behavior Eunsoo Choi, Yun Kyu Ha, Tae Yeong Kim, Seong Jun Park, Yeon Seong Lee, Du Hyun Kim, Woo Bum Kim	Lateral-Torsional Buckling Analysis of Discretely Braced I-Girders with Sliding Track Panels for Railway Bridges Je-Hyuk Ann, Jae-Young Kwak, Jin-Young Lee, Byung H. Choi	Stability of Braced Frame Structure Under Standard and Design Fire Exposure Svetha Venkatachari, Venkatesh K.R. Kodur, Mohannad Z. Naser	Finite Element Analysis on Buckling Strength of The Stainless Steel Tubular Column Under Axial Compression Sung-Soo Kim, Tae-Soo Kim, Jeong-Yeon Kim, Bo-Kyung Hwang
11:50-12:05	Smart Dampers Using Magnets and Precompressed Rubber Springs Eunsoo Choi, Yun Kyu Ha, Tae Yeong Kim, Seong Jun Park, Yeon Seong Lee, Du Hyun Kim, Seung Woo Ha	Tuning Effects of Train-Induced Resonant Vibrations on Steel Railway Bridges J.D. Yau, L. Fryba, S. Urushadze	Fire Severity Measures in Probabilistic Structural Fire Design Hyunseok Park, Anthony Abu, Peter Moss	Experimental Study of Slip Factors in Stainless Steel Preloaded Bolted Connections Yueyan Gu, Jiachang Wang, Baofeng Zheng, Ganping Shu, Qinglin Jiang
12:05-12:20	Steel Construction and Construction Management Through 3D Scanning Technology and Building Information Modelling (BIM) Tae Hyuk Kim, Byoung-Do Lee, Kwang-Ryang Chung	Fatigue Performance Analysis of Tension Clamp with Field Construction and Operation Status Chang-Beom An, Hyoung-Bo Sim, Yeun-Chul Park, Man-Cheol Kim	Thermal Performance of Steel Eccentrically Braced Frames Subjected to Fire Conditions Jong Wan Hu, Rachel Chicchi, Iman Mansouri, Seyed Javad Mortazavi, Jae-Joung Kim	Structural Component Experiments of The Distributed Underwater Monitoring System: Floating Buoy and Underwater Base Station Ho-Seong Mha, Hak-Lim Ko, Won-Jung Yoon, Je-Hyeong Jang, Yeon-Seung Lee
12:20-12:35	Hysteretic Behavior of Steel-Assembled Buckling- Restrained Braces Dong-Hyeon Shin, Byung-Ick Yoon, Hyung-Joon Kim	Development of Track Components for CWR Construction on An Open Deck Railway Bridge Sooho Chae, Inchul Back, Sanghyun Choi	A Simplified Approach for Evaluating The Temperature Profile of Composite Beams Exposed to Fire Using Impact-Echo Testing Seong-Hoon Kee, Jun Won Kang, Byong-Jeong Choi	Tests of Stainless-Clad Bimetallic Steel Welded Circular Section Columns Pingyu Zhao, Huiyong Ban, Yixiao Mei, Yongjiu Shi
12:35-12:50	Incorporating Laser Ultrasonic Propagation Imaging Method and Data Mining Algorithms for Bolt Looseness Automatic Diagnosis Dai Quoc Tran, Kassahun Demissie Tola, Ju-Won Kim, Byoungjoon Yu, Seunghae Park	Axial Rail Stress Analysis of An Open Deck Railway Bridge Using Displacement Control Sooho Chae, Sanghyun Choi	Behaviour of Full High Strength Steel Extended Endplate Connections At Ambient Temperature and After Fire Xuhong Qiang, Yifei Shen, Xu Jiang, Qilin Zhang, Frans S.K. Bijlaard	Comparison of Hysteretic Behavior of Austenintic Stainless Steel (STS316L) and Carbon Steel Slit Damper BoKyung Hwang, YoungJu Kim, JinWon Kim, TaeSoo Kim
12:50-13:05	Track Buckling Analysis of Ballastless Plate Girder Bridge Jiho Moon			
12:50-13:50	Lunch			

Time	Session 17(Tamna Hall)	Session 18(Halla Hall)	Session 19(Ara Hall)	Session 20(Ora Hall)
13:50-15:50	Light Gauge Structures Chairs:	Composite Structures Chairs:	Stability Chairs:	Connections Chairs:
