

## Program at a glance

Date	Time	Activity				
Nov. 17 [Sun.]	13:00 – 17:00	Registration Toki Messe [4F] Foyer				
Nov. 18 [Mon.]	8:00 -	Registration Toki Messe [4F] Foyer				
	9:10 – 9:30	Opening Ceremony Toki Messe [4F] Marine Hall				
	9:30 – 10:20	Keynote speech 1 Toki Messe [4F] Marine Hall				
	10:20 – 11:00	Group Photographs & Coffee break Toki Messe [4F] Marine Hall / Foyer				
	11:00 – 11:30	Industrial Session 1 Toki Messe [4F] Marine Hall				
	11:30 – 13:30	Lunch Hotel Nikko Niigata [4F] Toki				
	13:30 – 15:30	<table border="1"> <tr> <td>Technical Session Force 1 Toki Messe [4F] Marine Hall</td> <td>Technical Session Mass 1 Toki Messe [3F] Room 303-304</td> </tr> <tr> <td>Technical Session Torque 1 Toki Messe [4F] Marine Hall</td> <td></td> </tr> </table>	Technical Session Force 1 Toki Messe [4F] Marine Hall	Technical Session Mass 1 Toki Messe [3F] Room 303-304	Technical Session Torque 1 Toki Messe [4F] Marine Hall	
Technical Session Force 1 Toki Messe [4F] Marine Hall	Technical Session Mass 1 Toki Messe [3F] Room 303-304					
Technical Session Torque 1 Toki Messe [4F] Marine Hall						
	15:30 – 16:00	Coffee break Toki Messe [4F] Foyer				
	16:00 – 17:00	<table border="1"> <tr> <td>Technical Session Pressure 1 / Vacuum 1 Toki Messe [4F] Marine Hall</td> <td>Technical Session Torque 2 / Gravimetry Toki Messe [3F] Room 303-304</td> </tr> </table>	Technical Session Pressure 1 / Vacuum 1 Toki Messe [4F] Marine Hall	Technical Session Torque 2 / Gravimetry Toki Messe [3F] Room 303-304		
Technical Session Pressure 1 / Vacuum 1 Toki Messe [4F] Marine Hall	Technical Session Torque 2 / Gravimetry Toki Messe [3F] Room 303-304					
	18:30 – 20:30	Welcome reception & Industrial Session 2 Sadokisen terminal building [5F] Large Hall				

Date	Time	Activity	
Nov. 19 [Tue.]	8:00 –	Registration Toki Messe [4F] Foyer	
	9:10 – 10:00	Keynote speech 2 Toki Messe [4F] Marine Hall	
	10:00 – 10:30	Coffee break Toki Messe [4F] Foyer	
	10:30 – 11:30	Technical Session Mass 2 Toki Messe [4F] Marine Hall	Technical Session Pressure 2 / Vacuum 2 / Others Toki Messe [3F] Room 303-304
	11:30 – 13:30	Lunch Hotel Nikko Niigata [4F] Toki	
	12:30 – 13:30		IPC meeting Toki Messe [3F] Room 305
	14:00 – 18:00	City tour	
Nov. 20 [Wed.]	8:00 –	Registration Toki Messe [4F] Foyer	
	9:10 – 10:00	Poster Session Toki Messe [4F] Marine Hall	
	10:00 – 10:30	Coffee break Toki Messe [4F] Foyer	
	10:30 – 11:30	Technical Session Hardness / Density Toki Messe [4F] Marine Hall	Technical Session Pressure 3 Toki Messe [4F] Room 303-304
	11:30 – 13:30	Lunch Hotel Nikko Niigata [4F] Toki	
	13:30 – 14:50	Technical Session Force 2 Toki Messe [4F] Marine Hall	Technical Session Others Toki Messe [3F] Room 303-304
	15:30 – 16:30	Closing ceremony Toki Messe [4F] Marine Hall	
	18:00	Bus @ Toki Messe ---> @ Niigata Station	
	18:15	Bus @ Niigata Station ---> @ The Italia Ken	
18:30 – 20:30	Forum banquet The Italia Ken		

