

Greetings from APMP Chairperson	02	2022 APMP GA	03	Collaboration with the IMEKO	05	APMP Funded Programmes Continued	06	DEC Highlights	09
Progress of MEDEA 3.0	10	Greetings from New EC and TC/FG Chairs-elect	11	2022 APMP Awards	14	News from Members	19	Future Meetings	24

May 2023

APMP

Asia Pacific Metrology Programme

Issue 47

Newsletter



Greetings from APMP Chairperson



Dear APMP colleagues and friends,

It seems only yesterday that many of us gathered to meet in Odaiba, Tokyo. My special appreciation goes to our colleagues at NMIJ, NICT, CERI and JEMIC for hosting the 2022 APMP annual event with wonderful hospitality. I would also like to take opportunity to thank my predecessor, Mr. Fang Xiang, for his excellent leadership, and I thank the NIM Secretariat for supporting the APMP for the past three years. Additionally, I extend my gratitude to my fellow EC members and the Chairs of the APMP's organizations for their commitment.

Despite the difficult challenges over the past few years, our members fulfilled their responsibilities and did their best in their respective position. Not only did we have the COVID-19 pandemic, but we are also facing issues pertaining to an unstable global economy that will likely last for some time.

It will take many years before we fully comprehend the widespread consequences of COVID-19. Nevertheless, the key lesson is clear: cooperation is of the highest importance. With the onset of the pandemic, the APMP and its members have worked in close collaboration to organize special programs like the APMP Response Program against COVID-19. In addition, we continued to hold APMP meetings and workshops by adapting to the non-face-to-face transition that was rapidly disseminating throughout all domains of society.

The APMP will continue its collaborative efforts beyond the current crisis and expand toward a wide range of issues that are highly relevant to the Asia-Pacific region. Finding common solutions to the various challenges pertinent to the digital transition of metrology, climate change, AI, and emerging technologies will bring us close together. Cooperation is no longer an option: it is now an essential strategy for survival. Given the world economy consists of intricately intertwined value chains, no single or group of nations can hope to make progress alone. Through shared solidarity and commitment, I hope all APMP members can join hands and unite as close companions for the journey ahead. The APMP and the Secretariat will stand by your side every step of the way.

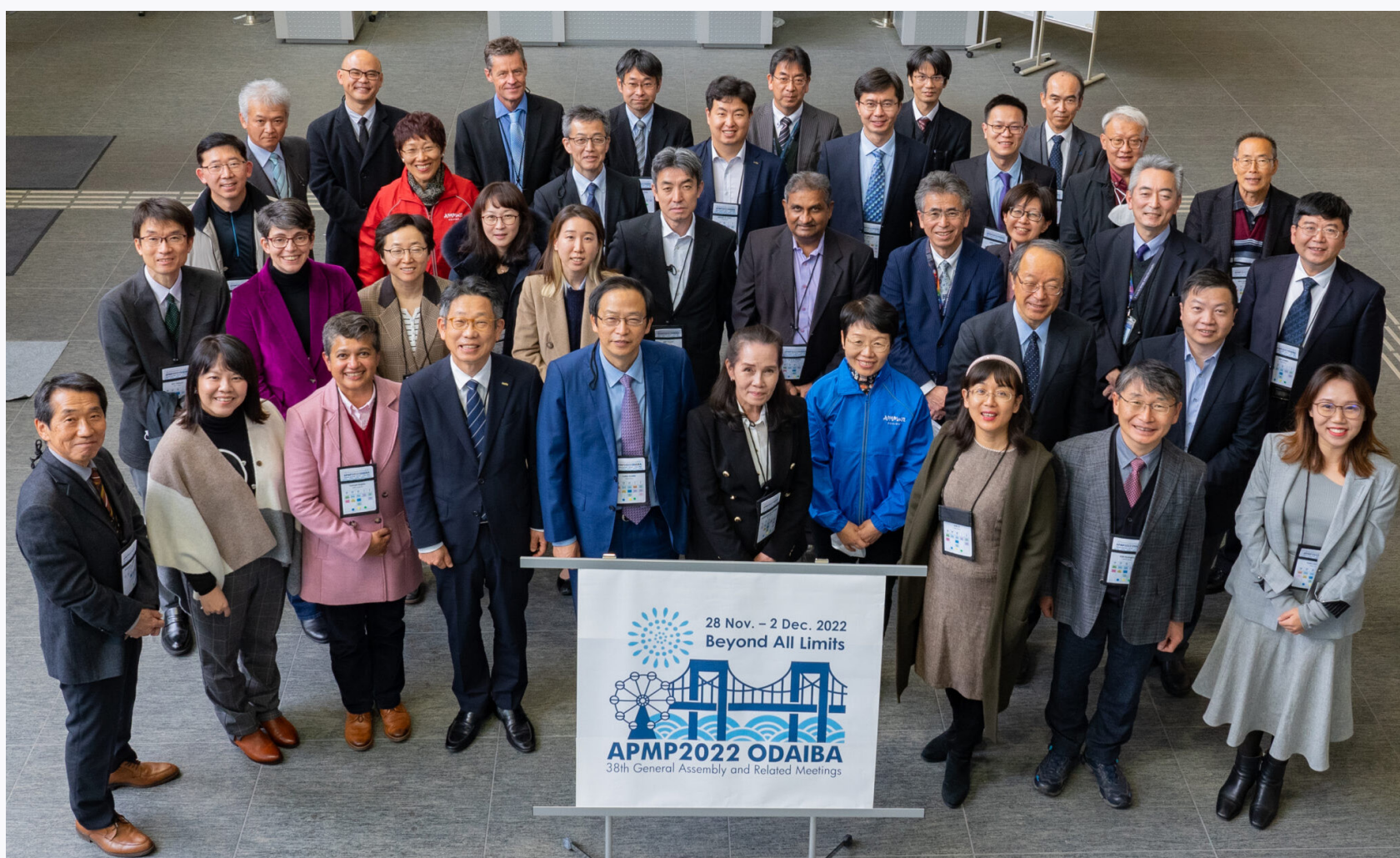
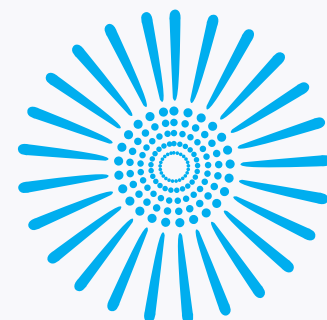
Thank you.
Hyunmin Park

A handwritten signature in black ink, appearing to read 'H. Park', written over a light grey background.

APMP General Assembly & Related Activities, 2022

APMP 2022

The 38th General Assembly & Related Activities



We finally met in person for the first time since the abrupt outbreak of the COVID-19 pandemic.

The 38th APMP General Assembly (GA) and related activities (APMP 2022) were held from 28 November to 2 December 2022 in Odaiba Tokyo, Japan, sponsored and organized by the NMIJ (National Metrology Institute of Japan), NICT (National Institute of Information and Communications Technology), CERl (Chemicals Evaluation and Research Institute, Japan) and JEMIC (Japan Electric Meters Inspection Corporation).

After much deliberation regarding the best way to hold the event, APMP 2022 was organized as a hybrid format involving in-person meetings with a limited number of attendees at the venue in combination with online sessions. The EC members and TC, FG, and DEC Chairs were invited to the in-person meetings, and they were joined online by our NMI directors and other relevant parties. Despite these limitations, it was

a pleasure to be able to finally meet in person for the first time since the abrupt outbreak of the COVID-19 pandemic three years ago.

During the meetings, the participants engaged in the deliberation and discussion of a whole range of topics and collectively produced recommendations for APMP to become a better community.

Some noteworthy outcomes from our members' contributions include:

- Transfer of the APMP Chair and Secretariat
- Election of new EC members, Lead TC Chair, and TC and FG Chairs
- Adoption of the APMP Budget Plan 2023
- Review of APMP technical activities, discussions regarding new regional comparison plans
- Periodic review of APMP Focus Groups and consensus to continue activities
- Progress review regarding the implementation of the DEC Strategic Plan
- Development of consolidated Guidelines for Funded Projects Under TC, FG & Special Programmes
- Presentation of a preliminary work plan of the APMP E-learning Working Group

The elections took place virtually during a closed session of the GA. Two EC members, Dr. Angela Samuel (NMIA, Australia) and Dr. Venu Gopal Achanta (NPL, India), were elected and started their 3-year terms, and Dr. Tang Lin Teo was approved to extend her term as an EC member for one more year until GA 2023. Three TC Chairs and the DEC Chair also started their first terms at the GA. Also elected were the Lead-TC Chair and two TC Chairs. The GA also approved new three FG Chairs and the continuation of the APMP Focus Groups.

