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ICART 2025

The 5th International Conference on Advanced Railways and Transportation 2025

Future Railway and Mobility with AI and Digital Innovation

Jeju

October **29** - **31**, 2025

MAISON GLAD JEJU, Korea

Organized by
THE KOREAN SOCIETY FOR RAILWAY

Co-organized by
SINCE 1905
KOREA NATIONAL UNIVERSITY OF TRANSPORTATION

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KOFST

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ICART 2025

The 5th International Conference on Advanced Railways and Transportation 2025

Future Railway and Mobility with AI and Digital Innovation

Jeju

PROGRAM BOOK

October **29** - **31**, 2025

MAISON GLAD JEJU, Korea

Program at a Glance

October 29 - 31, 2025 | MAISON GLAD JEJU, Korea

Date	Time	Convention Hall A (1F)	Crystal Hall A (2F)	Crystal Hall B (2F)	Jade Hall A (2F)	Jade Hall B (2F)	Amethyst Hall (2F)	Ruby Hall (2F)	Sapphire Hall (2F)	Lobby (2F)
October 29 (Wed.)	9:00~9:30	Oral Session #1 (9:00~10:15)				SS: Advanced Smart Mobility Connected to Railway Stations (9:00~10:40)				
	9:30~10:00									
	10:00~10:15									
	10:15~10:45	Keynote Talk: Sergiy Gnatyuk (Ukraine)								
	10:45~11:00									
	11:00~11:10	Opening Ceremony - Convention Hall A (1F)								
	11:10~11:40	Keynote Talk: P. Blair Trame (UK) - Convention Hall A (1F)								
	11:40~12:10	Keynote Talk: Chris Ho (HKSAR, China) - Convention Hall A (1F)								
	12:10~12:30	Lunch - Convention Hall A (1F) (12:10~13:20)								
	12:30~13:00									
	13:00~13:20		SS: New Requirements of Global Rail Market and Efforts of Korean Railway Industry to Face with Changes	SS: Travel Behavior Analysis	SS: Optimization of Friction Losses in Railway Axle box Bearings and RCMS (Railway vehicle Condition Monitoring System)			SS: Innovating Railways: Paving the Path to Sustainable Mobility		Poster Setup (13:30~15:00)
	13:20~13:30									
	13:30~14:00	Keynote Talk: Keiichiro Kondo (Japan)								
	14:00~14:30	Keynote Talk: David Camacho Alcocer (Mexico)								
	14:30~15:00	Keynote Talk: Yong Cui (China)								
	15:00~15:20	Coffee Break								
	15:20~15:50	Keynote Talk: Sergey Kinzhikeyev (Kazakhstan)	Session (15:20~17:00)	Oral Session #2 (15:20~17:20)	SS: Development of Train Traffic Management Technology in Korea	SS: Energy efficiency technology for railway power supply systems	SS: Railway DCP(Derailmen Containment Provision) Technolgy	Oral Session #3 (15:20~17:00)	Oral Session #4 (15:20~16:20)	
	15:50~16:30	Session (15:20~17:00)								
	16:30~17:00									
	17:00~17:20	Oral Session - Video (17:00~18:00)								Poster Session (17:00~18:00)
	17:20~18:00									
	18:00~20:00	Welcome Dinner - SAMDAJEONG (1F) (18:00~20:00)								

Date	Time	Convention Hall A (1F)	Crystal Hall A (2F)	Crystal Hall B (2F)	Jade Hall A (2F)	Jade Hall B (2F)	Amethyst Hall (2F)	Ruby Hall (2F)	Sapphire Hall (2F)	Lobby (2F)
October 30 (Thu.)	9:00~9:30	Keynote Talk: Chul-Woo Kim (Japan)								
	9:30~10:00	Session (9:30~10:00)			Session (9:00~12:00)	Oral Session #5 (9:00~10:00)			SS: Redesigning Transit Networks for More Freedom and Access to Opportunity	
	10:00~10:30					SS: Strategy for overseas export of Electric locomotives				
	10:30~11:00									
	11:00~11:30									
	11:30~12:00	Lunch - SAMDAJEONG (1F) (11:30~13:30)								
	12:00~12:30									
	12:30~13:30									
	14:00~15:00	SS: Predict, Carbon Management with Digital Asset Management with IBM Maximo - Sapphire Hall (2F)								
	18:00~	Farewell Reception - Convention Hall A (1F)								
October 31 (Fri.)	9:00~	Tour & Exhibition								

ICART 2025

The 5th International Conference on Advanced Railways and Transportation 2025

CONTENTS

Welcome Message

It is our great honor and pleasure to invite you to the 5th International Conference on Advanced Railways and Transportation 2025 (ICART 2025) to be held on October 29-31, 2025 in Jeju, Korea.

The International Conference on Advanced Railways and Transportation 2025 has been held biennially since 2016, by the Korean Society for Railway, to provide a unique platform for researchers to share their latest research progress and explore future directions of railway engineering and transportation studies.

Railways are more environmentally friendly than any other means of transport. However, there are disadvantages such as high cost, high safety, and high punctuality. To efficiently overcome these disadvantages and develop into a sustainable means of transportation, various AI technologies have begun to be applied to the railway system.

This ICART conference will provide a variety of programs including distinguished presentations, networking events, and tours to benefit from many fruitful and enriching discussions as well as to initiate collaborations across disciplines for the advancement of your research. we would like to have a place to discuss the future of a more sustainable railway transportation system through expert meetings and exchanges under the theme of "Future Railway and Mobility with AI and Digital Innovation".

ICART 2025 will take place in Jeju where you can enjoy the wonders of nature and Korean cultural heritage. Jeju is one of Asia's most popular and trendy tourist spots, and you will surely find this island attractive. We have prepared social activities to support participants' interest in one another and relish the beauty of Jeju. We hope you take part in this conference to broaden your horizon!

Your participation will make the conference more valuable and successful. We believe that this conference will surely serve as one of the most rewarding and memorable meetings for all of us.

All the organizing committee members are looking forward to meeting you in Jeju, Korea.

Sincerely yours,

Jae-Moon Kim
General Chair, ICART 2025
President, Korean Society for Railway
Professor, Korea National University of Transportation, Korea

Jeong Won Kang
Organizing Committee Chair, ICART 2025
Professor, Korea National University of Transportation, Korea

Committee

General Chair	**Jae-Moon Kim** Korea National University of Transportation, Korea
Co-General Chair	**Jun Lee** Korea Railroad Research Institute, Korea
Organizing Chair	**Jeong Won Kang** Korea National University of Transportation, Korea
Organizing Co-Chair	**Seogjung (Jerome) Choi** Korea Railroad, Korea **Hyoungjune Kim** Kyungil University, Korea **Jeong Ryol Shin** Korea Railroad Research Institute, Korea **Assel Mukasheva** Kazakh-British Technical University, Kazakhstan
Program Committee	**Jin-Tae Kim** Korea National University of Transportation, Korea **Young Park** Hanbat National University, Korea **Hae Won Lee** Woosong University, Korea **Min-Kyeong Kim** Korea Railroad Research Institute, Korea **Seok Jin Kwon** Korea Railroad Research Institute, Korea **Chul Su Kim** Korea National University of Transportation, Korea **Bubyoung Kang** Woosong University, Korea **Kiwon Lee** Korea Railroad Research Institute, Korea
International Committee	**P. Blair Trame** Asset Management Consulting Limited, UK **Chris Ho** TÜV Rheinland, HKSAR, China **Yong Cui** Hefei University, China **Sergey Kinzhikeyev** Astana IT University, Kazakhstan **Sergiy Gnatyuk** State University Kyiv Aviation Institute, Ukraine **David Camacho Alcocer** Blatt Synergies UG and EcoUrba, Mexico
Publication Committee	**Hosung Jung** Korea Railroad Research Institute, Korea **Jigu Seo** Korea National University of Transportation, Korea **Jaebum Lee** Korea National University of Transportation, Korea **Jiho Moon** Kangwon National University, Korea **Sangpil Ko** Korea Railroad Research Institute, Korea **Joon Young Kim** Hannam University, Korea

Conference Information

Registration

Registration will be available at the lobby(1F) from October 29 to 30, 2025. On-site payments can be made by credit card (Visa, MasterCard, or AMEX). The registration desk will be open during the conference according to the following schedule.

