

The 8th Asia and Pacific Young Researchers
and Graduates Symposium

YRGS2017



7-8 September 2017
The University of Tokyo, JAPAN



IIS UTOKYO SYMPOSIUM NO.93



Asian Concrete Federation



Japan Society for Civil Engineers



戦略的イノベーション
創造プログラム
Cross-ministerial Strategic
Innovation Promotion Program

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Yoshikazu Kobayashi (Nihon University, Japan)

Program

7 th September, Thursday		
9:00 – 9:30	Registration	
9:30 – 9:45	Opening Ceremony	
9:45 – 11:45	<u>Keynote Lecture 1</u> Professor Koichi MAEKAWA (The University of Tokyo, Japan) <i>Title: Lifetime Assessment of Concrete Bridges by Assimilating Inspection Data and Structural Analysis</i>	
	<u>Keynote Lecture 2</u> Professor Mitsuyoshi AKIYAMA (Waseda University, Tokyo, Japan) <i>Title: Life-cycle Performance Assessment of Civil Engineering System under Multiple Hazards</i>	
11:45 – 12:00	Group Photo	
12:00 – 13:15	Lunch	
13:15 – 15:00	Numerical Simulation and Modeling (1) (Convention Hall)	Structures (1) (Conference Room, 3F)
15:00 – 15:30	Break	
15:30 – 17:30	Materials (1) (Convention Hall)	Structures (2) (Conference Room, 3F)
18:30 – 20:30	Banquet	

8 th September, Friday		
9:15 – 11:30	Materials (2) (Convention Hall)	Structures (3) (Conference Room, 3F)
11:30 – 13:00	Lunch (Convention Hall)	
13:00 – 15:00	Numerical Simulation and Modeling (2) (Convention Hall)	Structures (4) (Conference Room, 3F)
15:00 – 15:30	Break	
15:30 – 16:30	<u>Keynote Lecture 3</u> Dr. Hiroshi DOBASHI (Metropolitan Expressway Company Limited, Japan) <i>Title: Development and Implementation of Innovative Infrastructure Management System "I-DREAMs"</i>	
16:30 – 17:00	Closing Ceremony	

Keynote Lecture

Lifetime assessment of Concrete Bridges by Assimilating Inspection Data and Structural Analysis

Koichi MAEKAWA

Professor

Department of Civil Engineering, The University of Tokyo



Professor Maekawa is a professor of Civil Engineering department, The University of Tokyo, Japan. He received his Bachelor Degree in 1980, Master's Degree 1982, and Doctor Degree in Civil Engineering in 1985 from The University of Tokyo. Professor Maekawa has more than 30 years of experience in reinforced concrete. His recent research interests include Multi-Scale modeling of concrete structures, mass transport in cementitious porous, and fatigue life assessment of reinforced concrete bridges. Professor Maekawa has many academic & social activities, for instance, he is the chairman of JSCE Concrete Committee, vice chairman of JCI Technical Steering Committee, vice chairman of Bridge Engineering Committee of Tokyo Metropolis Highway, and board member in International Press-in Association. Currently, professor Maekawa is serving as a distinguished professor, at Graduate School of Engineering, Civil Engineering department, University of Tokyo, professor at Yokohama National University (YNU), distinguished adjunct professor at Asian Institute of Technology, and Tan Swan Beng Endowed Professor at Nanyang Technological University in Singapore.

Keynote Lecture

Life-cycle Performance Assessment of Civil Engineering System under Multiple Hazards

Mitsuyoshi AKIYAMA

Professor

Civil and Environmental Engineering, Waseda University, Japan



Professor Akiyama is a professor of Civil and Environmental Engineering, Waseda University, he received his Bachelor Degree in 1995, Master's Degree, and Doctor Degree in 2001 in Civil Engineering from Tohoku University, Japan. Professor Akiyama has almost 20 years of experience within concrete structures; his recent research area is assessment of concrete structures. Professor Akiyama is a member in many professional associations such as JSCE, ASCE, JAEE, and JCI. Professor Akiyama has a many scientific community service activity; he is associate editor of Structure and Infrastructure Engineering, Taylor & Francis, UK, editorial board member of International Journal of Earthquake and Impact Engineering, chair of task group 1 in SEI-ASCE Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems, Co-Chair of Symposium 2014 on Life-Cycle Civil Engineering (IALCCE2014). Currently, Professor Akiyama is serving as a professor in Waseda University.