Among the 15 annual awards recipients awarded at the GA, the 2022 APMP Award was presented to Dr. Toshiyuki Takatsuji – Supervisory Innovation Coordinator of NMIJ, Japan and former APMP Chairperson from 2016 to 2019 – for his significant contributions to regional metrology activities. Also, another 2022 APMP Award was presented to Dr. Gao Wei – Director of Mechanics and Acoustics Division of NIM, China and former APMP EC member & Treasurer from 2016 to 2019 – for her remarkable contributions supporting the APMP Chairperson and Secretariat over the course of NIM's two terms in office (2009~2012, 2019~2022).

Our deepest appreciation goes out to the APMP Executive Committee, Secretariat, Technical Committee, Developing Economies' Committee, and the Focus Group Chairs for all their contribution and support. Also, on behalf of the APMP community, we would like to extend our genuine gratitude to

NMIJ, NICT, CERI and JEMIC, for their efforts in organizing an in-person APMP 2022 conference despite the difficult circumstances.

2022 APMP NMI Directors' Workshop



The 13th APMP NMI Directors' Workshop was held on 29 November 2022 with the theme of "How Can Metrology Underpin the Economic Recovery in the Post-Pandemic Era." Our directors discussed and exchanged insights regarding strategic planning and actions for NMIs to be able to respond to grand global challenges and increasing industrial needs. NMI directors of APMP and invited participants gathered virtually and engaged in forward-thinking dia-

logue on innovation driven by digitalization. The following topics were at the center of the discussions held at the workshop:

Topic 1: Combatting COVID-19

Topic 2: Strategies for NMIs

Topic 3: Serving industries

Workshop Chair & Speakers



Dr. Wei-En Fu
Division Director /
APMP EC Member
CMS/ITRI



Dr. Tang Lin Teo
Division Director
APMP EC Member
HSA



Dr. Mala KHAN
Director General
BRICM



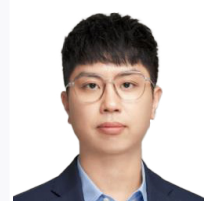
Dr. USUDA Takashi
Director General
NMIJ/AIST



Dr. Hyun-Min Park
President of KRISS,
APMP Chairperson



Dr. Victoria Coleman
Section Manager of
NMIA / APMP Lead TC
Chair



Mr. CHEN Ruiheng
Assistant Director of New
Energy Testing Division,
Shenzhen Academy of
Metrology and Quality
Inspection, China /
Department Director,
NIM Center for Electric
Vehicles of China



Dr. ASAKAI Toshiaki
Manager of Reference
Materials Office
NMIJ/AIST



Prof. JT Janssen
Chief Scientist and
International Director
NPL

New full members

APMP welcomed two new members, BQSF DMSc and NIMM, who joined the organization in December 2022. Memorandum of Understanding (MOU) were successfully signed with both new member institutes.

As of April 2023, APMP has 47 Full Members from 28 economies and 14 Associate Members from 13 economies.

Welcome new member institute, National Institute of Metrology (Myanmar), NIMM



NIMM, formerly named "Metrology Division", was established with the assistance of the Colombo Plan in 1953, as a division affiliated with the Department of Research and Innovation Department (DRI), Ministry of Science and Technology (MoST), to provide measurement services. As the National Metrology Institute, NIMM is part of the National Infrastructure for Quality. It is the organization designated by law in Myanmar to develop, maintain and disseminate the national measurement standards of Myanmar to industry and government.

NIMM's strategic objective is to provide the national infrastructure and conformity assessment needed to ensure traceability in the measurements to the International System of Units (SI). This is a principal technical requirement of industries, which also helps strengthen competitiveness, promotes trust, and facilitates international trade.

NIMM Mass Laboratory is the first accredited laboratory in the country against ISO/IEC 17025:2017 International Standard and is equipped with state-of-the-art equipment for measurement and calibration. The Institute operates seven major metrology laboratories. The facilities include mass, electricity, pressure, temperature, dimension, volume and moisture laboratories.

Contact: Mar Lar, NIMM, Myanmar
E-mail: marlarwin99@gmail.com

Welcome new member institute, the Bureau of Quality and Safety of Food, Department of Medical Science, Ministry of Public Health (BQSF DMSc)



กรมวิทยาศาสตร์การแพทย์
Department of Medical Sciences

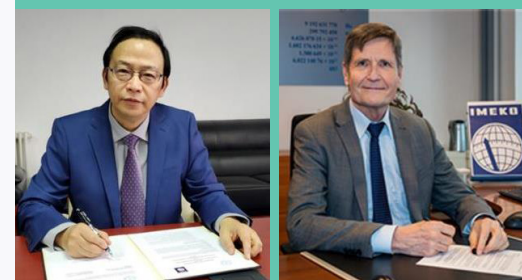
Established together with the Department of Medical Sciences (DMSc), Ministry of Public Health (MoPH), Bureau of Quality and Safety of Food (BQSF) is the food reference laboratory in Thailand. BQSF has missions regarding doing research and analyzing the quality and safety of food by studying, analyzing, researching and developing the knowledge and technology in the field of medical sciences. These activities may encourage the good health of people, aid in solving the public health problems in the country, improve the quality assurance system and support the consumer protection process.

The capability of BQSF covers a wide range of food analyses. Laboratory analysis and performance testing include Chemistry, Microbiology, Biomolecular biology and Physical analysis of food. BQSF also provides Proficiency Testing programs covering Chemistry, Microbiology and Physical analysis of food with ISO accreditation. At present, 24 Proficiency Testing Schemes provided by BQSF are accredited by the Bureau of Laboratory Accreditation, Department of Science and Service, Ministry of Higher Education, Science, Research and Innovation. With the significant functions pertaining to the quality and safety of food in the country, BQSF is committed to improving its mission with the principles of proactive strategy, promotion of allied networks and efficient management in order to enhance a standard quality of life for the public.

Contact: Dr Weerawut Wittayanan, BQSF DMSc, Thailand
E-mail: weerawut.w@dmsc.mail.go.th



Collaboration with the International Measurement Confederation (IMEKO)



APMP and IMEKO (the International Measurement Confederation) signed a Memorandum of Understanding in November 2022 for the coming five years, initiating closer collaboration between the two organizations. The former APMP Chairperson, Mr Fang Xiang, signed the document with the IMEKO President, Prof. Frank Hartig.

IMEKO, founded in 1958, is a non-governmental federation of 42 Member Organizations individually concerned with the advancement of measurement technology. The federation's fundamental objectives are promoting international interchange of scientific and technical information in the field of measurement and instrumentation and bolstering international cooperation among scientists and engineers from research and industrial fields.

APMP Funded Programmes Continued

Post-Measurement Workshop

Making an Impact on Water Quality for Public Health & Safety



Post-Measurement workshop attendees (onsite and online).

As the final stage of an APEC -funded project to build capabilities of Asia Pacific laboratories in assuring water quality, a workshop was organized in March 2023 to review results from three measurement activities, an APEC proficiency testing scheme on trace elements in natural water, the APMP pilot study (APMP.QM-P41), and the SIM supplementary comparison (SIM.QM-S12). The Workshop was supported by APEC, APMP DEC and CWFG, SIM, APAC and PTB.

The workshop was held at Impiana KLCC Hotel in Kuala Lumpur, Malaysia from 6 to 9 March 2023 and hosted by KIMIA. The Workshop objectives were to provide a forum to discuss the outcomes from the measurements undertaken by participating institutes / laboratories in the three measurement activities, to identify capability and knowledge gaps, share requirements and applications of relevant international standards, and to propose action plans for future strategies to improve

laboratory practices, measurement capabilities and quality infrastructure.

Invited speakers:

- Metrology Institutes (Organising Committee institutes and KRISS);
- Standards & Conformance Bodies (those include the Organising Committee as well as NABL, India, and SSC);
- A regulatory body (Health Canada)



The first two days of the workshop were conducted in a hybrid format followed by a 2-day onsite workshop involving 36 participants attending in-person and about 40 attendees online from most APEC economies as well

as APMP and SIM member institutes. Participants include representatives from metrology institutes, accreditation bodies, and testing laboratories in public and private entities from 29 economies.



On 8 March 2023, the workshop celebrated International Women's Day with a special panel discussion. Three accomplished women, Dr Angela Samuel from NMIA, Ms Anita Rani from NABL and Dr Shima Hashim from KIMIA presented their roles in the broader scientific community as well as their views on the skills and attributes that have contributed to their achievements. The session concluded with an inspiring video-recording on Women in STEM from the CEO of SSC, Ms Chantal Guay.