13:50-14:05	Experimental Study on The Structural Performance of Prefabricated Panel That Can Be Used for Cold-Formed Steel Shear Wall System <i>Doo-Yong Lee, Bong-Ho, Cho, Dam-I, Jung, Jae-Sub Lee</i>	Investigation of Buckling Behavior of Slender Web Steel Beam Strengthened with Composite Materials <i>Angus, Chi-Chiu Lam, Michael, Chi-Ho Yam, Cheng Fang</i>	Ultimate Behaviors Of Stiffened Panels Built-Up With High Performance Steel Capable Of Extremely Large Strain-Hardening <i>Kyungsik Kim</i>	Cyclic Loading Test for Concrete-Filled U-Shaped Steel Beam to Concrete-Filled Steel Tube Column Connections <i>Xing Xu, Rui Cheng, Han qing Sun, Rui qi Liu</i>
14:05-14:20	Cyclic Plasticity Model of High Strength Structural Steels <i>Fangxin Hu</i>	Research on Axial Compression Performance of Strength-Gradient Composite Columns with Built-In High-Strength Concrete Filled Steel Tube <i>Jing Ji, Dian-You Yu, Liang-Qin Jiang, Yin-Chun Liu, Mao-Mao Yang, Hua-Yu Song, Li Jiang</i>	Lateral Cyclic Loading Experiment For Seismic Performance Of Two-Stories Rc Structure Frame Retrofitted By External Steel Cylinder Damper <i>Byeong-Jin, Park, Tea-Hun, Lee, Sang-Hoon, Oh, Sung-Mo Choi</i>	Structure Behavior of The Bolted Joints in Metal Construction <i>Miku Kurosawa, Shoichi Kishiki, Nobuhiko Tatsumi</i>
14:20-14:35	Experimental Study on Load Carrying Capacity Enhancement of System Supports Considering Full Installation of Bracing Members <i>Nam-Gwon Jang, Jeong-Hun Won, Seung Hyeon Shin, Ye Ji Na, Ho-Seong Mha</i>	Research on Seismic Performance of Strength-Gradient Composite Columns with Built-In High-Strength Concrete Filled Steel Tube <i>Jing Ji, Dian-You Yu, Liang-Qin Jiang, Yang Wang, Mao-Mao Yang, Hua-Yu Song, Li Jiang</i>	Effect Of The Torsional Rigidity Of The Flange On The Elastic Shear Buckling Of The Web Panel <i>Dae-Hyeok Kim, Sang-Yun Han, Min-Seo Jang, Jong-Min Kim, Young-Jong Kang</i>	Cyclic Loading Test About The Beam-To-Column Connection with T-Stub Type Slit Damper <i>Hae-Yong Park, Sang-Hoon Oh</i>
14:35-14:50	Dynamic Behaviors of A Submerged Deck Under Wave Excitations <i>Ho-Seong Mha, Jeong-Hun Won, Won Jung Yoon, Jae Seol Shim, Je Hyeong Jang</i>	Numerical Study on A Complete Circumferential Surface Crack in A Pipe Strengthened with CFRP <i>Zhuxuan Li, Tao Chen, Zican Xia</i>	Numerical Investigation On Behavior Of Cold-Formed Built-Up Open-Section Columns With G-Section Under Axial Compression <i>Han qing Sun, Rui Cheng, Xing Xu, Chao Hu</i>	Investigating Seismic Behavior of WUF-W Connections According to Three Different Access Hole Configurations Using Fea <i>Sang Whan Han, Jungho Hyun, Eun Seon Cho, Jin-Won Kim</i>
14:50-15:05	Evaluating Buckling Strength of HSB460 Steel Tubular Columns <i>Seong-Wook Han, Yeun Chul Park, Ho-Kyung Kim, Doobong Bae</i>	Seismic Behavior of Fully Prefabricated CFDST Frames with Beam-Only-Connected Steel Plate Shear Walls <i>Yi Hu, Junhai Zhao</i>	Free Torsional Rigidity And Its FEM Verification Of Concrete-Filled Elliptical Steel Tubular Beams <i>Wen-fu Zhang, Ming-hao Zhang, Wei Yan, Qing Xu, Ying-chun Liu</i>	Fundamental Characteristics of Driving Pin and Its Effects on Structural Components <i>Anisa Jasmine Apriyadi, Nobuhiko Tatsumi, Shoichi Kishiki, Eiichi Watanabe, Yukichi Okada</i>