Keynote Lecture

*Development and Implementation of Innovative Infrastructure
Management System " I-DREAMs "*

Hiroshi DOBASHI

Director

Maintenance and Traffic Management Department,
Metropolitan Expressway Company Limited, Tokyo, Japan



Dr Dobashi is the director of The Maintenance and Traffic Management Department Metropolitan Expressway Company Limited, Japan. Metropolitan Expressway Company Limited engages in the construction, renovation, maintenance, repair, post-disaster restoration, and other expressway management and coordination works in Japan. It is also involved in the new road construction, renovation, maintenance, repair, and other works on consignment from the national government, local governments, and other authorities. Dr Dobashi served as a visiting professor in Social Infrastructure Management division in ICUS (International Canter for Urban Safety Engineering), Institute of Industrial Science, The University of Tokyo, Japan. Dr Dobashi's recent research interests include performance of structures and facilities, prediction method in remaining life, risk management, maintenance technology and inspection techniques for existing tunnels.

7th September, Thursday

Session 1 (13:15-15:00): Numerical Simulation and Modeling (1)

Prediction of Cracking Effect on Water Penetration into Concrete

Licheng Wang and Jiuwen Bao

Investigation on Grout Injectability with Flow Simulation

Jin Young Yoon, Tae Yong Shin, and Jae Hong Kim

Analytical Investigation on Shear Resisting Mechanism of Reinforced Concrete Beams Damaged by Freeze-Thaw Action

Takeru Kanazawa and Yasuhiko Sato

Numerical and Experimental Evaluation of Bond-Slip Relationship of Corroded Rebar with Different Concrete Cover Thickness

Yizhou Yang, Hikaru Nakamura, Taito Miura, and Yoshihito Yamamoto

Modeling of Mechanical Behavior of Concrete with Frost Damage Based on 2D Rigid Body Spring Model

Zhao Wang, Dawei Zhang, Fuyuan Gong, and Tamon Ueda

Analysis of Spalling Behavior of Ring-Restrained High-Strength Concrete Specimens at Elevated Temperatures

Sirjana Subedi Parajuli, Mitsuo Ozawa, Robert Jansson McNamee, Toru Tanibe, and Kota Akashi

Rheological Analysis of Mortar Using a Linear Parallel Bond Model

Dong Jin Joeng, Jin Hyun Lee, and Jae Hong Kim

Modeling of Passive Confinement of Concrete Using Rigid Body Spring Model

Rodolfo Mendoza Jr., Yoshihito Yamamoto, Hikaru Nakamura, and Taito Miura

Session 2 (13:15-15:00): Structures (1)

The Automatic Monitoring of Transmission Tower as a Maintenance Inspection and Contingency Mechanism

Yu-Neng Hsiao

Experiments of Angle Welded Connections under Cyclic Loads

Aphinat Ashakul, Sora-aut Nimngamsri, and Vitoon Uthaisanguk

Measurement and Analysis of Behavior of the Existing Small Bridge due to Thermal Change

Ruiké Keishi, Kondo Naoki, Takahashi Akihiko, and Hiroshi Onishi

Identifying and Structuring Sustainability Indicators for Concrete Material Performance Criteria

Joel Opon and Michael Henry

Preliminary Field Survey of Deteriorated Concrete Structures in Tropical Conditions with Non-Destructive Methods - Case Study: Short Span Bridges in Bangkok, Thailand

Junya Sato, Shingo Asamoto, Pongsak Wiwatrojanagul, and Raktipong Sahamitmongkol

Vibration Measurement of Decks in a Short Span Road Bridge

Nobuhisa Kimura, Kohei Ouchi, Yoko Chiba, and Hiroshi Onishi

Static Behaviours of Existing Small-Scale Plate Girder Bridge Used for 40 Years

Yoko Chiba, Hiroshi Onishi, Shoji Iwasaki, and Kenshiro Sasaki

Session 3 (15:30-17.30): Materials (1)