Location	Convention Hall Lobby (1F), MAISON GLAD JEJU	
Date		**Time**
October 29 (Wed.)		08:00~18:00
October 30 (Thu.)		08:00~12:00

Name badge

Name badges will be used as passes. You are kindly requested to wear your name badges throughout the conference period. Please note that access to the session rooms and exhibition area may be restricted if you are not wearing your name badge.

Opening Ceremony

All registered participants are cordially invited to join and celebrate the official opening of the ICART 2025. Please join us in celebrating this conference.

Location	Convention Hall A (1F)
Date & Time	October 29 (Wed.) 11:00~11:10

Lunch / Dinner

All registrants of ICART 2025 can have lunch at the Convention Hall A (1F) on October 29 (Wed.), dinner at SAMDAJEONG (1F) on the same day, and lunch at SAMDAJEONG (1F) on October 30 (Thu.) in MAISON GLAD JEJU.

Date & Time	Location
October 29 (Wed.) 12:10~13:20	Convention Hall A (1F)
October 29 (Wed.) 18:00~20:00	SAMDAJEONG (1F)
October 30 (Thu.) 11:30~13:30	SAMDAJEONG (1F)

Welcome Reception

Delegates will take part in the welcome reception with delightful food, allowing you the opportunity to mix and mingle with colleagues and friends.

Location	Convention Hall A (1F)
Date & Time	October 30 (Thu.) 18:00~

Secretariat Office

Location	Function Room (1F), MAISON GLAD JEJU	
Operating Hours		
Date		**Time**
October 29 (Wed.)		08:00~18:00
October 30 (Thu.)		08:00~12:00

Technical Program Information

Presentation Time

|	
Keynote Talk	30min. (25 minutes presentation & 5 minutes Q&A)
Oral Presentation	15min. (10 minutes presentation & 5 minutes Q&A)

Oral Presentation

- The speakers are asked to bring PowerPoint (or PDF) slides and present their research in a podium presentation.
- ICART 2025 will provide a dedicated laptop for presentations, and speakers are strongly encouraged to use the conference laptop to streamline the presentation process and avoid time-consuming transitions between personal devices.
- To prevent potential software compatibility issues, particularly with MS PowerPoint, speakers are advised to save their presentation on a USB memory stick and bring a backup version for added security.
- Please upload your files to the local laptop in the session room during the breaks between sessions.
- Speakers are recommended to arrive in the session room 10 minutes before the start of their sessions to check in with the session chair.
- A proctor will be available in case you need technical assistance.

Poster Presentation

The authors of papers accepted for poster presentation are asked to prepare a poster and display it for the duration of the conference on a designated panel provided by the conference.

- Location: 2nd Lobby
- Poster Panel Size: 1.0m in width and 2.5m in height.
- The poster board is self-standing.
- Each poster's code will be shown on the board.
- Scotch tape will be provided for your use.
- Use of double-sided tape is prohibited.
- During the session anticipated discussions with participants are encouraged.
- Each poster including the presentation title, authors, and affiliation must fit within a 0.9m x 1.5m space. (A0 size recommend)
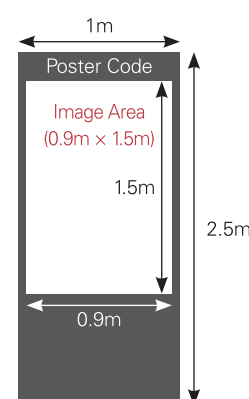
Poster Session	
Date	October 29 (Wed.)
Put-up	13:30~15:00
Presentation	17:00~18:00
Take-down	18:00~19:00

* Please note that posters remaining after the session will be discarded. Thus, please ensure to take your posters down during the take-down time.

Exhibition
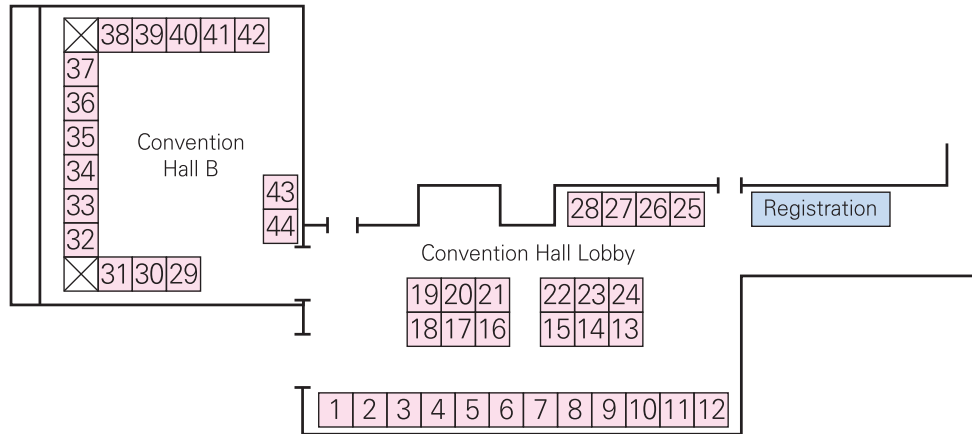
Booth No.	Exhibitor
1, 2	Nemosys
3	Transportation Environment Research Division, Korea Railroad Research Institute (KRRI) / Anytech
4, 5	Railway Test & Certification Center, Korea Railroad Research Institute (KRRI)
6	Rail Safety and Environment Division, Korea Railroad Research Institute (KRRI)
7 - 9	Rail Industry Support Division, Korea Railroad Research Institute (KRRI)
10 - 12	Public Relations and Cooperation Office, Korea Railroad Research Institute (KRRI)
13	LOHBs
14	Cheonho Industrial
15	OCS Solution
16	ESCO RTS
17, 18	Pilz Korea
19 - 21	Korea National Railway
22 - 24	Railway Industry Information Center, Korea National Railway
25	Korea Electric Power Corporation
26 - 28	IBM
29 - 34	Korea Railroad Corporation
35, 36	CSI Entech
37	Ewon T&C
38	Songgang Networks
39	Hosung E&C
40	Daeryun Construction
41	Donga ENG
42	DEWESoft Korea
43, 44	3M Korea

Keynote Speakers

Critical Infrastructure Security and Resilience: Emerging Threats and Countermeasures
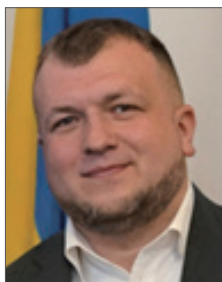
Sergiy Gnatyuk

(Professor, State University "Kyiv Aviation Institute", Ukraine)

- Vice-Rector for Research and Technology Transfer, State University "Kyiv Aviation Institute" (from 2024)
- Board Member, Ukrainian Cybersecurity Cluster (from 2024)
- President, Scientific Cybersecurity Association of Ukraine (from 2022)
- Dean of the Faculty of Computer Science and Technology, National Aviation University (2023-2024)
- Scientific Adviser, Research Laboratory of Cyber Threats Counteraction in Aviation (from 2019)
- Vice-Dean for Research of the Faculty of Cybersecurity, Computer and Software Engineering (2019-2022)
- Full Professor in Computer Science, National Aviation University (2021)
- Doctor of Science in Eng (Cybersecurity), National Aviation University (2017)
- Visiting Professor, Universities in Poland, Georgia, Kazakhstan (from 2014)
- Associate Professor in Cybersecurity, National Aviation University (2014)
- PhD in Eng (Cybersecurity), National Aviation University (2011)
- Master of Science in Information Security, National Aviation University (2007)

Utilizing Digital Technologies for More Cost-Effective Maintenance in the Rail Sector

P. Blair Trame

(Hub Lead, North Asia, AMCL(Asset Management Consulting Limited), UK)

AMCL is a management consultancy helping infrastructure clients succeed in a changing world. Founded in the UK in 1997, AMCL is the world leading asset management consulting firm having advised over 400 clients globally. AMCL established its North Asia business in Seoul in 2024.