Contact: Dr Fransiska Dewi, HSA, Singapore

E-mail: Fransiska_DEWI@hsa.gov.sg

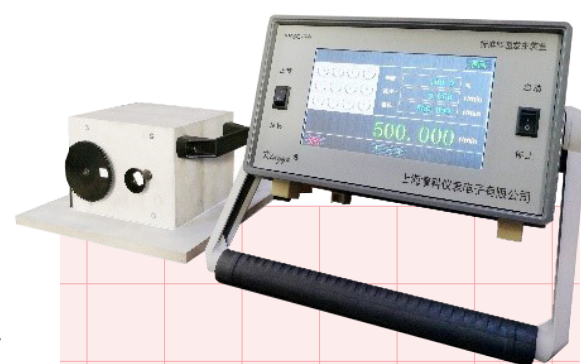
Workshop on Rotational Speed Metrology and Pilot Comparison of Optical Tachometer Calibration

Precise rotational speed measurement has played a significant role in scientific research and industrial applications, such as molecular pump, blower, centrifuge and wind generator. High-performance digital tachometers are most widely used as working instruments, and it requires a formal complete comparison in the metrology field of rotational speed.

With this background, the project titled "Workshop on rotational speed metrology and pilot comparison of optical tachometer calibration" has been overseen by NIM (China), with five participants NMC, NIMT, NML, KEBS and NIS. The project aims to hold a pilot

comparison including both mechanical generator and optical simulator as standard devices, which can improve the global measurement service capacity of optical tachometers and lay a technical foundation for the future key comparison of optical tachometer at APMP TC level, or even at CC level. Currently, the comparison is ongoing and a special session on "Rotational speed metrology" and a remote-training will be arranged in the future.

Contact: Dr Yulin Chen, NIM, China
E-mail: chenyl@nim.ac.cn



Mechanical generator



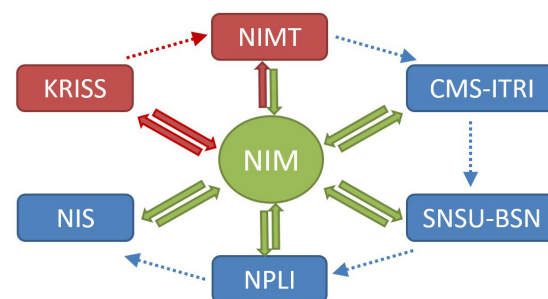
Optical tachometer

Comparison measurement and training courses on the ventilator tester

In response to COVID-19 and future pandemics, two goals will be achieved in this project. First, technical training courses will be provided for DENS to support them in establishing the traceability systems for the ventilator. Secondly, the pilot-study comparison on the ventilator tester will be carried out

for the first time to verify existing calibration methods. A calibration guideline will be drafted by participating NMIs and published.

On 19 March 2021, NIM held the online kick-off meeting of the project. Eight NMIs introduced their measurement capacity or research plan on the metrology of ventilator and ventilator testers, including CMS-ITRI, NIM, NIMT, NIS, NMIA, NPL, NPLI, SNSU-BSN. The one-on-one mentoring mechanism was established among the participating NMIs. The project team held several online workshops, including online training activities. A technical protocol for the pilot-study comparison was finished in September 2022. The comparison was formally started in October 2022. KRISS has finished its measurement as the first participating laboratory and



The progress of pilot-study comparison

the transfer standard has been sent to NIMT for measurement. The project team has also started drafting the calibration guidelines for ventilator testers. The comparison and calibration guidelines are expected to be finished by the end of 2023.

Contact: Dr Xiang DING, NIM, China
E-mail: dingxiang@nim.ac.cn



The ventilator tester



Possible metrological support for COVID-19 crisis management project

This project has been overseen by NIMT, Thailand and designed to improve measurement capabilities for PAPP and PPE suit. During the pandemic where COVID-19 cases have grown rapidly, Thailand and all over the world faced insufficient medical resources. Not only a patient, but our valuable medical staff also required protective gear to protect them as well as to restrain the spread of the disease, such as

a Powered Air-Purifying Respirator (PAPR) during an intubation process. It aims to support the development of PAPR by local start-ups and developers. Not only to be able to design and fabricate but also to test their product according to an international standard and traceable to NIMT. During the project, prototypes of both DIY PAPR and PAPR's pressure testing rig were demonstrated and their information was dis-

tributed.

Another project is to verify the readiness of PPE suits by a non-destructive method using air before staff in healthcare facilities use them in their daily obligations. The processing unit compares the collected data of pressure values with the stored reference value to determine the suit's status under test. The test method is called as equivalence leak rate since every PPE suits always leaks through its seam and fabric. Through this research, it has been found that pressure and flow rate is direct variation. Therefore, the last version of the machine uses only a pressure sensor.



Contact: Dr FLG.OFF.UTHAI NORRANIM,
NIMT, Thailand
E-mail: iro@nimt.or.th

DEC Highlights

The 44th & 45th DEC meetings were held in July and November 2022, demonstrating a high level of engagement across the APMP membership with around 50 participants.

Specific achievements include:

- With MEDEA support, various workshops were successfully organized covering subjects on stakeholder engagement, project proposal writing, strategic planning “Leading your NMI to 2035”. And the DEC Monitoring & Evaluation framework has been developed, besides, a progress made by the Knowledge Management System TF.
- The CMC TF work program was initiated to support five institutes without CMCs from Bangladesh, Cambodia, Jordan, and Sri Lanka, beginning in the area of mass and supported by APMP’s technical experts and TC Chairs.
- The Focus Group TF actively engaged with several APMP Focus Group Chairs as well as increased developing NMI participation in these activities. A Workshop with the Climate Change and Clean Air Focus Group was held in September 2022.
- The Future Proofing TF continued the webinar series on “SI units: Practical realization and how to assure measurement traceability” in 2022, covering the mole, the second and the ampere. The TF Lead also organized an outstanding workshop on Digital Calibration Certificates in late June, attracting more than 260 participants.
- Ongoing work was undertaken by the DEC Chair, working with the DEC Coordination Committee and APMP Treasurer, on the proposed revisions to APMP’s membership fee structure and classifications – with a Consultation Session undertaken in October to discuss the proposals with Members.

Handover to New DEC Chair, Mr. S.D.I Dias

At the 35th APMP GA, Dr Angela Samuel completed her term as DEC Chair, officially handing over the role to Mr S.D.I Dias, Deputy Director of the Measurement Units, Standards and Services Department (MUSSD), Sri Lanka.

Dr Samuel takes this opportunity to express her deep gratitude to all DEC and APMP members, and in particular;

- Members of the DEC Coordination Committee: Mrs. Gao Wei (NIM, China), Mrs. Ajchara Charoensook (NIMT, Thailand), and Dr. Ghufron Zaid (SNSU-BSN, Indonesia)
- The DEC Task Force Leads – most recently Dr Zaid, Mr Michael Solis (ITDI, Philippines), Ms Thanakporn Nontachart and Dr Jariya Buajarern (NIMT, Thailand), Mr Dias and
- Dr Victoria Coleman (Lead TC Chair), TC and FG Chairs, Dr Teo Tang Lin (the APMP Treasurer) and the APMP Secretariat as well as MEDEA colleagues.



Progress of MEDEA 3.0

Progress of MEDEA 3.0



MEDEA 3.0 is the third project funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) within the framework of regional cooperation with Asia.

As part of the project, the workshop “MEDEA - APMP DEC Strategic Planning Review Workshop” was held together with the DEC from 14 to 17 February in Bangkok, Thailand, with the aim of, among other things, enhancing the implementation of the DEC Strategic Plan through better use of existing initiatives, support and resources in and outside APMP.

A webinar series on “How to write metrology case studies” was conducted in January and February and will result in approximately five case studies

that will be published on the joint APMP and APLMF metrology portal (<https://metrologyasiapacific.com/>).

In addition, a programme to develop policy briefs to promote the work of NIMs is ongoing. A policy brief is a concise summary of a particular topic or issue, written to help readers understand – and likely, make decisions about – the topic. Currently, the programme develops three policy briefs regarding the topics; water, digital health and pre-packed products.

Following the first online workshop in August 2022, the second on-site workshop and training course on “calibration capability for infusion/syringe pump analyzers” will take place in April at NIMT, Bangkok, Thailand.

In the coming months, the project will further support the work of the DEC Task Forces, the development of technical training and e-Learning material.