Evaluating the Performance of High-Range Water-Reducing Admixtures through a Channel Flow Test

Jin Hyun Lee and Jae Hong Kim

Development of Sustainable Modified Geo-Polymer Mortar Using Industrial Waste

A.Siva, K.Balasubramanian, N.Kabilan, and S.Swaminathan

Fire Damage Assessment of Concrete Using Air Permeability

Haruka Akasaka, Mitsuo Ozawa, Yuki Sakoi, Kenta Tetsura, and Sirjana Subedi Parajuli

Understanding of Deformation of Crushed Concrete Particles under Confining Stress and Its Application for Recycling Technique

Yuya Sakai

Investigation of the Fresh Behavior and Physical and Mechanical Properties of EAF Slag Fine Aggregate Concrete

Sushanta Roy, Taito Miura, Hikaru Nakamura, and Yoshihito Yamamoto

Generalization of Viscosity Curve Measurement of Cement Paste

Byungil Choi and Jae Hong Kim

Study on Rheological Characteristics Based on Shape of Flow Velocity Distribution in Rotational Cylinder

Shunsei Tanaka, Shigeyuki Sato, and Toshiharu Kishi

Development of a Method for Evaluation of Fire-Related Spalling in High-Strength-Concrete Using Ring-Restraint Specimens

Satoru Yamamoto, Sirjana Subedi, Mitsuo Ozawa, and Toru Tanibe

Study of Influence of Dissolved Air in Mixing Water on Surface Quality of Concrete

Meta Tep and Toshiharu Kishi

Session 4 (15:30-17.30): Structures (2)

An Efficient Method for Estimating Small Failure Probabilities of Structures under Non-Stationary Seismic Excitations

Jun Xu and Chao Dang

Nonlinear Behaviour of Reinforced Concrete Structures Using Incremental Dynamic Analysis Considering Height Effects

Thanh-Tuan Tran, Thi-Huong Nguyen, Junhee Park, and Dookie Kim

Applications of Different Interpolated Curvatures on Structural Damage Localization

Jun-Yang Shi

Seismic Performance Evaluation of High-Rise Building with Core Wall System Using Nonlinear Dynamic Analysis

Seung Yong Jeong and Thomas Kang

Shaking Table Test of RC Columns with Sliding Pendulum System

Benjamin Brito, Tetsuta Seto, Yoshitaka Ichikawa, Naomitsu Ishigaki, Masashi Suezaki, and Mitsuyoshi Akiyama

Performance-Based Evaluation of Response Reduction Factor for Plan Asymmetric Building Using Non-Linear Analysis

Rudhra Halder, Trissa Deb, and Sandeep Chaudhary

Vibration Control of Jacket Offshore Wind Turbine Subjected to Earthquake Excitations by Using Friction Damper

Le Minh Luong, Nguyen Van Dong, Faria Sharmin, and Kim Dookie

Using Electromagnetic Shunt Dampers to Emulate Various Mechanical Dampers

Songye Zhu and Jin-Yang Li

Failure Modes of RC Buildings due to Irregular Placement of Infills

Putul Haldar and Yogendra Singh

8th September 2017, Friday

Session 5 (09:15-11:30): Materials (2)

Estimating Rheological Properties of Cement Mortar Using the Flow Table Test

Tae Yong Shin, Jae Hong Kim, and Jin Hyun Lee

Influence of Segregation of Fresh Concrete due to Vibration on Concrete Air-Permeability

Kazuaki Nishimura, Yoshitaka Kato, and Kohei Eguchi

Non-Destructive Evaluation of the Performance Recovery of Fire-Damaged Mortar under Water Curing

Michael Henry

Study on the Effect of Moisture State in Concrete on the Behaviour of Chloride Ingress