Date	Time	Activity
Nov. 21 [Thu.]	9:00 – 18:00	Technical tour

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## Program Overview

### Monday, Nov. 18

Keynote speech 1 Toki Messe [4F] Marine Hall

Chair: - [-, -]

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9:30 – 10:20     Title  
*Rolf Kümme [Physikalisch-Technische Bundesanstalt (PTB), Germany]*

Industrial Session 1 Toki Messe [4F] Marine Hall

Chair: - [-, -]

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11:00 – 11:10     Mettler-Toledo  
11:10 – 11:20     Yokogawa Test & Measurement Corporation  
11:20 – 11:30     JAPAN QUALITY ASSURANCE ORGANIZATION

Technical Session: Force 1 Toki Messe [4F] Marine Hall

Chair: - [-, -]

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13:30 – 13:50     Calibration Methods and Influencing Factor for Alignment of Material Testing Machine  
*Qin Haifeng (ChangCheng Institute of Metrology & Measurement, China),  
Wang Jinglu,  
Liu Sibao,  
Tian feng*

13:50 – 14:10     Long-term instability of force-proving instruments used for the calibration of uniaxial testing  
*Takaaki Mayumi (Shimadzu Access Corporation, Japan)*

14:10 – 14:30     Evaluation of Small Capacity Force Transducers  
*Junfang Zhu (National Metrology Institute of Japan (NMIJ), AIST, Japan),  
Toshiyuki Hayashi (National Metrology Institute of Japan (NMIJ), AIST, Japan),  
Koji Ogushi (National Metrology Institute of Japan (NMIJ), AIST, Japan)*

Technical Session: Torque 1 Toki Messe [4F] Marine Hall

Chair: - [-, -]

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14:30 – 14:50     Study on Fabrication of Torque Transfer Wrench with Check Standard Combination  
*Tassanai Sanponpute (National Institute of Metrology, Thailand),  
Chokchai Wattong (National Institute of Metrology, Thailand),  
Nittaya Arksonnarong (National Institute of Metrology, Thailand)*

- 14:50 – 15:10     **New Method of Calibration for Standard Torque Wrench with Deadweight Torque Machine**  
*Fan Haiting (Shanghai Institute of Quality Inspection and Technical Research, China),  
 Hu Zifeng,  
 Xia Bingyu,  
 Li Heliang,  
 William Huang (GTM China Office, Shanghai, China),  
 Zhang Fuping (Xinjiang Uygur Autonomous Region Research Institute of Measurement & Testing, Urumqi, China)*
- 15:10 – 15:30     **Design of 100 kN·m Deadweight Torque Standard Machine**  
*Zhang Zhimin (Mechanics and Acoustics Division, National Institute of Metrology, China),  
 Hu Gang,  
 Zhang Yue,  
 Meng Feng,  
 Zhang Wei*

**Technical Session: Pressure 1 / Vacuum 1**

Toki Messe [4F] Marine Hall

Chair: - [-, -]

- 16:00 – 16:20     **Newly developed pressure measurement system using an optical method at NMIJ**  
*Yoshinori TAKEI (AIST National Metrology Institute of Japan, Japan),  
 Kenta ARAI (AIST National Metrology Institute of Japan, Japan),  
 Hajime YOSHIDA (AIST National Metrology Institute of Japan, Japan),  
 Youichi BITOU (AIST National Metrology Institute of Japan, Japan),  
 Souichi TELADA (AIST National Metrology Institute of Japan, Japan),  
 Tokihiko KOBATA (AIST National Metrology Institute of Japan, Japan)*
- 16:20 – 16:40     **A compact impulse pressure generator based on shock acceleration exciter**  
*Rudi Anggoro Samodro (University of Science and Technology (UST), Korea / Korea Research Institute of Standards and Science (KRISS), Korea / National Standardization Agency of Indonesia (BSN), Indonesia),  
 In-Mook Choi (University of Science and Technology (UST), Korea / Korea Research Institute of Standards and Science (KRISS), Korea)*
- 16:40 – 17:00     **Development of Pressure Transfer Standard Using a Silicon Resonant Sensor**  
*Hideaki Yamashita (Yokogawa Test & Measurement Corporation, Japan),  
 Hirokazu Nagashima (Yokogawa Test & Measurement Corporation, Japan),  
 Hideki Yamada (Yokogawa Test & Measurement Corporation, Japan)*