Blair leads AMCL's North Asia business. He has asset management experience in the US, Hong Kong, Australia, and Korea, including working with multiple rail and transit organizations in the US and Australia. He is an adjunct professor at Duke University (US), where he created the course: Infrastructure Project Delivery & Managing the Built Environment. Blair lives in Seoul with his wife.

Keynote Talk 3   October 29 (Wed.), 11:40-12:10, Convention Hall A (1F)

Any safety concerns for the recent transportation system innovation?

Chris Ho
(General Manager, TÜV Rheinland, HKSAR, China)

Chris is a safety and reliability consultant, technical and management process assessor, and Chartered engineer with over 25-year experience in a number of complex rail and non-rail projects, from requirements specification, design development to systems integration for revenue operation. He provides railway consultancy services in systems assurance, fire engineering, Reliability, Availability, Maintainability and Safety (RAMS) modelling and performance assessment, risk management, safety engineering, independent safety assessment (including SIL4 software application), human factors, cybersecurity, asset management and systems engineering and integration.

Keynote Talk 4   October 29 (Wed.), 13:30-14:00, Convention Hall A (1F)

Power Electronics Technologies for the Innovation of Railway Vehicle Traction System

Keiichiro Kondo
(Professor, Waseda University, Japan)

KEIICHIRO KONDO received B.S. and Dr. Eng. from Faculty of Electrical Engineering, Department of Science and Technology, Waseda University, in 1991 and 2000, respectively. He was with Railway Technical Research Institute from 1991 to 2006 and was engaged at R&D for power electronics applied railway vehicle traction system. From 2007 to 2018, he was in Electrical and Electronic Engineering Course of Graduate School of Chiba University. Since 2018, he is a professor at School of Advanced Science and Engineering, Department of Electrical Engineering and Bioscience, Waseda University. His current research interests are power electronics, AC motor drive, and their applications to railway and automovile traction system. He is a Fellow of IEEJ.

Keynote Speakers

Railway Development Based on Operational Concepts: A Structuring Methodology for Strategic Projects in Mexico

David Camacho Alcocer
(President and Senior Advisor on Railway Projects, Blatt Synergies UG and EcoUrba, Mexico)

David Camacho Alcocer is a licensed Civil Engineer in California (P.E. California) with a Master's degree in Infrastructure Planning, specializing in Transport and Land Use, and a Ph.D. in Railway Transportation Systems from the University of Stuttgart. He has over four years of experience as a project manager in land development and has been a key promoter of numerous railway projects in Mexico, including the Naucalpan–Buenavista Light Rail, AIFA–Pachuca Suburban Train, García–Monterrey Airport line, Saltillo and Celaya suburban systems, and the Monterrey–San Antonio Interurban Train.

As a researcher at the University of Stuttgart, he developed urban and rural mobility models based on demand and paratransit systems. He also served as Director General of Studies and Railway Registry, and later as Head of Mexico's Federal Railway Regulatory Agency, where he led the creation of national railway regulations and geospatial platforms, and formalized over 15 railway project registrations.

Currently, he advises on railway infrastructure development, including the Tren Maya and Mexico's Grand Railway Vision, leading the basic engineering for track alignment, track design, operations, and signaling and control systems for new projects under President Claudia Sheinbaum's administration.

PULSim: A Comprehensive Simulation Platform for Railway Planning and Operations

Yong Cui
(Professor, Hefei University, China)

- Univ. Prof. Dr.-Ing. at Hefei University
- Apl. Prof. Dr.-Ing. habil. at University of Stuttgart
- Executive Director at CDFEB e.V. (Chinese-German Research and Development Centre for Railway and Transportation Technology Stuttgart)
- School of Urban Construction and Transportation, Anhui Provincial Key Laboratory of Urban Rail Transit Safety and Emergency Management, Hefei University, Hefei, Anhui 230601, China

Keynote Talk 7   October 29 (Wed.), 15:20-15:50, Convention Hall A (1F)

Model for supporting critical railway infrastructure in case of earthquakes

Sergey Kinzhikeyev
(Associate Professor, Astana IT University, Kazakhstan)

Sergey Kinzhikeev was born on 02/08/1971. Main job is a Professor at Astana IT University. He holds a PhD degree in transportation engineering and vehicles. He is an associate professor and corresponding member of the Academy of Military Sciences. It has an h-index of 2. He is the author of 80 publications in the field of transport and military affairs, including in the WOS database, Scopus – 6 and in other publications.
He has written 2 monographs, 5 textbooks, and 1 textbook. He was the head of 5 scientific research projects.
Education:
In 1992 graduated from the Leningrad Higher School of Railway Troops and Military Communications. M.V. Frunze. Bachelor. Specialty: Command – tactical railway troops. Qualification: Railway Engineer.
In 2001. graduated from the Military Academy of the Rear and Transport of the Ministry of Defense of the Russian Federation. Magistracy. Specialty: Military and Administrative management. Qualification: Specialist in management.
In 2021 he graduated from the Budapest University of Technology and Economics and received a PhD.

Keynote Talk 8   October 30 (Thu.), 09:00-09:30, Convention Hall A (1F)

Machine learning-aided model updating for structural integrity evaluation of PC girder

Chul-Woo Kim
(Professor, Kyoto University, Japan)

Dr. Chul-Woo Kim has been a Chair Professor at Kyoto University since 2009. He received his bachelor's and master's degrees from Chung-Ang University in Seoul, South Korea, and his Doctor of Engineering degree from Kobe University. His research and teaching interests include vehicle–bridge interaction systems, SHM of bridges, sensing for civil infrastructure condition assessment, data-driven infrastructure management, structural reliability, performance-based design, surrogate modeling for FE model updating, and information fusion. Since 2009, he has supervised 20 PhD students and mentored 15 postdoctoral researchers, including 8 JSPS research fellows.

Technical Program

Oral Session #1

October 29 (Wed.) 9:00~10:15 | Convention Hall A (1F)

Session Chair : Jeong Won Kang (Korea National University of Transportation)

P00112

Personalized HealthCare AI Advisor: Arogyam.ai

▸ K.Parvathy[1], Gokul N[1], Kawin P[1], Nishanthan G S[1]

1. Department of Artificial Intelligence and Data Science, Sri Eshwar College of Engineering (Autonomous) Coimbatore,India

P00033

Deep Learning Approaches for Image-Based Animal Phenotype Recognition

▸ Dina Koishiyeva[1], Assel Mukasheva[1], Jeong Won Kang[2]

1. School of Information Technology and Emgineering, Kazakh-British Technical University, Imaty, Kazakhstan

2. Transportation System Engineering, Korea National University of Transportation, Uiwang-si, Republic of Korea

P00034

Machine Learning Approaches for Stock Market Prediction: A Comparative Study of Time Series Models

▸ Almas Saduakas[1], Assel Mukasheva[1], Alibek Bisembayev[1], Jeong Won Kang[2]

1. School of Information Technology and Engineering, KBTU, Almaty, Kazakhstan

2. Korea National University of Transportation, Korea

P00108

Artificial Intelligence and Machine Learning Technologies

▸ Assel Mukasheva[*]

School of Information Technology and Engineering, Kazakh-British Technical University, Tole Bi Street 59, Almaty, Kazakhstan

SS: Advanced Smart Mobility Connected to Railway Stations

October 29 (Wed.) 9:00~10:40 | Jade Hall B (2F)

Session Chair : Jin-Tae Kim (Korea National University of Transportation)

P00036

Operational strategies for harmonizing tram and general vehicle traffic signals

▸ Jae hyung Lee[1], Jin-Tae Kim[2*]