Contact: Anna Kalkuhl, PTB, Germany
E-mail: anna.kalkuhl@ptb.de

Greetings from New EC, TC and FG Chairs-elect

EC member

Angela Samuel NMIA, AUSTRALIA

Firstly, thank you to all Members for supporting my election to the APMP Executive Committee, I very much look forward to working with Dr Park as the new APMP Chair together with the immediate-past Chair Mr Fang and all my EC colleagues. As Dr Park has said, we are living in a period of global challenges and change. However, the pandemic has only strengthened the spirit of APMP that I have admired for many years, as a community that comes together to support each other, using its considerable expertise and capability to not only do our best for our societies through tough times, but to embrace the lessons to be learned, as well as new opportunities that advance in science and technology present. I am delighted that my EC responsibilities include liaison with APMP's Developing Economies Committee, and am keen to use the position to continue to support our developing members, working with the new DEC Chair, Mr Dias. It is a pleasure to also be the EC Liaison for the APMP-APAC Proficiency Testing Working Group, and support Dr Tang Lin Teo, the new Working Group Co-convenor. I look forward to supporting the work of APMP's e-Learning Working Group in my third EC Liaison role. There's a lot to do but a lot of expertise, experience and energy to draw upon as we continue to lift each other up and thereby lift APMP up to meet the challenges and changes ahead!



EC member

Venu Gopal Achanta NPLI, INDIA

I wish the new year is treating you all well. I would like to take this opportunity to thank you for giving me the opportunity to learn from you all and contribute to the APMP community. On 8th March this year India celebrated the festival of colors, Holi. It means the change of season, summer is around the corner, and heaters are to be replaced with air conditioners. The message is clear: we all have a continuous energy demand. With some of the fast-growing economies and more than half the world's population, the APMP economies have to further focus on future clean energy technologies, improve transmission, as well as find ways to use energy more efficiently. In 2021, we created the Digital transformation in metrology focus group (DXFG) to embrace the newer technologies. As we all know, we have a long way to cover in a short time to set the mechanisms in place for digital metrology. I look forward to having stronger interactions so that Energy efficiency and digital transformation focus groups contribute to our economies.



Lead TC Chair-elect

Chunhui Li**NIM, CHINA**

I am Chunhui Li from the national metrology institute, China (NIM). As a senior researcher, I have worked in NIM since 2005, focusing on the research of the gas flow field. I am honored to be elected as the Lead Technical Committee (LTC) Chair. I sincerely appreciate the support from NIM, and encouragement from Dr. Victoria Coleman, the current LTC chair. I will try my best to work together with all the TC chairs for the next 3 years.



TCFF Chair-elect

Woong Kang**KRISS, KOREA**

I am honored to be elected as TCFF Chair and to serve you all the APMP community for the next three years. I would like to thank the former Chair Dr. Chunhui Li, and all the members for their great efforts. The TCFF has covered the cooperation of APMP technical activities in the field of Fluid Flow, Liquid Volume, and Viscosity through the linkage of CCM-WGFF of the CIPM and TCFF in other RMO. The TCFF also supports the management of APMP comparisons and CMC review process to build and claim CMCs of member economies in APMP. Over the next three years as the TCFF chair, I will do my best to support all TCFF members in improving our metrological capabilities through close collaboration. I'm looking forward to seeing you at the future meetings.



TCFF Chair-elect

Kazumoto Hosaka**NMIJ, JAPAN**

Warm greetings to you. I am truly honored to be elected to the next TCTF chair. First, I would like to show respect for the great activities and all efforts of TCTF members during the long history of the APMP. I think that the redefinition of the SI second would be the most important topic over the next 10 years for the people working in the fields of the Time and Frequency. The new definition must be acceptable by all NMIs, whether one will have the capability to develop their own primary or secondary frequency standard, or not. On this occasion, it is very important to develop closer collaboration between members in work on frequency standards within the APMP. I will try my best so that I can be helpful to you, and I would appreciate it if you could support and cooperate with me for the TCTF. I am looking forward to meeting you all in person soon.



CCCAFG Chair-elect

Hong Lin

NIM, CHINA

It is my great honor to be the chair of the Focus Group on Climate Change and Clean Air. We are helping the stakeholders improve the air quality and carbon flux measurement. A science-based urban GHG and air pollutant information system in a megacity were built to report the carbon flux in time and fulfill the data quality requirement(MVR). Many techniques have been successfully tested over 3 years, such as stack flowrate measurement, air pollutant concentration measurement in the field, traffic emission monitoring, low-cost sensor metrology, cavity ring-down spectroscopy, differential absorption lidar, inversion model and reference gas. I understand that one of the main goals of our activities is to get the carbon data to be accurate and consistent. For this goal, we will have comparisons, review protocols, techniques exchange and sharing, and so on. I would like to give my best to help all Focus Group members achieve this goal. I am looking forward to working with you to promote the innovation and application of GHG and air pollutant measurement technologies in the Asia-Pacific region.



CWFG Chair-elect

Richard Shin

HSA, SINGAPORE

It is a great honor and my pleasure to be elected as the next Chair of APMP's Clean Water Focus Group (CWFG). Thanks to the hard work of previous Chairs, Dr Ghufon Zaid and Prof Liandi Ma, the CWFG has made significant progress in growing and promoting APMP activities in the area of water quality to APMP's internal and external stakeholders. Water quality continues to be a priority for all economies and is essential in protecting public health against communicable diseases. I look forward to continuing work with all the members of the CWFG, as well as other FGs, TCs, DEC and PTWG to deliver on the objectives of the focus group. I hope to see you all in-person at the coming meetings.



MMFG Chair-elect

Il Doh

KRISS, KOREA

I am honored and pleased to be elected as the new chair of the Medical Metrology Focused Group (MMFG) after Dr. Ding Xiang. In particular, as a person who prepared the first Medical Metrology Workshop at APMP 2014 held at KRISS, my new role as the MMFG chair is more meaningful to me. Medical metrology is essential for a safe and healthy human life, and we all have reconfirmed the importance of medical metrology through COVID-19. With the efforts of former chairs and the members, MMFG has been carrying out cooperative activities to develop measurement standards for blood pressure monitoring devices and ventilators. I will do my best to lead Medical Metrology through cooperation with APMP member institutes.



APMP Award 2022

Toshiyuki Takatsuji NMIJ, JAPAN



APMP Award 2022



I am honored to receive the APMP Award. The development of quality infrastructure is essential for the future development of society, and I am pleased to have been able to contribute to the activities of the APMP, which plays an integral role in the quality infrastructure. In addition to its diverse and positive activities, APMP prides itself on its friendly atmosphere. It has been a valuable and enjoyable experience for me to work together with many colleagues in this atmosphere. I would like to express my gratitude to Dr. Takehiro Morioka and Ms. Mikiko Akaoka, my secretaries, for their great cooperation in helping me to successfully complete my term as Chair. The Asia-Pacific region will lead the world in the future, both academically and industrially, and I wish APMP's continued growth and success.

Wei Gao NIM, CHINA



APMP Award 2022



I feel very honored and grateful to be one of the two awardees for the APMP Award. It has been about 20 years since I worked for the APMP community in the first place. I served as the APMP EC member from 2016 to 2019 and as the DEC Coordinating Committee since 2018 as well as NIM's representative in DEC, where I've been able to contribute my part to developing member economies by engaging in capacity-building activities. Meanwhile, I was given the opportunity to witness and establish NIM's closer cooperation with APMP as an organization and many APMP member institutes. I can still recall when we held the APMP 2004 and APMP 2015 and met our friends from the APMP community. This has been a wonderful journey in my career and I am so pleased to have worked with so many great scientists from this

region. Knowing that NIM will hold APMP 2023, I'd like to wish it a complete success and look forward to meeting old and new friends in China.



APMP Technical Activity Awards 2022

Ajchara Charoensook NIMT, THAILAND



EC member (2018 - 2022)



It was my honor and a privilege to serve APMP as an EC member. My role was the liaison between EC and DEC as well as Focus Group for Energy Efficiency. It was an opportunity to learn a lot from working with all committee members and I realized that role and responsibility of the Executive committee are a tremendous task which cover management and cooperation as well as setting up the APMP's strategic direction. My appreciation and sincere thanks to EC, TCs, DEC, FGs, the Secretariat and all APMP members for your kind contributions and support during my three years term. It is also an honor to be awarded the APMP Technical Activity, this is the fourth APMP award for me almost 24 years experiences in Metrology community. Time passes very quickly, APMP has become a big family and

plays a good role in the global metrology communities. I wish APMP to continue successfully. Finally, my best wishes to all APMP members for your good health and new success in the coming year. I also owe my thanks, deep admiration and appreciation to all of my colleagues at NIMT for being part of my journey (1998-2022).