**Technical Session: Mass 1**

Toki Messe [3F] Room 303-304

Chair: - [-, -]

- 13:30 – 13:50     **Eccentric loading errors analysis of mass comparator**  
*Zhongqi Xiong (Shanghai Institute of Measurement and Testing Technology, China),  
 Liyuan Cheng (Shanghai Institute of Measurement and Testing Technology, China)*
- 13:50 – 14:10     **Vacuum Transfer Equipment for the Dissemination of Mass Unit**  
*Jian Wang (Division of Mechanics and Acoustics, National Institute of Metrology, P.R.China),  
 Changqing Cai (Division of Mechanics and Acoustics, National Institute of Metrology, P.R.China),  
 Manhong Hu (Division of Mechanics and Acoustics, National Institute of Metrology, P.R.China),  
 Rullin Zhong (Division of Mechanics and Acoustics, National Institute of Metrology, P.R.China),  
 Di Wu (Division of Mechanics and Acoustics, National Institute of Metrology, P.R.China)*
- 14:10 – 14:30     **Development of automatic adjustment system for electronic balances**  
*Jittakant Intiang (Department of Science Service, BKK, Thailand)*

- 14:30 – 14:50      Research on consistency analysis based on uncertainty evaluation for NAWI  
*Ruilin Zhong (National Institute of Metrology, China),  
 Di Wu (National Institute of Metrology, China),  
 Changqing Cai (National Institute of Metrology, China),  
 Jian Wang (National Institute of Metrology, China),  
 Manhong Hu (National Institute of Metrology, China)*
- 14:50 – 15:10      Improving measuring accuracy in relay feedback mass measurement system by a modified period measurement  
*Egawa Taku (Saitama University, Japan),  
 Mizuno Takeshi (Saitama University, Japan),  
 Takasaki Masaya (Saitama University, Japan),  
 Ishino Yuji (Saitama University, Japan),  
 Yamaguchi Daisuke (Saitama University, Japan)*

Technical Session: Torque 2 / Gravimetry

Toki Messe [3F] Room 303-304

Chair: - [-, -]

- 16:00 – 16:20      A Multifunctional Torque Standard Device for Calibrating Torque Sensors and Torque Multipliers  
*Meng Feng (Beijing University of Technology, P.R.China / National institute of metrology, P.R.China),  
 Jiao jin pin (University of Technology, P.R.China),  
 Zhang zhi min (National institute of metrology, P.R.China),  
 Li tao (Shanghai Marine Equipment Research Institute, P.R.China),  
 zhang dian long (National institute of metrology, P.R.China)*
- 16:20 – 16:40      Time Constant Calibration of Torque Sensors Based on Negative Step Method  
*Xiangling Ma (Shanghai Marine Equipment Research Institute (SMERI), China),  
 Tao Liand,  
 Hongli Qi,  
 Zhilong Zeng,  
 Chenyong Wu*
- 16:40 – 17:00      The first International Comparison of Absolute Gravimeters (ICAG) in Asia  
*WU Shuqing (National Institute of Metrology, P. R. China),  
 FENG Jinyang (National Institute of Metrology, P. R. China),  
 LI Chunjian (National Institute of Metrology, P. R. China),  
 SU Duowu (National Institute of Metrology, P. R. China),  
 WANG Qiyu (National Institute of Metrology, P. R. China),  
 HU Ruo (National Institute of Metrology, P. R. China),  
 LIU Shanliang (National Institute of Metrology, P. R. China),  
 MOU Lishuang (National Institute of Metrology, P. R. China)*