1. Dept. of Transportation Policy and System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

P00037	**Pedestrian Flow Simulation for Traffic Signal Strategies in Transit Hubs and Railway Stations**
	▸ Do-Hoon Kim[1], Ju-Bin Kim[2*]
	1. CEO, Forum8 Korea Co., Ltd., Gyeonggi-do, Republic of Korea
	2. Manager, Forum8 Korea Co., Ltd., Gyeonggi-do, Republic of Korea

P00038	**Nationwide Framework for Traffic Signal Control Using Traffic Signal Information Status User Data and Market Penetration Analysis**
	▸ Sang-Tae Oh[1], Jin-Tae Kim[2*]
	1. Dept. of Transportation Policy and System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
	2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

P00039	**Comprehensive Evaluation of Autonomous Shuttle Bus Service in Busan's Osiria Tourism Complex: Effects on Public Transit Accessibility in Station Areas**
	▸ Tae Gun Lee[1], Jin Tae Kim[2*]
	1. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
	2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

P00040	**A Study on Intersection Safety Improvement Using Tram Signal Priority**
	▸ Jae Ho Jo[1], Jin-Tae Kim[2*]
	1. Dept. of Transportation Policy and System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
	2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

SS: New Requirements of Global Rail Market and Efforts of Korean Railway Industry to Face with Changes - IRIS, Risk Assessment, Cybersecurity, and TSI -

October 29 (Wed.) 13:00~15:00 | Crystal Hall A (2F)
Session Chair : Young-Sang Kim (TÜV Rheinland Korea)

P00057	**A Study on the Method of Risk Assessment for PSD System According to the Position of Rolling Stock**
	▸ A. Chul-Su Kim[1], B. Jae-Hyo Song[2*]
	1. Department of Railway Vehicle System Engineering, KNUT, Uiwang, Korea
	2. Department of SMART Railway System, KNUT, Uiwang, Korea

Technical Program

P00095	**Application of globalization RQMS based on IRIS (ISO 22163) to improve quality management systems of Small-sized company** ▸ Sang-Goo Park[1*], Young-Sang Kim[1], Jae-Hyo Song[1] 1. Rail Business Division, TUV Rheinland Korea, Seoul, Korea
P00104	**A Study on Cybersecurity Threat Modeling of Railway CBTC Signalling Systems** ▸ Seok-Woo Lim[1*], Young-Sang Kim[1] 1. Rail Business Division, TUV Rheinland Korea, Seoul, Korea
P00105	**Structure and key requirements of TSIs, and policy to align Korean National Technical Rules for Railway Vehicles with TSIs** ▸ Young-Sang Kim[1*], Sang-Goo Park[1], Seok-Woo Lim[1] 1. Rail Business Division, TUV Rheinland Korea, Seoul, Korea

SS: Travel Behavior Analysis

October 29 (Wed.) 13:00~15:00 | Crystal Hall B (2F)

Session Chair : Hyun Kim (Korea National University of Transportation)

P00097	**Preference Aware Adaptive Dispatch in DRT Systems: A Contextual Bandit Approach to User Preference Learning** ▸ Alain Morris Anthony[1], Sanjay Tandan[2], Hyun Kim[3] 1. Master's degree student, Transportation Energy Convergence Center, Korea National University of Transportation 2. Researcher, Transportation Energy Convergence Center, Korea National University of Transportation 3. Professor, Research Center for Convergence of roads, vehicles, People and advanced ICT, Korea National University of Transportation
P00098	**Comparative Transportation Study: Solutions for Land Traffic Congestion of Cambodia from Korea's Best Practices** ▸ Sar Molinine[1], Sungwon Lee[2], Morn Tithsinara[3] 1. PhD Degree Student, Transportation Energy Convergence Center, Korea National University of Transportation 2. Research Professor, Korea National University of Transportation 3. Master Degree Student, Transportation Energy Convergence Center, Korea National University of Transportation

P00100

Evaluation Framework for Hydrogen Fuel-Cell Train Locomotives: A CB Framework and Case Studies

▸ Hyun KIM[1], Jaecheol KIM[2], Sungwon LEE[3*]

1. Department of Convergence of Transportation and Energy, Korea National University of Transportation, Chungju, Korea

2. Industry Academy Cooperation Foundation, Korea National University of Transportation, Chungju, Korea

3. Industry Academy Cooperation Foundation, Korea National University of Transportation, Chungju, Korea

P00102

An attractive space-making & management in urban rails terminal district with arranging the desirable functions: From the perspective of how railway business companies should be involved in public management

▸ Kazuo Nishii[1], Hyun Kim[2]

1. University of Yamanashi

2. Korea National University of Transportation

SS: Optimization of Friction Losses in Railway Axle box Bearings and RCMS(Railway vehicle Condition Monitoring System)

October 29 (Wed.) 13:00~15:00 | Jade Hall A (2F)
Session Chair : Kwanghyun Kim (Schaeffler Korea)

P00116

Optimization of Friction Losses in Railway Axlebox Bearings Experimental and Computational Evidences as well as Outlook

▸ Frank Bähr[1], Ferdinand Höfling[2]

1. Application Development Rail, Schaeffler Technologies AG & Co.KG, Germany

2. Validation Test Rigs Rail, Schaeffler Technologies AG & Co.KG, Germany

P00117

Railway vehicle Condition Monitoring System

▸ Xu Zhenhua

Schaeffler-CARS Railway Technology Co. Ltd, China

Technical Program

SS: Innovating Railways: Paving the Path to Sustainable Mobility

October 29 (Wed.) 13:00~15:00 | Ruby Hall (2F)

Session Chair : Changju Lee (Korea Advanced Institute of Science and Technology)

P00087

An Integrated Experimental Framework for Studying Older Adults' Use of Railway Stations with VR-based Aging Simulation

▸ Jihye Baek, Jungyoon Kim, Inhi Kim[*]

Cho Chun Shik Graduate School of Mobility, KAIST, Daejeon, Republic of Korea

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P00090

Deploying Lightweight AI Models on Edge Device for Real-Time Railway Data Processing

▸ Su-myeon Park[1], Woong-Chan Byun[1], Seung-Hyun Kong[*]

1. The CCS Graduate School of Mobility, KAIST, Daejeon, Korea

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P00091

Age-Friendly Design Guidelines for Railway Station Safety: A Data-Driven Approach

▸ Suji Lim[1], Tiantian Chen[*]

1. Cho Chun Shik Graduate School of Mobility, Korea Advanced Institute of Science and Technology University, Daejeon, Korea

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P00099

Magnetic Field Energy Harvesting from Railway Catenary Using Capacitance for Enhanced Output Power

▸ Pilhoo Jeong[1*], Sungryul Huh[1], Hyunsoo Lee[1], Youbin Jun[1] and Seungyoung Ahn[1]

1. Korea Adavanced institute of Science and Technology, Daejeon, Korea

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P00111

Redefining the Value of Mixed-Use Railway Development with the Bibliographic Approach

▸ Minseo KIM[1], Changju LEE[1*]

1. Cho Chun Shik Graduate School of Mobility, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

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P00113

Impact Analysis-Based Investment Decision-Making and Land Value Capture for Railway Projects: The RAISE Platform Approach

▸ Sunghoon Lee[1*], Jinhong Min[1], Hyunwoo Lee[1], Jun Lee[1]

1. Railroad and Mobility Policy Research Department, Korea Railroad Research Institute

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P00114 **Development and Feasibility Assessment of the Jeju Urban Rail Network for Sustainable Mobility and Regional Revitalization**

▸ Jun Lee[1*], Jinhong Min[1], Hyunwoo Lee[1], Sunghoon Lee[1]

1. Railroad and Mobility Policy Research Department, Korea Railroad Research Institute

P00115 **Recommendations for Social Benefits Applicable to Railway Underground Relocation Projects**

▸ Chanwoon. Park[1*], Subin. Sim[1], Jihwan. Hwang[2]