15:05-15:20	Blast Response of Concrete-Filled Steel Tubular Columns Strengthened with CFRP <i>Jing Dong, Jun-hai Zhao, Guo-wei Wang</i>	Strength Evaluation of Angle Type Shear Connectors in Composite Beams <i>Jun-Seop Lee, Kyung-Jae Shin, Min-Ki Lee, Chul-Ho Yoo</i>	Analytical Solution For Lateral-Torsional Buckling Of I-Beams Under Combination Of Uniformly Distributed Load And Concentrated Load At Mid-Span <i>Wen-fu Zhang, Wei Yan, Ying-chun Liu, Bin Huang, Zhao-ming Hang</i>	An Experimental Study on The External Strong and Weak Axis Connection of Modular System <i>Daehee Jang, Keunyeong Oh, Kangmin Lee</i>
15:20-15:35	Effect of Repairment of Existing Tall Building By Attaching Dampers <i>Atsushi Sugawara, Satoshi Yamada, Takanori Ishida</i>	Finite Element Model on Mechanical Behavior of Unit-Typed Composite Shear Wall with Double Steel Plates and Infill Concrete <i>LIU Dong, SHI Yongjiu, YU Xianglin, TU chengliang, XU Yue</i>	Joint Coupler For Wedge Binding Scaffold System <i>Takashi Harai, Katsukiyo Shimomura, Tatsuo Kurisu</i>	Seismic Performance Evaluation of The Internal Strong and Weak Axis Connection of Modular System Using H-Shape Steel <i>Daehee Jang, Sunghyun Park, Kangmin Lee</i>
15:35-15:50	Global Performance Analysis of The Cable-Stayed Bridges with Floating Towers Under The Harsh Wave Conditions <i>Seungjun Kim, Minseo Jang, Yunwoo Lee, Deokhee Won, Young-Jong Kang</i>	Experimental and Theoretical Investigations on The Shear-Bond Behavior of High Performance Composite Slabs <i>Xiang-Lin Yu, Yong-Jiu Shi, Yaoguang Peng, Kunjian Lin, Dong Liu</i>	Designing Efficient Free-Form Lattice Structure Considering Imperfection Sensitivity <i>Ruoqiang Feng, Fengcheng Liu</i>	Static Behavior of High-Strength Steel Rhs X-Joints Including Chord Stress Effect <i>Seon-Hu Kim, Cheol-Ho Lee, Dong-Jin Shin</i>
15:50-16:10	Coffee Break			

TECHNICAL PROGRAM

November 15, Friday

Time	Session 21(Tamna Hall)	Session 22(Halla Hall)	Session 23(Ara Hall)	Session 24(Oru Hall)
16:10 - 18:10	Fatigue Chairs:	Advanced Steel Applications Chairs:	Steel Bridge Rehabilitation Chairs:	Damage Assessment Chairs:
16:10-16:25	Effect of Welding Penetration Defect on Fatigue Crack Initiation of Cruciform Member <i>Kyong-Ho Chang, Shazia Muzaffer, TaeHwan Um, Z.M Wang</i>	TBA	Recreation of Root Cracks in Transverse Welds Between Sole Plate and Bottom Flange <i>Takahide Hirai, L. H. Ichinose, Masahiro Sakano</i>	Influence of Post-Weld Heat Treatment with Induction Heating on Steel Members Repaired By Patch Plate Welding <i>May-Phyo Aung, Mikihiro Hirohata</i>
16:25-16:40	Fatigue Strength of Out-Of-Plane Gusset Welded Joints Under Variable Amplitude Loading in Long Life Region <i>Yuki Banno, Koji Kinoshita</i>		Fatigue Behavior of Riveted Beams Removed From Amarube Bridge <i>Yuichi Shiraishi, Masahiro Sakano</i>	Experimental Study of Corner Joint of High-Performance Steel Fabricated By Submerged Arc Welding <i>Yuta Kibishi, Satoshi Yamada, Yuko Shimada, Takanori Ishida, Hiromi Shimokawa, Satoshi Aoyagi</i>
16:40-16:55	Fatigue Crack Propagation Analysis of Longitudinal Welded Joint Containing Blowholes <i>Cut Atika Putri, Kazuo Tateishi, Takeshi Hanji, Masaru Shimizu</i>		Non-Destructive Identification of Closed Fatigue Crack Opening-Closing Behavior By Phased Array Ultrasonic Testing <i>Kenji Obara, Koji Kinoshita, Takehisa Nohdo, Masahiro Kozuka</i>	Corrosion Investigation of Main Cable Consisted of Strand Ropes Used for Over 50 Years on An Actual Suspension Bridge <i>Kazuhiro Miyachi, Koji Kinoshita, Yoshitomo Yano, Yosuke Hatasa, Kazuya Tamada</i>