Industrial Session 2 – Welcome reception

Sadokisen terminal building [5F] Large Hall

Chair: - [-, -]

- 18:50 – 19:00      GTM Testing and Metrology GmbH
- 19:00 – 19:10      Innovative Testing Technology Co., Ltd.
- 19:10 – 19:20      HBM (Hottinger Baldwin Messtechnik GmbH)

## Tuesday, Nov. 19

### Keynote speech 2

Toki Messe [4F] Marine Hall

Chair: - [-, -]

9:10 – 10:00

#### Redefinition of the kilogram for the first time in 130 years

*Kenichi Fujii [National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan]*

### Technical Session: Mass 1

Toki Messe [4F] Marine Hall

Chair: - [-, -]

10:30 – 10:50

#### Improved determination of the volume of E0 stainless steel weights using a constant pressure

*K Fen (National Measurement Institute Australia, Australia),  
M.J. Ballico (National Measurement Institute Australia, Australia)*

10:50 – 11:10

#### Experimental study on the mass determination of silicon sphere from vacuum to air based on Monte Carlo method

*Manhong Hu (National Institute of Metrology, P.R. China),  
Jian Wan (National Institute of Metrology, P.R. China),  
Changqing Cai (National Institute of Metrology, P.R. China),  
Yue Zhang (National Institute of Metrology, P.R. China),  
Ruilin Zhong (National Institute of Metrology, P.R. China),  
Kai Jiao (National Institute of Metrology, P.R. China)*

11:10 – 11:30

#### Impact of Redefinition of the Kilogram to Standards and Calibration Uncertainty in SNSU-BSN

*Zuhdi Ismail (National Standardization Agency of Indonesia (BSN), Indonesia)  
Renanta Hayu (National Standardization Agency of Indonesia (BSN), Indonesia)*

### Technical Session: Pressure 2 / Vacuum 2 / Others

Toki Messe [3F] Room 303-304

Chair: - [-, -]

10:30 – 10:50

#### Calibration system for low-pressure gauge using a pressure balance

*Momoko Kojima (National Metrology Institute of Japan, AIST, Japan)*

10:50 – 11:10

#### Orifice flow system in NMIJ and its long-term stability

*Kenta Arai (National Metrology Institute of Japan (NMIJ), AIST, Japan)*

11:10 – 11:30

#### Influences of Groove Type Casing Treatment on Tip Leakage Flow Behavior in Linear Compressor Cascade at Different Tip Clearances (Influence of Single Groove at Mid-chord)

*Masanao Kaneko (Tokyo Denki University, Japan)*

## Wednesday, Nov. 20

### Technical Session: Hardness / Others

Toki Messe [4F] Marine Hall

Chair: - [-, -]

10:30 – 10:50

#### An application of deep learning for measurement of Brinell and Vickers hardness

*Yukimi Tanaka (National Metrology Institute of Japan, AIST, Japan),  
Yutaka Seino (National Metrology Institute of Japan, AIST, Japan),  
Koichiro Hattori (National Metrology Institute of Japan, AIST, Japan)*

- 10:50 – 11:10    Application of Precision Standard Timing Instrument on Various Hardness Scales  
*Tassanai Sanponpute (National Institute of Metrology (Thailand), Thailand)*
- 11:10 – 11:30    The Calibration and Use of Dental Scaler Tip Vibration Testing Unit  
*Chompoonoot Hirunyapruk (National Institute of Metrology (Thailand), Thailand),  
Tassanai Sanponpute (National Institute of Metrology (Thailand), Thailand)*