1. Public Investment Management Center, Incheon Institute

2. Graduate School of Environmental Studies, Seoul National University

Oral Session #2

October 29 (Wed.) 15:20~17:20 | Crystal Hall B (2F)
Session Chair : Jin-Tae Kim (Korea National University of Transportation)

P00007 **Driving Comfort Evaluation in Spiral Tunnels: An Integrated Human–Vehicle–Road–Environment Framework Combining Machine Learning and Quantitative Analysis**

▸ Min Deng, Xuejian Kang[*], Yizhao Wang, Mingyang Li

School of Traffic and Transportation, Shijiazhuang Tiedao University, Shijiazhuang, China

P00008 **Design Requirements for a Web-Based Platform for Simulating and Testing Traffic Signal Control Systems**

▸ Jo Jae Ho[1], Kim Jin Tae[2*]

1. Dept. of Transportation Policy and System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

P00009 **Urban Mobility Strategies in Local Governance: The Station Area of Cheonan as a Case**

▸ Jae Hyung Lee[1], Jin Tae Kim[2*]

1. Dept. of Transportation Policy and System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

Technical Program

P00025	**A Study on Performance Analysis Between Un-conventional and Conventional Actuated Signal Control** ▸ Khaqan Ahmed[1], Jin Tae Kim[2*] 1. Dept. Aftersales Quality Program Engineer at BYD Europe, BK Schiedam, Netherlands 2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
P00026	**Operational Strategy for Signalized Intersections along Tram Corridors** ▸ Sarang Jokio[1], Jin-Tae Kim[2*] 1. Chalmers University of Technology, Gothenburg, Sweden 2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
P00027	**Methodology for Collision Risk Prediction and Detection of Mobile Equipment in Port Terminals** ▸ Shahid Hussain[1], Jin-Tae Kim[2*] 1. University of Oulu, FI-90014, Oulu 90570, Finland 2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea
P00028	**Comprehensive Evaluation of Autonomous Shuttle Bus Service in Busan's Osiria Tourism Complex: Effects on Public Transit Accessibility in Station Areas** ▸ Tae Gun Lee[1], Jin Tae Kim[2*] 1. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea 2. Dept. of Transportation System Eng., Korea National Univ. of Transportation, Uiwang, Republic of Korea

SS: Development of Train Traffic Management Technology in Korea

October 29 (Wed.) 15:20~17:20 | Jade Hall A (2F)

Session Chair : Hag Lae Rho (Korea Railroad Research Institute)

P00073	**On-line integration test between conflict resolution module and microscopic multi-train simulation module** ▸ H. L. Rho[1*], T. H. Lee[1], J. H. Yun[1], K. M. Kim[2] 1. Korea Railroad Research Institute, Uiwang, Korea 2. Myongji University, Yongin, Korea
P00075	**Establishment of the Second Railway Traffic Control Center: Project Overview and Technical Features** ▸ Hocheol Choo[1] 1. DAEATI Co.,Ltd., Bucheon, Korea

SS: Energy efficiency technology for railway power supply systems

October 29 (Wed.) 15:20~17:20 | Jade Hall B (2F)

Session Chair : Seung Kwon Shin (Korea Railroad Reserch Institute)

P00077

Evaluation Method of Energy Use Efficiency of Hub Railway Stations

▸ Seungkwon Shin[1*], Seungho Ahn[2], Gukhyun Son[3], Taehwan Kim[3]

1. Electrical & Signaling Division, KRRI, Uiwang-si, South Korea

2. EAN Technology, Seoul, South Korea, 3SR Co. Ltd, Seoul, South Korea

P00078

Development of an FMU model for real-time HVAC load prediction to support optimal renewable energy supply

▸ Jungah Lee[1], Seungkwon Shin[2*]

1. EAN Technology, Seoul, Korea

2. Electrical & Signaling Division, KRRI, Uiwang-si, Korea

P00080

On-site Deployment of Railway Station Energy Management System with External Energy Sources

▸ Sumin Hong[1], Jongyoung Park[2], Seungkwon Shin[2*]

1. Raon Friends Inc., Anyang-si, South Korea

2. Electrical & Signaling Division, KRRI, Uiwang-si, South Korea

P00081

Operational Characteristics of Regenerative Inverters in DC Railway Systems with simulation and case study

▸ Hosung Jung[1], Jaewon Kim[1], Hwan-Hee Cho[1], Hanmin Lee[1] , Seungkwon Shin[1]

1. Korea railroad Rsearch Institute

P00082

The electric energy pricing and electric efficiency for railway systems

▸ Hyungchul Kim[1], Seungkwon Shin[1], Min-Sup Song[1], Hosung Jung[1]

1. Korea railroad Rsearch Institute

P00083

Renewable energy and energy storage optimisation for railway traction power supply decarbonisation

▸ Zhongbei, Tian[1], Seungkwon Shin[2*]

1. Birmingham Electrical Power & Control Systems Group, University of Birmingham, UK

2. Electrical & Signaling Division, KRRI, Uiwang-si, Korea

Technical Program

SS: Railway DCP(Derailmen Containment Provision) Technolgy

October 29 (Wed.) 15:20~17:20 | Amethyst Hall (2F)

Session Chair : Yun Suk Kang (Korea Railroad Reserch Institute)

P00069	**Voronoi-Based Clumping for Fast and Faithful DEM Impact Simulation of Ballast** ▸ J. Song[1], N. Lim[2], S. Kim[1*] 1. School of Civil, Environmental, and Architectural Engineering, Korea University, Seoul 02841, Korea 2. Department of Civil Engineering, Chungnam National University, Daejoen 34134, Korea
P00076	**Standardization Strategy for Maintenance Manuals of Derailment Containment Provision (DCP)** ▸ Woo Jin Han[1], Chang Young Lee[2] 1. Senior Researcher, R&D Center, ESCORTS.,Ltd, Korea 2. The head of a research institute, R&D Center ESCORTS.,Ltd, Korea
P00079	**Structural Performance of Reinforced Concrete Derailment Containment Provisions under Quasi-Static Loading** ▸ Luong N. Nguyen[1], Hoe-Jin Kim[2], Nam-Hyoung Lim[3], Yun-Suk Kang[4]J, Jung J. Kim[1*] 1. Department of Civil Engineering, Kyungnam University, Changwon-si 51767, Korea 2. UB E&C, Seongnam, Korea 3. Department of Civil Engineering, Chungnam National University, Daejeon, Korea
P00084	**Performance Evaluation of Derailment Containment Provision (DCP) for Ballast Track** ▸ Kang Yun Suk[*1], Bang Choon Seok[2], Kim Tae Hoon[2] 1. Korea Railroad Research Institute, Advanced Railroad Civil Engineering Division, Principal Researcher, Korea 2. Korea Railroad Research Institute, Advanced Railroad Civil Engineering Division, Senior Researcher, Korea
P00094	**Analytical Evaluation of the Impact Resistance of Train Derailment Barriers** ▸ DongHwi Im[1], Daehyeok Kim[2], HanBi Kim[1], BeomYeon Cho[1]. Jin Hwang[2], NamHyoung Lim[1*] 1. Department of Civil Engineering, Chungnam National University, Daejeon, Korea 2. Chungnam Railway Research Institute, Chungnam National University, Daejeon, Korea
P00106	**Impact test and simulation of concrete derailment containment wall with polyurea** ▸ Kwangsoo Youm[1], Jiho Moon[2*] 1. GS Construction & Engineering, 33 Jong-ro, Jongno-gu, Seoul 03159, Korea 2. Department of Civil Engineering, Kangwon National University, Chuncheon 24341, Korea

Oral Session #3

October 29 (Wed.) 15:20~17:00 | Ruby Hall (2F)
Session Chair : Juhee Choi (Sangmyung University)

P00004

Potential Freight Transport Routes for Modal Shift from Road to Rail in Mexico

▸ R. Zarate Flores

Department of Railway Operations and Infrastructure, Technische Universität Berlin, Germany