16:55-17:10	Finite Element Analysis of FRP-Strengthened Steel Plate with Semi-Elliptic Surface Crack <i>Zi-Can Xia, Tao Chen, Zhu-Xuan Li</i>		Development of Fatigue Test System for Actual Sign Structures and Their Fatigue Characteristics <i>Kouki Murase, Koji Kinoshita, Kenji Obara, Masahiro Kozuka</i>	Characterization of Rust Layer Formed on Carbon Steel Under Wet/Dry Cycle Conditions Exposed to Chloride/Non-Chloride Anti-Freezing Agent Solution <i>Rina-Hasuike, Koji-Kinoshita, Yosuke-Hatasa</i>
17:10-17:25	Numerical Study on Fatigue Properties of CFRP-Repaired Steel Plates with Mixed-Mode Edge Crack <i>Cheng Yao, Tao Chen</i>		Effectiveness of Inspector'S First-Aid Works At Inspection Site As Proactive Maintenance <i>Midori Ando, Shigeaki Tsukamoto, Kinya Yamashita</i>	Seismic Vulnerability Analysis of Structure with Uneven Settlement of Foundation <i>Chao Bao, Fang-ze Xu, Xiao-tong Ma, Ming-jie Mao, Shang-rong Zhang, Li-xin Zhang</i>
17:25-17:40	Fatigue Crack Initiation Assessment of Load-Carrying Cruciform Welded Joints Under Low Cycle Actions <i>Yuko Ohashi, Takeshi Hanji, Kazuo Tateishi, Masaru Shimizu</i>		Simple Repair Technique of Fatigue Crack By Automatic Center Punch <i>Can Shen, Toshiyuki Ishikawa, Kentaro Yamada</i>	Damage Alarming for Large Circular Arch Steel Structure Under Ambient Excitation <i>Zhe Liu, Cheng-bo Wang</i>
17:40-17:55	Estimation of Fatigue Crack Propagation Behavior in Steel Plate Subjected to Out of Plane Bending <i>Kentaro Horio, Kazuo Tateishi, Masaru Shimizu, Takeshi Hanji</i>		Investigation of Fatigue Strength Improvement of Welded Joints on The Sign Structures By Impact Crack Closure Retrofit Treatment <i>Masahiro Kozuka, Koji Kinoshita, Kenji Obara</i>	Estimation of Beam Deflection Based on Terrestrial Laser Scanning Data Using Genetic Algorithm <i>Michael Bekele Maru, Donghwan Lee, Soojung Shin, Hau Van Quach, Seunghee Park</i>
17:55-18:10	Development of Method for Fatigue Reliability Assessment Considering Multiple Crack Coalescence <i>Jun-Yong Park, Yeun Chul Park, Ho-Kyung Kim</i>		Study on The Reinforcement Method with Polymar Cement Mortar for Steel Column <i>Takeaki Kubo, Nozomu Taniguchi, Weiwei Lin, Shinya Satake</i>	Fundamental Experiment for Damage Detection of Steel Finger Type Expansion Joints Based on Passing Sound <i>Sanako Kato, Koji Kinoshita, Shoichi Taga, Yutaro Umekawa, Hisatada Suganuma, Masahiro Kozuka</i>
18:10-18:25			Evaluation of Optimal Condition for Removing Paint Using Clean Laser System <i>Jin-Eun Park, Kab-Soo Kyung, Myeong-Gi Moon, Kang-Hoon Koh, Ik-Sang Yun</i>	
18:25-18:40			Reduction of Stress Concentration At Stop-Hole By Bolting A Crack <i>Toshiyuki Ishikawa, Shogo Kiyokawa, Wataru Nakatsuji</i>	

Poster Session (Ilchul Hall Foyer)

9:00 November 14 – 16:10 November 15	1	Force-Displacement Relationship of A Butterfly-Shaped Beams Based on Gene Expression Programming <i>Alireza Farzampour, Iman Mansouri, Seyed Javad Mortazavi, Jong Wan Hu</i>	10	Comparison of Scour Risk Assessments About Different Offshore Wind Turbine Support Structures <i>Young-Jin Kim, Dong-Hyawn Kim</i>	19	Evaluation of In-Plane Strain Following Ability of Non-Welding Building Hardware <i>Su-Deok Shon, Don-Woo Lee, Seung-Jae Lee</i>