Technical Session: Pressure 3

Toki Messe [3F] Room 303-304

Chair: - [-, -]

- 10:30 – 10:50    Relationship between calibration values of quartz Bourdon-type pressure transducers and density of pressure medium  
*Hideaki Iizumi (National Metrology Institute of Japan (NMIJ), AIST, Japan),  
Hiroaki Kajikawa (National Metrology Institute of Japan (NMIJ), AIST, Japan),  
Tokihiko Kobata (National Metrology Institute of Japan (NMIJ), AIST, Japan)*
- 10:50 – 11:10    Proposal of Visualizing System of Grasp Pressure toward Effective Training for Myoelectric Hand Operation  
*Takayuki SAITO (Niigata University, Japan),  
Takashi IMAMURA (Niigata University, Japan)*
- 11:10 – 11:30    Measurement of Sound Waves Induced in Supersonic Flow Field Using Visualized Images  
*Hiromasa SUZUKI (Tokyo Metropolitan College of Industrial Technology, Japan),  
Masaki ENDO (Tokyo Denki University, Japan),  
Yoko SAKAKIBARA (Tokyo Denki University, Japan)*

Technical Session: Force 2

Toki Messe [4F] Marine Hall

Chair: - [-, -]

- 13:30 – 13:50    Spring back estimation in cold roll forming of wrought magnesium alloys  
*Harunori Kobayashi (Tokyo Denki University, Japan),  
Hisaki Watari (Tokyo Denki University, Japan)*
- 13:50 – 14:10    Friction Measurement Method for Air Bearing Using in Force Standard Machine  
*Xia Bingyu (Shanghai Institute of Quality Inspection and Technical Research, China),  
Fan Haiting (Shanghai Institute of Quality Inspection and Technical Research, China),  
Hu Zifeng (Shanghai Institute of Quality Inspection and Technical Research, China),  
Tu Chun,  
Li Heliang,  
Lu Xiaoben*
- 14:10 – 14:30    Model of Chiseling Sensation in Force Display Control System for Surgical Training Simulator with Chiseling Operation  
*Kentaro Masuyama (University of Yamanashi, Japan),  
Yoshiyuki Noda (University of Yamanashi, Japan),  
Yasumi Ito (University of Yamanashi, Japan),  
Koichiro Ueki (University of Yamanashi, Japan)*

- 14:30 – 14:50 The stiffness measurement of various cantilever with the small force standard based on electromagnetic compensation  
*Le Ji Jiang (National Institute of Metrology, China),  
Yan Hui Zhou (Tianjin University, China),  
Kun WU (National Institute of Metrology, China),  
Shi WU (National Institute of Metrology, China),  
Min Zhi Zhang (National Institute of Metrology, China),  
Gang Hu (National Institute of Metrology, China)*

Technical Session: Density / Others

Toki Messe [3F] Room 303-304

Chair: - [-, -]

- 13:30 – 13:50 Study on density measurement of monocrystalline silicon based on compression heat effect  
*Jingyue Zhang (National Institute of Metrology, China),  
Jiadong Zhong (China Jiliang University, China / National Institute of Metrology, China),  
Bin Sun (China Jiliang University, China),  
Yuxiao Zhao (China Jiliang University, China),  
Xinyu Ma (China Jiliang University, China / National Institute of Metrology, Beijing, China),  
Jintao Wang (National Institute of Metrology, China)*
- 13:50 – 14:10 Experimental Verification of Flow Rate Estimation Using Extended Kalman Filter in Tilting-ladle-type Automatic Pouring Machine  
*Yuta Sueki (University of Yamanashi, Japan),  
Yoshiyuki Noda (University of Yamanashi, Japan)*
- 14:10 – 14:30 Design and mise en pratique of a portable subsonic wind tunnel for airspeed metrology  
*Jeerasak Pitakarnnop (National Institute of Metrology (Thailand), Thailand / Chulalongkorn University, Thailand)*
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**Wednesday, Nov. 20**