P00005

Visual Milestone Determination for Autonomous Railway Operation

▸ Josh Hunter[1], John McDermid[1], Simon Burton[1], Poppy Fynes[2], Mia Dempster[3]

1. Centre for Assuring Autonomy, York, United Kingdom

2. SAINTS Centre for Doctoral Training, York, United Kingdom

3. Leeds Law School, Leeds, United Kingdom

P00029

Algorithmic Design for Moving Block Signaling in Modern CBTC and ETCS Level 3 Systems

▸ Naorem Hemlet Singh[1*] and Vipin Chandra Dobhal[2]

1. Member Research Staff, Bharat Electronics Limited.

2. Member Senior Research Staff, Bharat Electronics Limited.

P00030

Train Performance Simulation for Railway Infrastructure Planning and Operation Strategy

▸ Jong-Pil Nam[1*], Sang-Hyeon Kim[2]

1. Department of Systems Engineering, DNV Business Assurance Korea Ltd., Seoul, Korea

2. Department of Systems Engineering, DNV Business Assurance Korea Ltd., Seoul, Korea

P00203

A Study on Machine Learning-Based Control Methods for Energy Efficiency Optimization of Autonomous Trams Based on Simulation

▸ Y.H.Han[1]

1. Department of Signaling Research Team, Hyundai Rotem, Korea

Technical Program

Oral Session #4

October 29 (Wed.) 15:20~16:20 | Sapphire Hall (2F)

Session Chair : Jeong Ryol Shin (Korea Railroad Research Institute)

P00006

Design Framework and Configuration for Railway Line Location using Multi-Touch Interaction

▸ Liangtao Nie[1,2], Aojun Zou[1], Mingjing Fang[3*], Xuejian Kang[1]

1. School of Traffic and Transportation, Shijiazhuang Tiedao University, Shijiazhuang 050043, China

2. Hebei Key Laboratory of Traffic Safety and Control, Shijiazhuang 050043, China

3. School of Civil Engineering and Architecture, Wuhan University of Technology, Wuhan 430070, China

P00024

Displacement Estimation of Railway Bridges Using Accelerometer and FMCW Millimeter Wave Radar

▸ H. Sohn[1,2*], J. Lee[1], S. II[2], S. Lee[2], T. Lee[2], J. Lee[2], S. Song[3], G. Chai[3]

1. Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea

2. Innovative Railway Research Institute, Korea National Railway, Daejeon, Korea

3. AP Technologies Inc, Seoul, Korea

P00043

A Fuzzy-based Risk Assessment Model for Overseas Railway Projects - Focusing on Ulaanbaatar Metro Project In Mongolia

▸ Chang-Nam KO, Dong-joo Park[*]

PhD Candidate, Department of Transportation Engineering, University of Seoul, Seoul, Korea

Professor, Department of Transportation Engineering, Graduate School of University of Seoul, Korea

Oral Session - Video

October 29 (Wed.) 17:00~18:00 | Convention Hall A (1F)

Session Chair : Jeong Won Kang (Korea National University of Transportation)

P00035

Voice Biometric Authentication using AI: A Comparative Study of Neural Network Robustness to Noise and Spoofing

▸ Oralbek Bayazov[1], Assel Mukasheva[1,*], Jeong Won Kang[2,*]

1. School of Information Technology and Engineering, KBTU, Almaty, Kazakhstan

2. Korea National University of Transportation, Korea

P00065	**Rail Transport Energy in Kazakhstan: A Strategic Vector in the Era of Green Transformation** ▸ Zhanna Suimenbayeva[1], Jeong Won Kang[2,*] 1. Academy of Logistics and Transpiration, Almaty, Kazakhstan 2. Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea
P00072	**Secure and Scalable IoT: An IoT Network Platform Based on Network Overlay and MAC** ▸ Jun Won Lee Samsung SDS, Korea
P00101	**A Study on the Causes of Train Accidents & Analysis of Train Derailment** ▸ JinHo Lee Department of Smart Railroad Transportation Engineering, Korea National University of Transportation, Korea

Oral Session #5

October 30 (Thu.) 09:00~10:00 | Jade Hall B (2F)
Session Chair : Chul Su Kim (Korea National University of Transportation)

P00055	**Deep Neural Network Approach for Steady-State Prediction of Voltage Conversion Unit** ▸ Jun-Won Kim[1], Kyung-Sik Kim[2], Chul-Su Kim[3*] 1. Department of AI Transportation Convergence, Korea National University of Transportation, Uiwang, Korea 2. Department of Transportation Systems Engineering, Korea National University of Transportation, Uiwang, Korea 3. Department of Railway Vehicle System Engineering, Korea National University of Transportation, Uiwang, Korea
P00056	**Development of an AI-based predictive maintenance system for Main Air Compressor Starting Box** ▸ Jung-Tae Kim[1], Chul-Su Kim[2*] 1. Department of AI Transportation Convergence, Korea National University of Transportation, Uiwang, Korea 2. Department of Railway Vehicle System Engineering, Korea National University of Transportation, Uiwang, Korea

Technical Program

P00060	**A Study on the Multibody Dynamics Analysis of Urban Rail Vehicle Doors** ▸ Kyung-Sik Kim[1], Jun-Won Kim[2], Chul-Su Kim[*] 1. Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea 2. Department of AI and Transportation Convergence Korea National University of Transportation, Uiwang, Korea 3. Department of Railway Vehicle Systems Engineering, Korea National University of Transportation, Uiwang, Korea
P00061	**A Study on Diagnosis of Major Electric Train Components using TCMS and Machine Learning** ▸ Youngtaek Kim[1], B. Chul-Su Kim[2] 1. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea 2. Department of Railway Vehicle System Engineering, Korea National University of Transportation, Uiwang, Korea.

SS: Next-Generation Power Electronics and Control Technologies

October 30 (Thu.) 10:00~12:00 | Jade Hall A (2F)
Session Chair : Hag Wone Kim (Korea National University of Transportation)

P00085	**Study on Application of Active Cell Balancing in Large-Scale Lithium-Ion Battery Packs** ▸ Seok-Jin Na[1], In-Ho Cho[1*] 1. Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea
P00088	**Voltage Distortion Mitigation in a 3-Phase Inverter for Auxiliary Power Units of Electric Locomotives Using abc-Frame Current Feed-forward Compensation and Proportional-Resonant Control** ▸ Jae-Ha Hwang[1], Hyeong-Jin Lee[2], Hag-Wone Kim[*] 1. Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea 2. Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea 3. Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea
P00092	**Development of a solid-state transformer for distributed power high-speed railway vehicle** ▸ S.H Song[*] Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea
P00110	**Sensorless Control of dual three-Phase PMSMs via Voltage Injection and VSD-Based Torque Ripple Mitigation** ▸ A. Seong hoon Kim, B. Kwan Yuhl Cho[*], C. Hag Wone Kim[*] Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea

SS: Strategy for overseas export of Electric locomotives

October 30 (Thu.) 10:00~12:00 | Jade Hall B (2F)
Session Chair : Seung-Tae, Ha (TÜV SÜD Korea)

P00086

The TSI in European vehicle authorization process
▸ S.W. Son[1], S.T. Ha[1], E.C. Kim[1]

1. RI RLS division, TUV SUD Korea, Seoul, Korea

P00093

The Common Safety Method process on the TSI in European Union
▸ E.C. Kim[1], S.T. Ha[1], S.W. Son[1]

1. RI RLS division, TUV SUD Korea, Seoul, Korea

P00096

Introduction of TSI/CCS Requirements in European Railway
▸ J. Ryu[1], S.T. Ha[1], E.C. Kim[1]

1. RI RTS division, TUV SUD Korea, Seoul, Korea

P00103

The Interrelation of system life cycle
▸ D.W. Jung[1], S.T. Ha[1], E.C. Kim[1]

1. RI RLS division, TUV SUD Korea, Seoul, Korea

SS: Redesigning Transit Networks for More Freedom and Access to Opportunity

October 30 (Thu.) 10:00~12:00 | Sapphire Hall (2F)
Session Chair : Jaehong MIN (Korea Railroad Research Institute)