Ping Yang NIM, CHINA



TCQS Chair (2019-2022)



I feel very honored to be one of the APMP Technical Service Award awardees. I joined APMP in 2007 in the AUV field in Sydney and was elected as TCQS Chair in Sydney in 2019. During my term as TCQS Chair from 2019 to 2022, we face many challenges because of the COVID-19 pandemic. Under the leadership of former APMP Chair Mr. Fang Xiang, and with the strong support from many other TC Chairs, TCQS drafted the policy to provide guidelines for the quality management and technical activities during the pandemic for APMP member institutes. This makes both the APMP quality system and technical peer review feasible, ensuring the validity of the quality system and CMCs for each member institute, even during the pandemic. Besides, TCQS carries out many quality system reviews for

institutes in all TC fields within APMP and works closely with JCRB and other RMOs. As former TCQS Chair, I worked hard and felt honored to serve the APMP community. But it is a pity that I became an authentic online TC chair because of the pandemic. As the 2023 APMP GA will be held in Shenzhen, China, I look forward to meeting more friends in person.

Duncan Butler ARPANSA, AUSTRALIA



TCRI Chair (2019-2022)



I am honored to serve as TCRI Chair for three years and receive an APMP Technical Activity Award. I wish to thank the previous Chair, Dr Jinjie Wu, and all of the members of APMP TCRI for their contributions and assistance, especially the comparison pilots. Unfortunately, due to the timing of the pandemic, TCRI activities were largely online during my time as Chair. Thank you everyone for your patience! I hope that we can return to face-to-face meetings, but retain some of the accessibility that came with the online meetings. I will continue to work with APMP colleagues and the new Chair, Dr Chien-Hau Chu, for the further development of ionizing radiation measurement capabilities in our region.

Lingling Ren NIM, CHINA



TCMM Chair (2019-2022)



I appreciate very much for the APMP Technical Service Award. Thank the APMP Secretariat and all APMP/TCMM members for their cooperation, support and assistance to my work in the past three years. It is a great honor for me to work and serve for APMP/TCMM. And I am glad to see that TCMM and VAMAS have worked together in the past three years. We jointly completed the VAMAS leadership interview for Mr. Fang Xiang and two international comparisons of AFM measurement of graphene oxide thickness and TEM measurement of Si {220} interplanar spacing. Furthermore, TCMM and the Advanced Manufacturing EMN of EURAMET started cooperation on a workshop of Materials Metrology Gaps. In TCMM, a SC comparison of film thickness is being carried out with TCL. In addition, TCMM's work plan for the next three years was formulated, and the first-round survey on the needs

of material measurements under TCMM was completed. The material industry is the cornerstone of the economic development of all countries and needs the technical support of material measurements. I firmly believe that we will achieve better development under the leadership of the new Chair. Thank you again for all of your support!

Angela Samuel NMIA, AUSTRALIA



DEC Chair (2018-2022)



Being Chair of the APMP Developing Economies Committee (DEC) has been the most rewarding experience of my professional life. I thank all my DEC and APMP colleagues for their support and, in particular, Dr Ghufon Zaid (Indonesia), Mr Michael Solis (Philippines), Ms Thanakporn Nontachart (Thailand), Mr S D I Dias (Sri Lanka) and Dr Jariya Buajarern (Thailand), my wonderful Task Force (TF) Lead colleagues and friends, without whom the achievements over the past three years in implementing the DEC Strategic Plan simply would not have been possible. I also appreciate the wisdom of Ms Ajchara Charoensook, Dr Zaid again and Ms Gao Wei, as members of the DEC Coordination Committee and the invaluable contributions from Dr

Tang Lin Teo (APMP Treasurer), Dr Victoria Coleman (Lead TC Chair) and support of the NIM APMP Secretariat. I sincerely thank colleagues from the MEDEA project for their overarching backing, expertise and inputs – it is a pleasure to work with you, also in supporting the outstanding complementary work you deliver to support developing APMP member institutes.

While it was unfortunate that the pandemic constrained our ability to do more, I am proud of how much we have delivered. In particular, I named the economies from which the TF Leads come to highlight that the progress we have made has been a truly collective effort, with developing economy representatives leading initiatives to help themselves. I was asked what I love about my work at an International Women's Day panel last week. What I love is having the opportunity to work with all of you – you inspire me every day through your commitment, capabilities, tenacity and integrity. It has been an enormous privilege to have the opportunity to ensure you are on the platforms you need to be and to be an advocate, bridge and amplifier in having your voices heard once you're there!

Della Sin GL, HONG KONG, CHINA



Co-convenor, APMP-APAC Joint PT Working Group (2013-2022)



I feel very privileged to have had the opportunity to be invited to pilot the work about the important collaboration between APMP and the then APLAC in respect of the coordination of joint proficiency testing programmes ten years ago. While the collaboration has been growing from strength to strength, I have greatly benefited from the interaction and generous sharing of wisdom and experience from fellow colleagues from both APMP and APLAC, which amalgamated with another regional accreditation cooperation to become APAC on 1st January 2019. It is great to see the collaboration between APMP and APAC continues to flourish. Last but not least, I wish both APEC Specialist Regional Bodies much success in the days to come, and I hope to be able to continue contributing in some way.

Members of the APMP Secretariat (2019-2022)



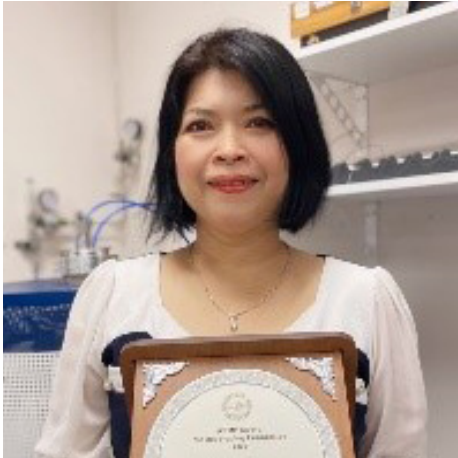
The NIM APMP Secretariat team, Ada, Jinyuan, Kelly and Aria, sincerely thanks APMP and EC members for giving the four of us this great honor to receive this award! We give our deepest respect to EC members and Committee Chairs, who have dedicated the most to APMP, enabling its steady developments under the difficult circumstances in the past three years. We wish to thank those colleagues from Member Institutes, from NIM, and from partner organizations who have given us generous support when we need. We also consider ourselves very lucky working with Mr. FANG Xiang, who motivated us with trust and always backed us up by pointing us

in the right direction. As the Secretariat, we have tried to bring new progress for APMP in strategic planning, in establishing new collaborations against COVID-19 and digitalization, and in improving operation and governance of the organization. In turn, we've learned so much from this journey and have grown both personally and professionally. We wish APMP a brighter future, and we look forward to seeing you all, face to face, at the APMP 2023 in Shenzhen, China!



APMP Award for Developing Economies

Oijai Ongrai NIMT, THAILAND



It's my great honor to be awarded the APMP for Developing Economies 2022. I would like to thank the APMP Award Advisory Committee for the very kind recognition of me, and thank NIMT, the National Institute of Metrology (Thailand) for the great chances for me to work with the APMP Energy Efficiency focus group, including presenting in TCT workshop & other metrology events. As a metrologist in developing economies, I am very pleased to continually apply my expertise in thermometry and energy measurements for impact-highlighting the measurement sciences for sustainable development to industries, agencies, and stakeholders in Thailand and our region of Asia Pacific.



APMP Young Metrologist Prize

Seok Hwan Lee KRIS, KOREA



Receiving the APMP Young Scientist Award is an honor and a blessing that I could not have achieved on my own. First and foremost, I would like to thank the APMP Award Committee for recognizing my research. Further, I would like to express my gratitude to KRIS for recognizing my potential and providing me with valuable research experiences so far. I am sincerely grateful to my colleagues at KRIS, who have been instrumental in my research journey. KRIS is undoubtedly one of the best places to conduct quality research, and I feel fortunate to have had the opportunity to work alongside such outstanding colleagues. With their support, I am confident that I will continue to thrive in my research endeavors. I would like to extend my appreciation to my APMP colleagues in the field of fluid

flow. Our international research on microflow standards has significantly contributed to my knowledge, and I hope that we can continue to collaborate on global research efforts at APMP. As a metrologist, I am eager to utilize my knowledge to address energy and environmental challenges associated with fluid flow. Receiving the APMP Young Scientist Award is a tremendous honor, and I remain committed to producing impactful research outcomes. Finally, I would like to share this recognition with my beloved family, who have always supported and encouraged me. Thank you, and I wish you all a happy year!