Tomohisa Kamada and Toshiharu Kishi

Effects of Electrical Repulsion by Various Ions and Deterioration of Cement Composites on Chloride Ions Penetration

Satoko Naomachi, Yoshitaka Kato, and Kohei Eguchi

Rheological Properties of Mortar under a High Pressure using the Viscosity Curve for Evaluating the Pumpability

Seong Ho Han and Jae Hong Kim

Study on Measurement Method of Depth of Alkalinity Reduction by Using Concrete Powder

Kohei Eguchi and Yoshitaka Kato

Prediction Model of Electrical Resistivity of Concrete Considering Mix Proportion and Moisture Content

Su Wai Hnin, Pakawat Sanchaoren, and Somnuk Tangtermsirikul

Proposal for Evaluating the Curing Effect of Concrete with Various Curing Methods Using Electrical Resistance

Takehiro Misaka and Takeshi Iyoda

Study for Effect of Surface Impregnant Applying for Deteriorated Concrete

Hiromu Sueki and Takeshi Iyoda

Session 6 (09:15-11:30): Structures (3)

Study on Corrosion of RC Slab with Partial Replacement of Cement as Fly Ash Using Nondestructive Testing Method

Sristi Das Gupta and Takafumi Sugiyama

Applicability of Recycled-Nylon Fiber Polymer Cement Mortar to the Section Repair of Deteriorated RC Beams

Shanya Orasutthikul, Daiki Unno, and Hiroshi Yokota

Flexural Behaviour of Post-Tensioned Prestressed Concrete Bridges Having Locally Deteriorated Tendons

Mai Nguyen T, Hiroshi Mutsuyoshi, and Isuru Sanjaya Kumara Wijayawardane

Effect of Spatial Variability Associated with Steel Corrosion on the Reliability of Corroded RC Beams

Sopokhem Lim, Huijuan Song, Lei Nie, and Mitsuyoshi Akiyama

Tensile Behaviour of Corroded Steel Rebar Based on 3D Scanning

Kong HT, Sun XY, and Wang HL

Parameters Affecting Performance of Galvanic Cathodic Protection for Steel Bar in Concrete

Wikarin Sorntom, Tanyaporn Komvijit, and Raktipong Sahamitmongkol

Effect of Severely Locally Corroded Shear Reinforcement on Load Carrying Capacity of RC Beams

Rahmat Ullah, Kento Shinya, and Hiroshi Yokota

Performance Assessment of Shield Segments under Coupling Effects of Environmental Agent and Loading

Zhengshu He, Sijin Liu, Chuan He, and Mitsuyoshi Akiyama

Effects of Simultaneous Sustained Loading and Steel Corrosion on the Cracking Propagation of RC Beams

Jianfeng Dong, Yuxi Zhao, Kun Wang, and Weiliang Jin

Earthquake Response of Low-Rise RC Moment Frame Structures According to Energy Dissipation Ratio of Beam-Column Joints

Keyi Jiang, Hyeon-Jong Hwang, and Wei Jian

Session 7 (13:00-15:00): Numerical Simulation and Modeling (2)

Compressive Fatigue Model for Mortar with Blast Furnace Slag Fine Aggregates in Air and Water

Muhammad Aboubakar Farooq, Yasuhiko Sato, Toshiki Ayano, and Kyoji Niitani

Seismic Fragility Analysis of a Shallow Single-Box Tunnel

Duy-Duan Nguyen, Tae-Hyung Lee, and Duhee Park

Parametrical Study on Fatigue Life of Road Bridge Decks with Pseudo-Cracking Analysis

Eissa Fathalla, Yasushi Tanaka, and Koichi Maekawa

Nonlinear Finite Element Analysis of Unbonded Post-Tensioned Concrete Members

Hyeongyeop Shin and Thomas Kang

FE-Analysis of SFRC Beams Using the X-ray Images

Ramiz Ahmed Raju, Sopokhem Lim, Mitsuhiro Matsuda, and Mitsuyoshi Akiyama

Thermal Transient Analysis of the Bhumibol Dam Considering Effects of Solar Radiation and Variation of Reservoir Water Temperature