Poster Session:

Toki Messe [4F] Marine Hall

Chair: - [-, -]

9:10 – 10:00

[M-1] Static Removal Capability of Static Eliminator in a Nitrogen Atmosphere and Introducing Quick Ion Technology for Analytical Balance

*Kazuma Funahasi (A&D Company,Limited R&D Division 5, Japan),  
Ken Ihara (A&D Company,Limited R&D Division 5, Japan),  
Hiroaki Tateno (A&D Company,Limited R&D Division 5, Japan),  
Yoshikazu Nagane (A&D Company,Limited R&D Division 5, Japan)*

[M-2] Some thinking about NAWI according to OIML R76

*Binghui Ma (Zhejiang Institute of Metrology, Hangzhou, China)*

[M-3] Mass Determination of Sub-Milligram Standard Weights at NMIJ

*Yuichi Ota (National Institute of Advanced Industrial Science and Technology / National Metrology Institute of Japan (AIST/NMIJ), Japan),  
Masaaki Ueki (National Institute of Advanced Industrial Science and Technology/National Metrology Institute of Japan (AIST/NMIJ, Japan)),  
Naoki Kuramoto (National Institute of Advanced Industrial Science and Technology/National Metrology Institute of Japan (AIST/NMIJ), Japan)*

[M-4] Measurement of sorption effect for dissemination of new kilogram standard

*Lin Tsao (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan),  
Yu-Hsin Wu (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan),  
Sheng-Jui Chen (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan)*

[M-5] Development of a combined XRF XPS surface analysis system

*Yu-Hsin Wu (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan),  
Lin Tsao (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan),  
Jeng-Yu Chiu (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan),  
Sheng-Jui Chen (Center for Measurement Standards, Industrial Technology Research Institute, Taiwan )*

[M-6] Small Force Measurement Induced by Laser Radiation Using a Voltage Balance Apparatus at NMIJ

*Kazuaki Fujita (National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology, Japan),  
Yasuyuki Yamamoto (National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology, Japan),  
Naoki Kuramoto (National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology, Japan),  
Kenichi Fujii (National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology, Japan)*

[M-7] Research on Automatic Electronic Balance Verification System Based on the Robot Technology

*Yuanjie Chen (Zhejiang Institute of Metrology),  
Xinxiong Kong (Zhejiang Institute of Metrology),  
Chaoyuan Xu (Zhejiang Institute of Metrology),  
Qun Zhao (Zhejiang Institute of Metrology)*

[M-8] Our development for Sub-milligram weights with ISO/IEC17025 certificate

*Noboru Murakami (MURAKAMI KOKI CO., LTD., Japan)*

[M-9] Performance Test of Fully Automatic Mass Comparator System of Capacity 100 g

*Ching-Fen Tuan (Center of Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan),*

*Sih-Chieh Chen (Center of Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan),*

*Lin Tsao (Center of Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan)*

[M-10] Vibration compensation for checkweigher using dummy load cell

*Akinori Tsuzura (Tokyo Denki University, Japan),*

*Yuji Yamakawa (The University of Tokyo, Japan),*

*Takanori Yamazaki (Tokyo Denki University, Japan)*

[F-1] SIM.M.F-S2 TESTING MACHINE CALIBRATION IN COMPRESSION SIM COMPARISON UP TO 100 kN

*Juan Christian Villarroel Poblete (Instituto de Investigaciones y Control del Ejército (IDIC), Santiago, Chile),*

*Luis Rubén Soto Pinto (Instituto de Investigaciones y Control del Ejército (IDIC), Santiago, Chile),*

*Josué Batista (Centro Nacional de Metrología de Panamá (CENAMEP AIP), Panamá, Panamá),*

*Orlando Pinzón (Centro Nacional de Metrología de Panamá (CENAMEP AIP), Panamá, Panamá),*