P00204

Redesigning Transit Networks for More Freedom and Access to Opportunity
▸ M. Poyourow[1]

1. Principal Consultant of Jarrett Walker + Associates, Portland, OR, USA

P00205

Enhancing Bus Operation Efficiency by Travel Record Data
▸ J. MIN[1]

1. Chief Researcher of Korea Railroad Research Institute, Gyeonggido, KOREA

Technical Program

SS: Predict, Carbon Management with Digital Asset Management with IBM Maximo

October 30 (Thu.) 14:00~15:00 | Sapphire Hall (2F)

Session Chair : Paul Jungsun, Park (IBM Korea)

P00109

Asset Management digitalization with IBM Maximo

▸ A. Paul Jungsun, Park[1], B. Andy Bae[2]

1. Asset Lifecycle Management, IBM Korea, Seoul, Korea

2. Consulting department, VisionIC Inc, Seoul, Korea

Poster Session

October 29 (Wed.) 17:00~18:00 | Lobby (2F)

Session Chair : Seogjung (Jerome) Choi (Korea Railroad Corporation), Juhee Choi (Sangmyung University)

P00010

Deep Learning Model Comparison Study on Temperature Control in Electric Facilities

▸ Junoh Kim, Jeong Won Kang[*]

Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea

P00011

Web Based Boarding and Alighting Verification System for Safety Personnel on Driverless Trains

▸ Seung Yong Won[1], Jeong Won Kang[1,*]

1. Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea

P00012

Development of Deep Learning Color Recognition Model for Color Measurement Processes

▸ Bo Sung Kim, Donguk Kim, Jeong Won Kang[*]

Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea

P00013

Analysis Safety Surveillance in Urban Rail Cars Using 5GHz Wi-Fi Video Transmission Systems

▸ Hyunjo Ahn, Jonghak Park, Ookhyeon Ku, Chanhee Weon, Jeong Won Kang[*]

Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00014

A Study on Urban Railway Operation using Train Performance Simulator

▸ Ho Hyun Han, Sokwoo Lim[2], Jeong Won Kang[2,*]

Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00015

A Study on Stabilization of Code Frequency Control between Wayside and Onboard Signal System of AF Non-insulated Track

▸ Junho Kim, Seon-Kyu Kim, Byungil Oh, Jeong Won Kang[*]

Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00016

Comparative Analysis of the Predictive Risk Assessment Modeling Technique using Artificial Intelligence

▸ Anel Tolkynbekova[1], Alibek Bissembayev[1], Assel Mukasheva[1], Seungmin Cha[2], Jeong Won Kang[2,*]

1. School of Information Technology and Engineering, Kazakh-British Technical University, Almaty, Kazakhstan
2. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00017

Development of a Mobile App-Integrated Smart Power Shutdown and Restoration System for Railway Traffic Control Innovation

▸ Haesan Park[1], Jeong Won Kang[1,*]

1. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00018

Analysis of Global and Domestic Trends in Autonomous Train Technology and Its Future Applications

▸ Mingyu Lee[1], Jaemoon Kim[1], Jeong Won Kang[1,*]

1. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00019

A study on Train Position Display in CBTC System

▸ Wook Jin Hwang[1], Jeong Won Kang[1,*]

1. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

Technical Program

P00020

A Study on the Optimization Efficiency of Software Development with Low-Code Platforms

▸ Erdana Seitzhan[1], Alibek Bissembayev[1], Assel Mukasheva[1], Seonkyo Kim[2], Hae San Park[2], Jeong Won Kang[2,*]

1. School of Information Technology and Engineering, Kazakh-British Technical University, Almaty, Kazakhstan
2. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00021

A Study on Integrated Operation of VHF and Complex Communication Facilities for Railway

▸ Jonghee Lee, Seon-Kyo Kim, Haram Kim, Jonghak Park, Donghoon Park, Jeong Won Kang[*]

Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00022

Comparative and predictive analysis of Kazakhstan's sectoral international trade

▸ Yermakhan Kuanyshbekov[1], Alibek Bissembayev[1], Assel Mukasheva[1], Jonghee Kim[2], Jeong Won Kang[2,*]

1. School of Information Technology and Engineering, Kazakh-British Technical University, Almaty, Kazakhstan
2. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00023

A Study on the Power System Protection System due to Regenerative Braking of Urban Railway Vehicles

▸ Jonghak Park, Sungcheol Han, Sanghoon Sun, Jeong Won Kang[*]

Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00031

AI model predicting perceptible vibrations caused by vibrations generated by high-speed operation of subway through urban areas

▸ J. Kim[1*], J. Won[2]

1. Department of System Safety Research, Korea Railroad Research Institute, Korea
2. Department of Artificial Intelligence Railroad Research, Korea Railroad Research Institute, Korea
3. Department of Railroad Operation Systems Engineering, GHI University, Korea

P00032

Probabilistic Life Cycle Cost Evaluation of the Electrification of the TMGR Railway Line in Mongolia

▸ D. Batbold[1], C. Yong Eun[1], S. Chi Won[1], P. Sang Nyeong[1], K. Jae Moon[1*]

1. Department of Transportation Systems Engineering, Korea National University of Transportation, Gyeonggi-do, Republic of Korea

P00042

Loss Reduction Effect and Efficiency Analysis of Synchronous Rectification Using SiC MOSFETs in a Vienna Rectifier

▸ A. Gun Heum Cho[1], B. Hae In Kim[1], C. Hyeok Jin Lee[1], D. Hag Wone Kim[*]

1. Electronic Engineering, Korea National University of Transportation, Chungju, Korea

P00044

Comparative Analysis of Digital Conversion Methods for SOGI–PLL in Vienna Rectifiers for Water Electrolysis Systems

▸ A. Hyeok Jin Lee[1], B. Hae In Kim[1], C. Gun Heum Cho[1], D. Hag Wone Kim[*]

1. Electronic Engineering, Korea National University of Transportation, Chungju, Korea

P00045

A Study on the Safety Enhancement of PSD–Train Communication Interface Based on SIL and RAMS Requirements

▸ Sang-Nyeong Park[1], Yong-Eun Choi[1], Ki-Ho Jeong[1], Chi-Won Sung[1], Jae-Moon Kim[1*]

1. Department of Transportation Systems Engineering, Korea National University of Transportation, gyeonggi-do, Korea

P00046

A Study on Anchor Design and Seismic Evaluation of Rigid-Type Cable Tray Support Structures

▸ Jong-Nam Kim[1], Yong-Eun Choi[1], Sang-Nyeong Park[1], Chi-Won Sung[1], Jae-Moon Kim[1*]

1. Department of Transportation Systems Engineering, Korea National University of Transportation, gyeonggi-do, Korea

P00047

A Study on Anchor Safety According to Displacement Characteristics of Non-Rigid Type Cable Tray Systems

▸ Yong-Eun Choi[1], Jong-Nam Kim[1], Sang-Nyeong Park[1], Chi-Won Sung[1], Chin-Young Chang[1], Jae-Moon Kim[1*]

1. Department of Transportation Systems Engineering, Korea National University of Transportation, gyeonggi-do, Korea

Technical Program

P00048

A Maintenance Approach to Enhance the Efficient Management of Power-car Wheelsets for High-Speed Rolling Stock

▸ Kyungsuk. Kim[1], Kyungsik. Kim[1], Seog-jung. Choi[2], Chul-su. Kim[*]

1. Graduate School of Transportation, Korea National University of Transportation, Korea

2. Metropolitan Rolling Stock Maintenance Depot, KORAIL, Korea

* Department of Railway Vehicle System Engineering, Korea National University of Transportation, Korea

P00049

Fine-Grained Railway Image Segmentation Combining Local Details and Global Context

▸ Xufeng Hu[1], Changjoon Park[1], Namjung Kim[1], Junhwi Park[1], Jaehyun Lee[2], Jeong Won Kang[3], Jeonghwan Gwak[4*]