Kiet Anh Bui, Pakawat Sanchaoren, Ganchai Tanapornraweekit, and Somnuk Tangtermsirikul

The Analytical Investigation of Size Effect of Expansion Cracking Behaviour of Mortar Damaged by External Sulfate Attack

Taito Miura, Yoshihito Yamamoto, and Hikaru Nakamura

Enhanced Energy Dissipative Performance of Composite Shear Wall for Pre-Fabricated Structures: Concept and Numerical Analysis

Limeng Zhu, Chunwei Zhang, and Hongmei Xiao

Theoretical Modelling of FRP-to-Concrete Adhesive Joints Subjected to Cyclic Actions

Enzo Martinelli and Antonio Caggiano

Session 8 (13:00-15:00): Structures (4)

Seismic Behaviour of Beam-to-Column Joints Considering the Slab Effect: Experimental Investigation

Ben Mou, Lingling Wang, Chunwei Zhang, and Yanhui Gu

Ultimate Strength Behaviour of Multi-Span Beams Prestressed with High Strength of 2400 MPa Unbonded Tendons

Kyungmin Kim, Ah Sir Cho, Jun-Mo Yang, and Thomas H.-K. Kang

Shear Bond Behaviour of Elemental Composite Beams with Different Configurations

Saddam M Ahmed, A.Siva, R.Senthil, and Chunwei Zhang

Basic Study on the Bond Stress between AFRP and Concrete

Iwane Sotaro, Onishi Hiroshi, Amano Norihiro, Matsubara Sumiyuki, Kudo Takahiro, and Kashiwa Shogo

Compressive Behaviour of PET FRP-Confined Non-Circular RC Columns

Shahzad Saleem and Amorn Pimanmas

Bending Strength of Wooden-Steel Composite Beams Using Steel Nails and Self-Tapping Screws Connection

Truong-Di-Ha Le and Meng-Ting Tsai

Flexural Behaviour of Precast Geopolymer Concrete Sandwich Panels Enabled with FRP Connectors

Jun-Qi Huang and Jian-Guo Dai

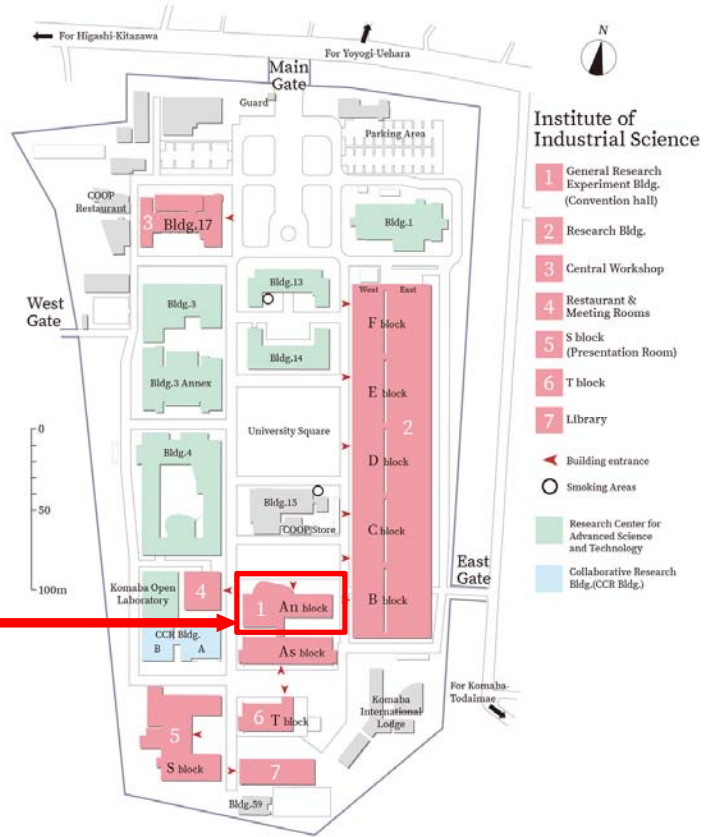
Seismic Performance on RC Column Repaired by Strain-Hardening Fiber-Reinforced Cement-Based Composites