*José Kuruc (Centro Nacional de Metrología de Panamá (CENAMEP AIP), Panamá, Panamá)*

[F-2] Development of a CMOS-MEMS Three-axis Force Sensor

*Sih-Chieh Chen (Center for Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan),*

*Chung-Lin Wu (Center for Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan),*

*Weileun Fang (Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan),*

*Sheng-Jui Chen (Center for Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan)*

[F-3] Performance investigation and comparison of 10 N and 200 N deadweight force standard machines in NIM

*Gang Hu (National Institute of Metrology (NIM), Beijing, P.R. China),*

*Jile Jiang (National Institute of Metrology (NIM), Beijing, P.R. China),*

*Kun Wu (National Institute of Metrology (NIM), Beijing, P.R. China),*

*Shi Wu (National Institute of Metrology (NIM), Beijing, P.R. China),*

*Zhimin Zhang (National Institute of Metrology (NIM), Beijing, P.R. China)*

[F-4] Experimental Study of Estimation Methods of Axle Weights for In-motion Vehicles by Using Miniature Models-Estimation by Use of Weight Signals from Two Detection Units-

*Koji Yoshida (Department of Mechanical Systems Engineering, Okayama University of Science, Okayama, Japan),*

*Kengo Fukuda (Sohatsu Systems Laboratory Inc., Hyogo, Japan),*

*Tetsuya Kinugasa (Department of Mechanical Systems Engineering, Okayama University of Science, Okayama, Japan),*

*Ryota Hayashi (Department of Mechanical Systems Engineering, Okayama University of Science, Okayama, Japan)*

[F-5] Calibration Method of 1 MN Lever Amplification Force Standard Machine Using Combination of Deadweight and Force Transducers

*Hafid (National Standardization Agency of Indonesia (BSN), Tangerang, Indonesia),*

*Dinar Nurcahyono (National Standardization Agency of Indonesia (BSN), Tangerang, Indonesia),*

*Nur Tjahyo Eka Darmayanti (National Standardization Agency of Indonesia (BSN), Tangerang, Indonesia)*

- [F-6] Renovation of NMIJ's 20 MN Hydraulic Amplification Type and 1 MN Lever Amplification Type Force Standard Machines  
*Toshiyuki Hayashi (National Metrology Institute of Japan (NMIJ), Tsukuba, Japan), Hiroshi Maejima (National Metrology Institute of Japan (NMIJ), Tsukuba, Japan), Junfang Zhu (National Metrology Institute of Japan (NMIJ), Tsukuba, Japan), Kazunaga Ueda (National Metrology Institute of Japan (NMIJ), Tsukuba, Japan), Hiroshi Otani (Maekawa Testing Machine MFG. Co., Ltd., Tokyo, Japan)*
- [F-7] Report on the APMP Supplementary Force Comparison in the Range of 100 kN: APMP.M.F-S2.1 (full paper not found)  
*Min-Seok Kim (Korea Research Institute of Standards and Science (KRISS), Korea)*
- [F-8] Model-based prediction and control of molten metal pressure inside sand mold in press casting process  
*Rintaro Suzuki (Department of Mechanical Engineering, Aoyama Gakuin University, Kanagawa, Japan), Ryosuke Tasaki (Department of Mechanical Engineering, Aoyama Gakuin University, Kanagawa, Japan)*
- [F-9] Dynamic Behavior of Feed Drive Systems using Different Linear Guideways  
*Kazuma Tanaka (Tokyo Denki University, Japan), Takanori Yamazaki (Tokyo Denki University, Japan)*
- [T-1] Calibration of Torque Measuring Devices Using the Reference Type Torque Calibration Machine in JQA  
*Yusuke TODA (Japan Quality Assurance Organization, Aichi, Japan), Takahiro KUROKAWA (Japan Quality Assurance Organization, Aichi, Japan), Hiroki TESHIGAWARA (Spectris Co., Ltd., Tokyo, Japan), Koji OGUSHI (National Metrology Institute of Japan, AIST, Ibaraki, Japan)*
- [T-2] The design and the development of 1 kN·m torque standard machine in National Institute of Metrology, China  
*Le Ji JIANG (Laboratory of Force and Torque, Division of Mechanics and Acoustics, National Institute of Metrology, China), Kun WU, Bin Guo, Shi WU, Min Zhi Zhang, Gang Hu*
- [T-3] Development of a low nominal capacity reference torque calibration machine  
*Atsuhiko Nishino (National Metrology Institute of Japan (NMIJ), AIST, Tsukuba, Japan), Misaki Kiuchi (National Metrology Institute of Japan (NMIJ), AIST, Tsukuba, Japan), Koji Ogushi (National Metrology Institute of Japan (NMIJ), AIST, Tsukuba, Japan)*
- [T-4] Torque Calibration Machine with binary mass register for widest range 1 mN·m to 262.143 mN·m  
*Steffen Hohmann (CEH, Calibration Engineering Hohmann, Germany), Tobias Keidel (CEH, Calibration Engineering Hohmann, Germany)*
- [P-1] Experimental Evaluation of a PTB Force-Balanced Piston Gauge  
*Ahmed S. Hashad (National Institute for Standards (NIS), Egypt / Physikalisch-Technische Bundesanstalt (PTB), Germany), Wladimir Sabuga (Physikalisch-Technische Bundesanstalt (PTB), Germany), Sven Ehlers (Physikalisch-Technische Bundesanstalt (PTB), Germany), Thomas Bock (Physikalisch-Technische Bundesanstalt (PTB), Germany)*