	2	Uav-Based Deformation Monitoring Method of Buildings As Preliminary Safety Evaluation <i>Jong-Hoon Lee, Jae-Hoon Bae, Young-Kyu Ju</i>	11	A Study on Live Load Deflection Criteria of Long-Span Steel Bridges <i>Eui-Seung Hwang, Ki-Jung Park, Do-Young Kim, Young-Chul Kwon</i>	20	Elastic Flexural Capacity and Ductility of Hybrid-Strength End-Plate Connection <i>Chen Jia, Yongsong Shao, Jianwei Li, Yongchao Wang</i>
	3	Structural Risk Analysis of High-Rise Buildings in Korea Through Simulation of Disaster Risk Evaluation <i>Go-Eun Kim, Tae-Young Kim, Boo-Seong Kang, Young-Kyu Ju</i>	12	Flexural Strength of U-Flanged Truss Steel Beam <i>Sung-Jin Ahn, Young-Ho Kim, Myoung-Ho Oh, Myeong-Han Kim</i>	21	Analytical Study on The Response Characteristics Analysis of Dual Frame-Type Seismic Retrofit System <i>Sang-Hoon Oh, Kwang-Yong Choi, Young-Ju Kim, Hong-Sik Ryu</i>
	4	Structural Performance and Efficiency of Novel System for Piloti-Type Building <i>Gifari Zulkarnaen, Robel Wondimu Alemayehu, Young-Kyu Ju</i>	13	Analysis of U-Flanged Truss Hybrid Beam Focusing on Its Flexural Capacity <i>Sung-Jin Ahn, Young-Ho Kim, Myoung-Ho Oh, Myeong-Han Kim</i>	22	Hysteretic Properties of Chevron Eccentrically Braced Steel Frames Using Steel Slit Links with Sma <i>Joo-Woo Kim, Seung-Han Yoon</i>
	5	Cyclic Loading Test of Novel Buckling-Restrained Braces Infilled with PCM <i>Seok-Ho Hong, Robel Wondimu Alemayehu, Gifari Zulkarnaen, Young-Kyu Ju</i>	14	The Influence of Panel Zone Shear Deformation on I-Section Column Steel Frames with Box-Strengthened Panel Zone Connection <i>Sisi Chao, Linfeng Lu, Guanqi Lan, Kangsheng Li, Pin Lv</i>	23	Stiffness Reduction Factors of End-Plate Connection for Peb Using Finite Element Analysis <i>Jun-Seop Lee, Kyung-Jae Shin, Chul-Ho Yoo, Gee-Hyuk Kwon, Da-Hun No</i>
	6	Thermal Insulation of Steel-Polymer Hybrid Floor System <i>Beoul-Yi Kim, Tian YunQi, Min-Jae Park, and Young-Kyu Ju</i>	15	Experimentally Parametric Analysis on The Post-Fire Seismic Performance of Steel Reinforced Concrete Columns <i>Guang-Yong Wang, Dong-Ming Zhang, Zhang Chao</i>	24	Experimental Study on Flexural Performance of Composite U-Tube Flange H-Beam Structure <i>In-Rak Choi, Young-Hoon Kim, Suk-Jae Jung, Jae-Hwan Lee</i>
	7	A Seismic Performance of Steel Hysteretic Damper Depending on The Number of Slits <i>Min-Cheol Kim, Dong-Keon Kim</i>	16	Dynamic Response Prediction of Building Structures Using Deep Learning <i>Hyun-Su Kim, Na-Ra Jang, Min-Woo Lim, Yun-Su Jang, Woo-Min Choi</i>	25	Reduction Effect of Quantity-Safety Distance by Increased Earth-Cover for the Ammunition and Explosives Storage Facilities <i>Seungsu Han, Jihye Kwon, Sungkon Kim</i>
	8	Seismic Performance of Steel Frames Equipped with A New Hybrid Steel-Friction Damper <i>Iman Mansouri, Chang-Hwan Lee, Nadia M. Mirzai, Jong Wan Hu</i>	17	Probabilistic Fatigue Life Assessment of Offshore Wind Turbine Tripod Type Support Structure <i>Gee-Nam Lee, Dong-Hyawn Kim</i>	26	Improvement of Protective Performance by applying Sacrificial Members <i>Jihye Kwon, Seungsu Han, Sungkon Kim</i>
	9	Seismic Performance Evaluation of Medium Voltage Metal Clad Switchgear <i>Young-Su Yu, Joo-Dong Kim, Ho-Jin Heo, Min-Hyung Kim, Joon-Yeon Kim</i>	18	Response Spectrum Analysis of Bridges Supported By Double Skinned Composite Tubular Columns <i>Jeong-Hwa Lee, Nam-Joo Byun, Deok-Hee Won, Jong-Min Kim, Young-Jong Kang</i>		