Shogo Yamamoto, Yoshitomo Yano, Masamune Takahashi, Koji Kinoshita, Seungchan Lim, and Kazuhide Shinya

Behaviour and Strength Characteristics of Steel Fiber RC Wall Panels under Flexural and Impact Loading

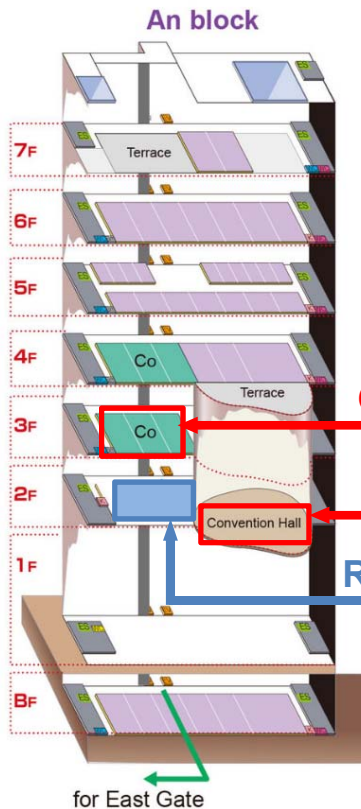
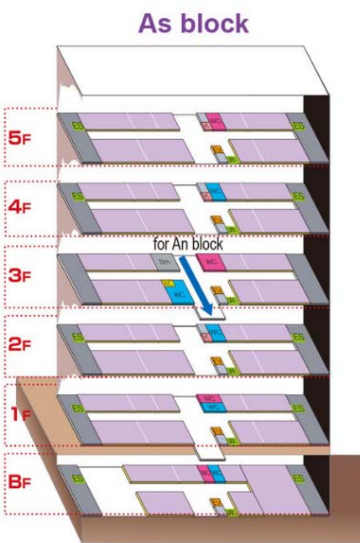
Sumit Choudary, Abhijeet Kishore, and Sandeep Chaudary

Symposium Venue



An Block (2F & 3F)

- Elevator & Stairs
- WC (Handicapped)
- Emergency Stairs
- Kettle Room
- WC (Men)
- Smoking Room
- WC (Women)
- Conference Room



List of Participants

No.	Name	Affiliation	Country
1	Ahmed Okeil Mohamed Atia	The University of Tokyo	Japan
2	Bala Subramanian K	Anna University	India
3	Byungil Choi	Ulsan National Institute of Science and Technology	Korea
4	Dokkie Kim	Kunsan National University	Korea
5	Dong Jin Jeong	Ulsan National Institute of Science and Technology	Korea
6	Duan Duy Nguyen	Konkuk University	Korea
7	Enzo Martinelli	University of Salerno	Italy
8	Ganchai Tanapornraweekit	Sirindhorn International Institute of Technology	Thailand
9	Hangting Kong	Zhejiang University	China
10	Haruka Akasaka	Gunma University	Japan
11	Hiromu Sueki	Shibaura Institute of Technology	Japan
12	Hiroshi Dobashi	Metropolitan Expressway Company Limited	Japan
13	Hiroshi Onishi	Iwate University	Japan
14	Hiroshi Yokota	Hokkaido University	Japan
15	Hyeongyeop Shin	Seoul National University	Korea
16	Iwane Sotaro	Iwate University	Japan
17	Jae Hong Kim	Ulsan National Institute of Science and Technology	Korea
18	Jian Guo Dai	The Hong Kong Polytechnic University	China
19	Jianfeng Dong	Zhejiang University	China
20	Jin Hyun Lee	Ulsan National Institute of Science and Technology	Korea
21	Jin Young Yoon	Ulsan National Institute of Science and Technology	Korea
22	Joel Galupo Opon	Hokkaido University	Japan
23	Junhee Park	Kunsan National University	Korea
24	Junqi Huang	The Hong Kong Polytechnic University	China
25	Junya Sato	Saitama University	Japan
26	Jun-Yang Shi	National Taiwan University of Science and Technology	Taiwan
27	Kazuaki Nishimura	Tokyo University of Science	Japan
28	Kenshiro Sasaki	Iwate University	Japan
29	Kiet Anh Bui	Sirindhorn International Institute of Technology	Thailand
30	Kohei Eguchi	Tokyo University of Science	Japan
31	Kohei Nagai	The University of Tokyo	Japan
32	Koichi Maekawa	The University of Tokyo	Japan
33	Koji Matsumoto	The University of Tokyo	Japan
34	Kyungmin Kim	Seoul National University	Korea
35	Licheng Wang	Dalian University of Technology	China
36	Liyanto Eddy	The University of Tokyo	Japan
37	Luong Minh Le	Kunsan National University	Korea
38	Mahmoud Fathalla Eissa	The University of Tokyo	Japan
39	Mai T Nguyen	Saitama University	Japan
40	May Thazin Tun	The University of Tokyo	Japan
41	Meta Tep	The University of Tokyo	Japan
42	Meng Yushi	The University of Tokyo	Japan
43	Mengting Tsai	National Taiwan University of Science and Technology	Taiwan
44	Michael Henry	Hokkaido University	Japan
45	Miguel Benjamin Brito Velasco	Waseda University	Japan