1. Department of IT·Energy Convergence, Korea National University of Transportation, Chungju, Korea

2. Department of Software, Korea National University of Transportation, Chungju, Korea

3. Department of Transportation System Engineering, Korea National University of Transportation, Chungju, Korea

4. Department of Computer Science, Korea National University of Transportation, Chungju, Korea

P00050

Impact of Prompt Variations on CLIP-based Railway Trespassing Recognition on RailGoerl24 Dataset

▸ Namjung Kim[1], Changjoon Park[1], Junhwi Park[1], Jaehyun Lee[2], Xufeng Hu[1], Jeong Won Kang[3], Jeonghwan Gwak[4*]

1. Department of IT·Energy Convergence, Korea National University of Transportation, Chungju, Korea

2. Department of Software, Korea National University of Transportation, Chungju, Korea

3. Department of Transportation System Engineering, Korea National University of Transportation, Chungju, Korea

4. Department of Computer Science, Korea National University of Transportation, Chungju, Korea

P00051

Performance Analysis of Road Defect Classification According to Hybrid Vision Transformer Architectures for Optimal Road Defect Detection Model Design

▸ Junhwi Park[1], Namjung Kim[1], Changjoon Park[1], Xufeng Hu[1], Jaehyun Lee[2], Jeong Won Kang[3], Jeonghwan Gwak[4*]

1. Department of IT·Energy Convergence, Korea National University of Transportation, Chungju, Korea

2. Department of Software, Korea National University of Transportation, Chungju, Korea

3. Department of Transportation System Engineering, Korea National University of Transportation, Chungju, Korea

4. Department of Computer Science, Korea National University of Transportation, Chungju, Korea

Technical Program

P00062

Analysis of the Causes of Abnormal Wheel Wear in High-Speed Vehicle Wheels and Investigation of Improvement Measures

▸ Seung-min. Cha[1], Hong-Hee. Lee[2], Chul-su. Kim[*]

1. Graduate School of Transportation, Korea National University of Transportation, Korea

2. High Speed Train Department, Head Quarter of Rolling Stock, KORAIL, Korea

* Department of Railway Vehicle System Engineering, Korea National University of Transportation, Korea

P00063

A study on energy saving measures according to the driver's operating patterns

▸ Dong-Uk Kim[1*], Chul-Su Kim[1]

1. Department of Railway Vehicle System Engineering, Korea National University of Transportation, Uiwang, Korea

P00064

A Study on AI and Digital Twin-Based Predictive Maintenance for High-Speed Railway Vehicle PCBs

▸ Byung-Il Oh[1*], Chul-Su Kim[1]

1. Department of Railway Vehicle System Engineering, Korea National University of Transportation, Uiwang, Korea

P00066

A Study on the Power System Protection Systems due to the Regenerative Braking of Urban Rail Vehicles

▸ Jonghak Park amd Jeong Won Kang[*]

Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea

P00067

Output Estimation of DCM Series Resonant Converter in Railway Vehicle Applications

▸ P.K Kim[1], S.H Song[*]

1. Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea

P00068

A Study on Output Estimation for Series-Parallel Resonant Converter in High-voltage Railway Application

▸ U.C. Mun, S.H. Song[*]

Department of Electronic Engineering, Korea National University of Transportation, Chungju, Korea

P00070

Energy-efficient and Thermal-aware system for Condition based Maintenance

▸ Juhee Choi[1*]

1. Department of Smart Information Communication Engineering, Sangmyung University, Cheonan, Korea

P00071

Multifaceted Analysis of Deployment and Applicability of Eco-friendly Technologies in Electric Railway

▸ Haesan Park[1], Bo Sung Kim[1], Jonghak Park[1], and Jeong Won Kang[1,*]

1. Department of SMART Railway System, Korea National University of Transportation, Uiwang, Korea

P00074

A Study on Real-Time Train Congestion Display System

▸ Seung Yong Won[1], Jeong Won Kang[1,*]

1. Department of Transportation System Engineering, Korea National University of Transportation, Uiwang, Korea

P00089

Potential Freight Transport Routes for Modal Shift from Road to Rail in Mexico

▸ Rafael Zarate Flores[1], Birgit Milius[1], David Camacho Alcocer[2]

1. Department of Railway Operations and Infrastructure, Technische Universität Berlin, Germany
2. Department of Railway Projects, EcoUrba, Mexico

P00201

Lattice Structure Application for Lightweight Hyperloop Carbody Design

▸ A. Jonghun Kim[1*]

1. Department of Carbody Development, Hyundai Rotem Company, Korea

P00202

Improvement of door corner design of aluminum vehicle

▸ A. Gun Park[1*], B. Kwangwoo Kim[2]

1. Department of Carbody Development, Hyundai Rotem Company, Korea
2. Department of Platform Development, Hyundai Rotem Company, Korea

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우진의 앞서가는 오늘이
우리의 더 청정한 내일을 만듭니다

창조적 혁신을 통한 최고의 기술력으로
대량인원 수송이 가능한 친환경 신교통수단을 만들고 있습니다.
한계를 뛰어넘는 무한한 가능성을 만드는 미래를
우진산전이 이끌어 가겠습니다.

40년 전기기술의 자부심,
대한민국의 불을 밝히다!

1983년 설립 이래 전기설계, 감리, 시공의 선두주자로서
GTX에서 인천대로까지 수많은 국가 핵심 프로젝트를 완성해왔습니다.
쌓아온 만큼의 신뢰와 실력
(주)신우디엔시가 국가발전에 언제나 함께하겠습니다.

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DNV CYBERSECURITY RISK MANAGEMENT

안전성, 규제 준수, 신뢰를
보장하는 전사적 사이버보안 관리

About us

DNV는 IEC 62443, ISO/SAE 21434, ISO/IEC 17020 및 17065 등 국제표준을 기반으로 사이버보안 인증 및 검사 서비스를 제공합니다.

산업제어시스템, 자동차 전자 시스템, 전산시스템 등 다양한 산업군에 대해 위험 평가, 적합성 인증, 검사 보고서 발행, 교육 및 코칭까지 전 주기를 포괄적으로 수행하며, 고객의 규정 준수 및 글로벌 시장 신뢰 확보를 지원합니다.

Our services

- Cyber Resilience Act (CRA)적합성 평가 및 인증
- IEC 62443기반 심사 및 교육
- ISO/SAE 21434기반 사이버보안 관리체계 (CSMS)갭분석, 인증 심사 및 교육
- 전산시스템 보안 감사 및 보고서 발행
- IEC 62443기반 사이버보안 평가 공인 인증 (KOLAS - ISO/IEC 17020)
- ISO/IEC 17065 (KOLAS)기반 철도 차량, 제어·명령·신호 (CCS)시스템의 기술 사양 (TSI)준수 평가, 철도 하위 시스템 등 적합성 평가 및 인증

건설의 한계를 넘어선

Life Value Creator

경계없는 생각이 한계없는 미래를 만듭니다.

TAEYOUNG

태영건설

주택사업
고객을 생각하는 데시앙의 디자인으로
앞선 주거문화를 선도하다

개발사업
주거,상업,업무시설 및 도시에 이르기까지
새로운 라이프스타일을 창조하다

레저사업
종합리조트부터 레이싱 서킷까지
국내 레저문화의 가치를 높이다

건축사업
앞선 설계와 첨단 시공능력으로
건축미학과 가치를 창조하다

물사업
독보적인 수처리 기술로
친환경 미래를 만들다

환경/플랜트사업
뛰어난 역량과 앞선 기술력으로
최고의 실적을 보유하다

토목사업
탁월한 기술력과 노하우로
국가 기간산업 발전에 기여하다

※본 홍보물에 사용된 CG 및 이미지컷은 소비자의 이해를 돕기 위해 넣은 것으로 실제와는 다를 수 있습니다.

Life Value Creator
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Design, Detail, **DESIAN**

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