News from Members

In an IoT-enabled smart city, the deployment of sensors is crucial for achieving the architecture of the perception layer of the Internet of Things. One of the most widely deployed sensors is smart meters, which measure utilities like water, electricity, and gas. Therefore, it is essential to establish high-accuracy and compatible smart meter verification regulations and test facilities to implement national infrastructure. CMS/ITRI has developed reg-

CMS ITRI

Smart Meter Verification System CMS/ITRI, Smart Meter Verification System

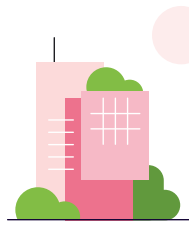
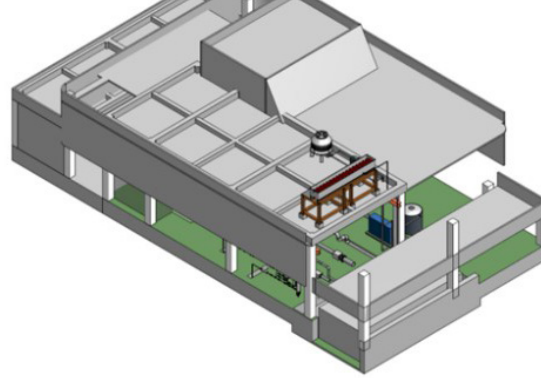
ulations based on international standards for the performance test and facilities of smart meters. The aim is to ensure fair trade transactions, public safety, and promote the development of related industrial technologies.

For water meters, CMS/ITRI uses volume and master meter measurement technologies to establish the indicator error test for initial verification

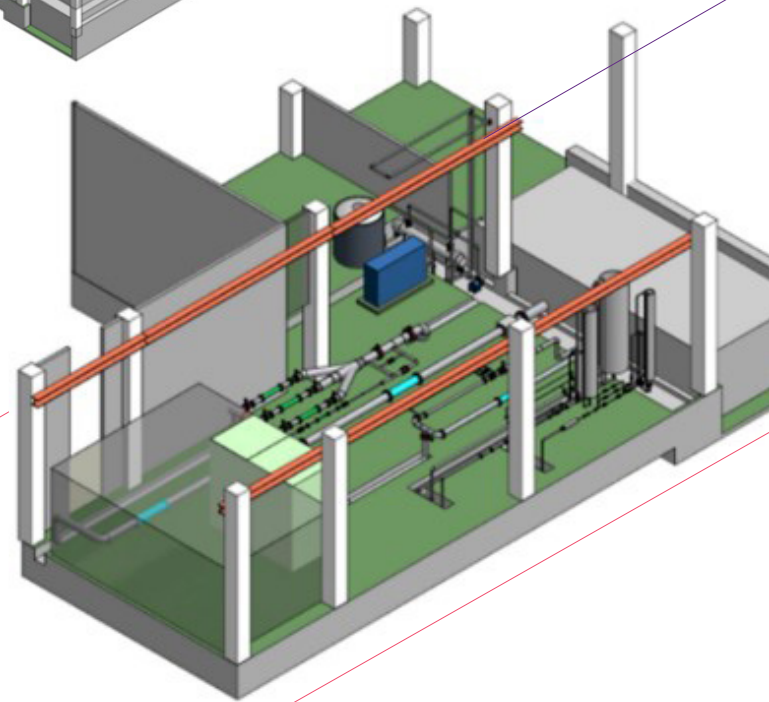
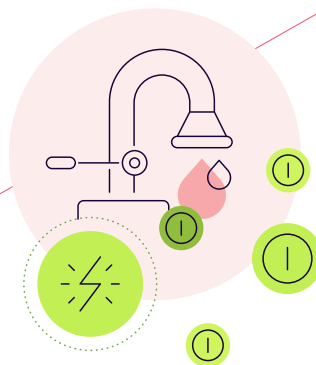


testing. The new system includes an AI smart meter reading system coupled with a self-developing CCD camera. The camera can be fixed on the meter indicator to prevent the effects of external light sources. The transmission and recognition time for one image is between 1-20 seconds, and the sensitivity rate is up to 97%. This new system can automatically read water meters, reducing the workload of manual reading.

For gas meters, CMS/ITRI has established a smart gas meter verification and data acquisition system based on its high-precision and stability sonic nozzle bank measurement system. The system complies with OIML R 137:2012 and can automatically capture data from five LPG meters (Liquefied Petroleum Gas) or NG (Natural Gas) meters simultaneously.

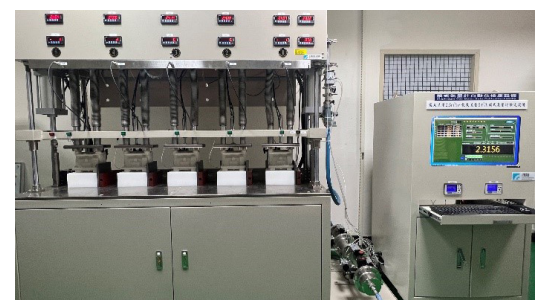


CMS/ITRI is currently in the process of designing a new smart water meter type approval and verification test system, which will comply with the standards set out in OIML R 49:2013.



Moreover, CMS/ITRI is working with the government to design a new laboratory that provides online electronic services for performance testing, metering performance testing, and safety regulation testing. The laboratory will include a cross-domain real-flow test system, including an anechoic and a damp heat chamber. This system will comply with OIML R 49:2013 and OIML R 137:2012. The laboratory is expected to be completed in 2025 and will provide services to the public.

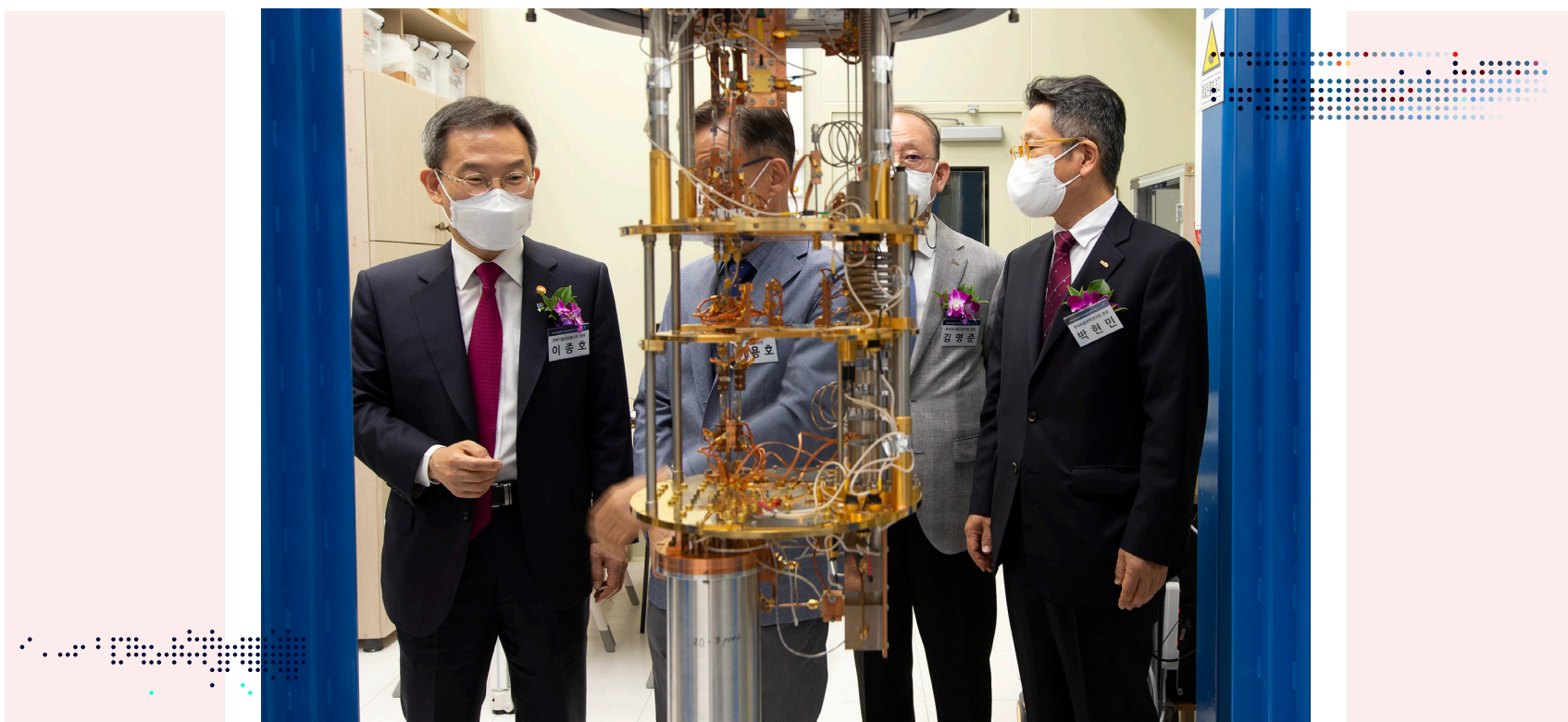
In conclusion, the smart meter verification system developed by CMS/ITRI is essential to an IoT-enabled smart city. With high accuracy and compatibility of smart meter verification regulations and test facilities, CMS/ITRI is helping to ensure fair trade transactions, public safety, and promote the development of related industrial technologies.