46	Mitsuo Ozawa	Gunma University	Japan
47	Mitsuyoshi Akiyama	Waseda University	Japan
48	Muhammad Aboubakar Farooq	Hokkaido University	Japan
49	Osama Abdelfattah Hegeir	The University of Tokyo	Japan
50	Pakawat Sancharoen	Sirindhorn International Institute of Technology	Thailand
51	Punyawut Jiradilok	The University of Tokyo	Japan
52	Rahmat Ullah	Hokkaido University	Japan
53	Rajamurugan Sundaram	The University of Tokyo	Japan
54	Ramiz Ahmed Raju	Waseda University	Japan
55	Rodolfo Jr Paule Mendoza	Nagoya University	Japan
56	Saddam M Ahmed	Mosul University	Iraq
57	Satoko Naomachi	Tokyo University of Science	Japan
58	Satoru Yamamoto	Gunma University	Japan
59	Seong Ho Han	Ulsan National Institute of Science and Technology	Korea
60	Seung Yong Jeong	Seoul National University	Korea
61	Shahzad Saleem	Sirindhorn International Institute of Technology	Thailand
62	Shanya Orasutthikul	Hokkaido University	Japan
63	Shingo Asamoto	Saitama University	Japan
64	Shingo Takahara	The University of Tokyo	Japan
65	Shogo Yamamoto	Gifu University	Japan
66	Shunsei Tanaka	The University of Tokyo	Japan
67	Sirjana Subedi Parajuli	Gunma University	Japan
68	Siva A	Anna University	India
69	Sushanta Roy	Nagoya University	Japan
70	Sopokhem Lim	Waseda University	Japan
71	Songye Zhu	The Hong Kong Polytechnic University	China
72	Sristi Das Gupta	Hokkaido University	Japan
73	Taeyong Shin	Ulsan National Institute of Science and Technology	Korea
74	Taito Miura	Nagoya University	Japan
75	Takahiro Kashiwa	The University of Tokyo	Japan
76	Takehiro Misaka	Shibaura Institute of Technology	Japan
77	Takeru Kanazawa	Hokkaido University	Japan
78	Tomohisa Kamada	The University of Tokyo	Japan
79	Tsukasa Mizutani	The University of Tokyo	Japan
80	Tuan Tranh Tran	Kunsan National University	Korea
81	Yizhou Yang	Nagoya University	Japan
82	Yuga Sasaki	The University of Tokyo	Japan
83	Yuneng Hsiao	Taiwan Power Company	Taiwan
84	Yuxi Zhao	Zhejiang University	China
85	Yuya Sakai	The University of Tokyo	Japan
86	Zhao Wang	Hokkaido University	Japan
87	Zhengshu He	Waseda University	Japan