- [P-2] Computational Fluid Dynamics Simulation to Determine Frequency Characteristics of a Pressure Sensor with a Semi-Closed Structure  
*Taiju Toriyama (Graduate School of Science and Technology, Niigata University, Japan), Hana Ono (Graduate School of Science and Technology, Niigata University, Japan), Naoto Takaoka (Graduate School of Science and Technology, Niigata University, Japan), Masashi Ohkawa (Faculty of Engineering, Niigata University, Japan)*
- [P-3] Pressure control in the MSL Kibble balance (full paper not found)  
*Rebecca Hawke*
- [P-4] In-situ high-pressure viscosity measurement of dioctyl sebacate using two pressure balances  
*Tomoya Muramoto (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan), Yoshitaka Fujita (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan), Hiroaki Kajikawa (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan), Hideaki Iizumi (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan), Kazunori Ide (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan)*
- [P-5] Trial on-ship calibration of pressure gauges used as bathometers  
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- [P-6] Proposal of Customizable Racing Saddle of Bicycle depending on Bicycle Usage and Rider's Body Shape  
*Hina Sawaguchi (Graduate school of Science and Technology, Niigata University, Japan), Manabu Hashimoto (Graduate school of Science and Technology, Niigata University, Japan), Takashi IMAMURA (Faculty of Engineering, Niigata University, Japan)*
- [V-1] Development of vacuum gauge and calibration technology  
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- [H-1] Analysis of Mechanical Properties of Vulcanized Rubber under Variable Temperature Environment  
*Shi Wei (Changcheng Institute of Metrology and Measurement, Beijing, China), Zhang Kailin (Beihang University, Beijing, China), Tan Zhixue (Industrain (Ningbo) Infotech Co., Ltd., Ningbo, China), Chen Junxin (Quanzhou Fengze Donghai Instrument Hardness Block Factory, Quanzhou, China)*
- [G-1] High Precision Vertical Gradient measurement in the 10th International Comparison of Absolute Gravimeters  
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- [G-2] Gravity gradient measurement based on double free fall corner cubes  
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[O-1] Dynamic Measurement of a Human Hand Motion with Noise Elimination and Slow Motion Detection Algorithms Using a 1 kHz Vision

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