Contact: Dr Jen-Chieh Wang, CMS/ITRI, Chinese Taipei
E-mail: DuskJCWang@itri.org.tw

KRISS

As a leading institute for the national project to establish quantum infrastructure in Korea



Quantum technology is a strategic technology essential for future industries and security, and it has been drawing greater investment from major countries around the world. With the goal of joining the top four countries in quantum technology by 2030, the Korean government has laid out technical goals in specific areas, and is reinforcing related support. By the early 2030s, it aims to present demonstrations of error-free quantum computers that surpass supercomputers, and to expand the current 100-km quantum cryptography technology to the level of a nationwide network.

KRISS, which aims to become the top research institute in quantum technology, is currently leading “the Quantum Computing Infrastructure Development Project”, launched for intensive development of quantum technology and related infrastructure. The goal of this project is to develop a 50-qubit superconducting quantum computer by

2026. For this purpose, KRISS established the Center for Superconducting Quantum Computing System, and plans to construct the Quantum Computing Research Building within its grounds by 2023.

KRISS is also participating in the development of core technology for quantum internet in a project and carrying out various tasks in collaboration with two research institutes in Korea, ETRI and KIST. KRISS will conduct technological research to develop an initial model of wireless and wired quantum relay devices and secure source technology of quantum memory, a key component of future quantum relay devices.

In March 2023, KRISS was officially designated as “the national technology strategy center for quantum technology” by the Ministry of Science and ICT. KRISS will establish a quantum research and development investment strategy covering all areas of quantum science

and technology, such as quantum computing, quantum communications, and quantum sensors. It will not only investigate and analyze quantum investment issues at home and abroad, but also perform various related tasks, including in-depth technology strategic research on quantum investment.

Contact: Seongsoon Yang, KRISS, Korea

E-mail: yang2s@kriss.re.kr

NIMT

Strengthening of Measurement Capabilities for Toxic Inorganic Elements to Support Fish & Shrimp Food Industry

While most people enjoy seafood, it contributes to one of the largest sources of toxic elements in our diet. Therefore, it is pivotal for metrology institutes to be equipped with measurement capabilities for toxic elements and arsenic species in fish and fish products. By highlighting the importance of accurate measurements of toxic elements and metrological traceability, member institutes of the Food Safety Focus Group (FSFG) worked together to reach out to different key stakeholders.

The FSFG_01_FGI2020 project was a collaborative series of activities that include: Virtual symposium entitled “Horizon scanning on the presence of inorganic elements in seafood and their measurements” on 31 May 2021, On-line-training workshop on analysis of inorganic elements, total arsenic and arsenic species in seafood as well as

evaluation of measurement uncertainty dated on 1-4 June 2021, Post-training activity on “Toxic inorganic elements in seafood” completed in February 2022, and Virtual symposium entitled “Metrological traceability in food measurements” was 13 July 2022.

The project leveraged on the existing capabilities of established metrology institutes to better equip emerging institutes with relevant measurement capabilities prior to the supplementary comparison for toxic elements in seafood (APMP.QM-S19). Moreover, the workshop and symposium have raised awareness amongst the key stakeholders on the importance of accurate and traceable measurements through the use of certified reference materials (CRMs) and participation in accuracy-based proficiency testing (PT) programmes.



Samples, certified reference materials and isotope spikes provided to the participants as part of the post-training activity

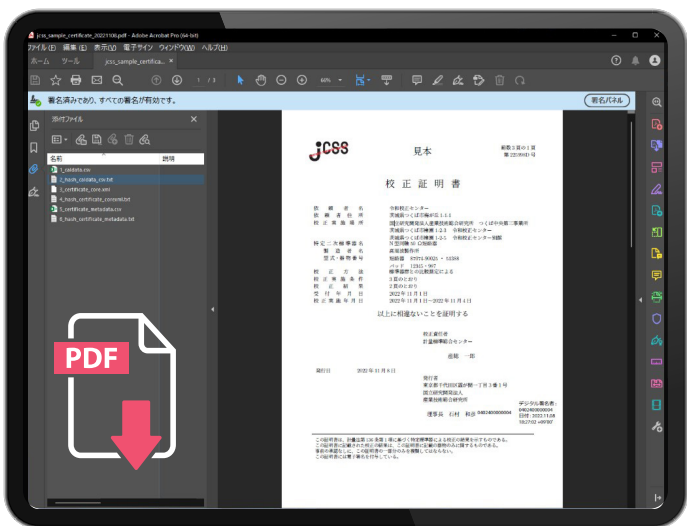
Contact: International Relations Office, NIMT, Thailand
E-mail: iro@nimt.or.th



Virtual symposium

NMIJ

NMIJ, has initiated an official service for issuing Digital Calibration Certificates (DCCs)



A sample of DCC

During the year 2022, NMIJ and AIST have carefully made interactions with domestic stakeholders upon their demands. Through such communication, we have identified that many stakeholders prefer to experience a

moderate transition to digitalization. Having the leading examples such as the PTB's XML approach and the PDF approach proposed by METAS, and conducting some further investigations upon the ISO Standards related to PDF, we have selected the PDF approach to implement our first Digital Calibration Certificate (DCC) to be issued under our governing domestic law. The PDF file has an appearance very similar to our existing calibration certificates issued on paper. However, for the customer's benefit, it also includes embedded digital data, such as the calibration metadata and

moderate transition to digitalization. Having the leading examples such as the PTB's XML approach and the PDF approach proposed by METAS, and conducting some further investigations upon the ISO Standards related to PDF, we have selected the PDF approach to implement our first Digital Calibration Certificate (DCC) to be issued under our governing domestic law. The PDF file has an appearance very similar to our existing calibration certificates issued on paper. However, for the customer's benefit, it also includes embedded digital data, such as the calibration metadata and

calibration results in CSV format. Considering the consistency with our paper certificates, the calibration results appearing on the PDF surface are genuine, embedded, and identical digital data are provided as a courtesy. Even such a format will be a great benefit compared to paper certificates for customers in RF (e.g., RF impedance, antenna factor, etc.) and other calibration reports that contain a large amount of data.

Since November 2022, we have officially initiated our service to issue DCCs for prepared service items. Among the approximately 600 service items we provide, we still have only a few capable and ready for issuing DCCs. We prioritize starting the issue of DCCs for service items containing a large amount of data or for those services we serve frequently. We have just stepped on the starting line and will continuously expand the service items as well as improve our DCC format to fit the customer's demands.

Contact: Dr. Satoru Kurokawa, NMIJ, Japan
E-mail: satoru-kurokawa@aist.go.jp

UzNIM

Reorganized as a State Institution

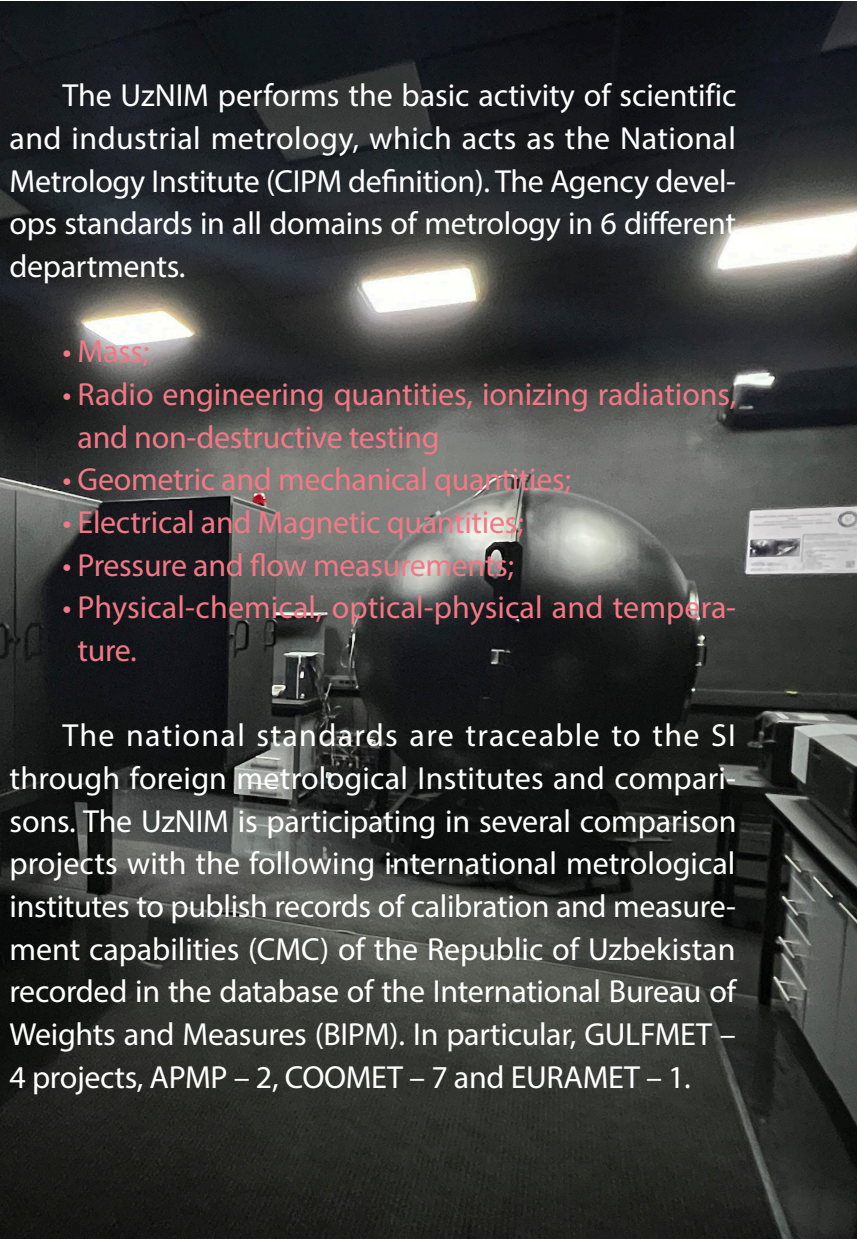
The "National Institute of Metrology of Uzbekistan" State Enterprise ("UzNIM" SE) was reorganized as a State Institution ("UzNIM" SI) under the decision of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to reorganize and terminate the activities of enterprises with state participation" No. 350 dated June 3, 2021.

Nowadays, UzNIM has 23 standards, 156 working standards, 22 comparison laboratories, 10 calibration laboratories and 3 international level calibration laboratories (pressure, temperature and mass). The organizational structure of UzMIM includes 6 technical departments, one center of calibration and measurement services, and 16 regional branches in the regions.

The UzNIM performs the basic activity of scientific and industrial metrology, which acts as the National Metrology Institute (CIPM definition). The Agency develops standards in all domains of metrology in 6 different departments.

- Mass;
- Radio engineering quantities, ionizing radiations, and non-destructive testing
- Geometric and mechanical quantities;
- Electrical and Magnetic quantities;
- Pressure and flow measurements;
- Physical-chemical, optical-physical and temperature.

The national standards are traceable to the SI through foreign metrological Institutes and comparisons. The UzNIM is participating in several comparison projects with the following international metrological institutes to publish records of calibration and measurement capabilities (CMC) of the Republic of Uzbekistan recorded in the database of the International Bureau of Weights and Measures (BIPM). In particular, GULFMET – 4 projects, APMP – 2, COOMET – 7 and EURAMET – 1.





Contact: Gayrat Sheraliev, UzNIM, Uzbekistan
E-mail: interdep@nim.uz

VNIIM

Technology of high-precision measurements of LTEC for high temperatures

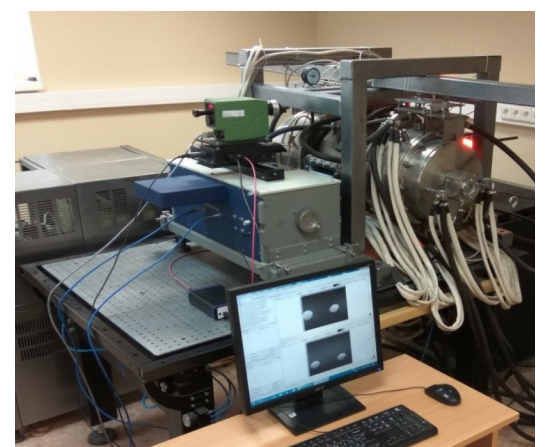
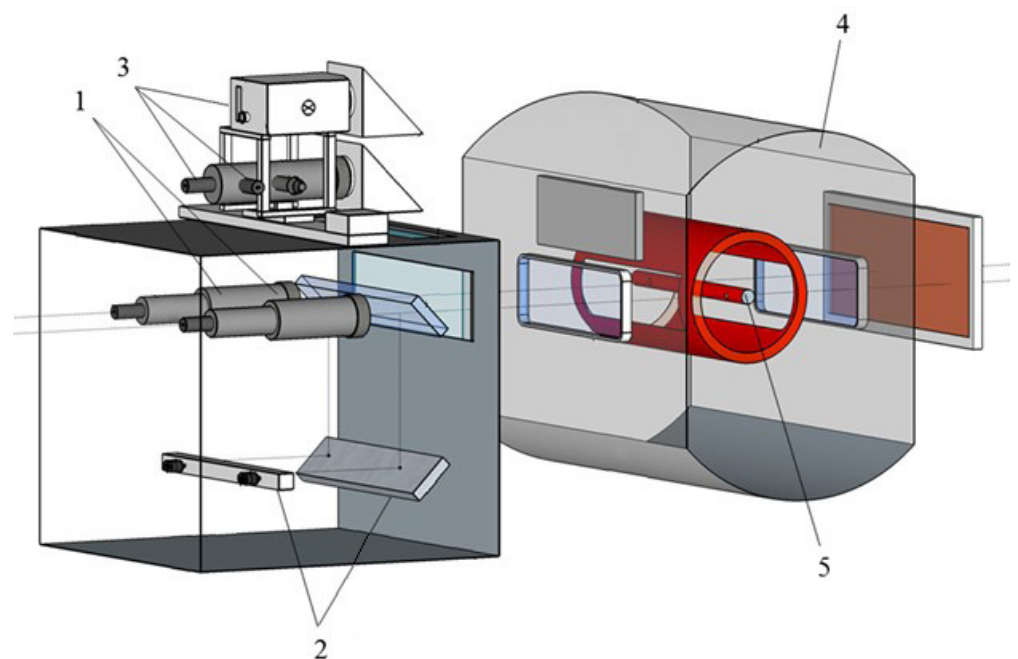
To meet the demands of the most advanced areas of science and technology, including innovative composite (carbon, ceramic, metal) materials research used in aerospace technology, nuclear industry and mechanical engineering, at D.I. Mendeleev Institute for Metrology a high-temperature optical dilatometer DOV-1 was developed. It provides high-precision measurements of the linear thermal expansion coefficient (LTEC) in the temperature range of 1000 to 3000 K. Accurate measurements in such an extremely high-temperature range are difficult since intense heating affects all elements of the measuring path and causes distortion significantly reducing the accuracy. An unparalleled built-in permanent calibration and correction system was used and made it possible to achieve the uncertainty of LTEC measurements from 0.7 to 1.5 % depending on the temperature, which is currently a record in this field of measurements. Another important aspect is that the range of shapes and parameters of the samples of materials to be

measured was greatly expanded recently. Previously high-accuracy LTEC measurements were only possible using specially shaped samples, and transferring the unit to most commercial dilatometers was impossible. Taking into account all the advantages, the new dilatometer is a unique instrument and is in demand in science and industry for transferring the LTEC unit in a high-temperature range.

Contact: Dr. T.A. Kompan, VNIIM, Russia
E-mail: T.A.Kompan@vniim.ru

DOV-1 structure

1. optical measurement system
2. calibration and correction system
3. temperature measuring system
4. heating furnace
5. sample



High-temperature optical dilatometer DOV-1

 Future Meetings



2023 APMP Midyear Meetings

The 2023 APMP Midyear Meetings will take place from 12 to 16 June 2023 at the Blue Sky Hotel and Tower in Ulaanbaatar, Mongolia. The meeting will be hosted by the Mongolian Agency for Standardization and Metrology (MASM). APMP is always excited to host our colleagues from around the Asia Pacific region, and we strive to ensure these meetings are memorable experiences for all involved. We look forward to seeing you in Ulaanbaatar.

SHENZHEN 11.27-12.03 2023
CHINA



2023 APMP General Assembly & Related Activities

The 39th APMP General Assembly & Related Activities in 2023 will be organized by NIM, China. We are delighted to inform you that NIM has decided to organize full-scale in-person meetings from 27 November to 3 December 2023 in Shenzhen, China. We look forward to meeting the entire APMP family face-to-face for the first time since our last full meeting in Sydney four years ago!

APMP SECRETARIAT

Executive Secretary

Dr. Samyong, Woo

Members of Secretariat

Ms. Taeyi, Hong

Ms. JiAe Jun

Ms. HyunJeong, Lee



APMP Newsletter

Korea Research Institute of Standards and Science

267 Gajeong-Ro, Yuseong-Gu,
Daejeon 34113, Rep.of Korea

Phone: +82 42-868-5692

E-mail: APMP_Secretariat@kriss.re.kr

Website: www.apmpweb.org