

APMP NEWSLETTER

Asia Pacific Metrology Programme

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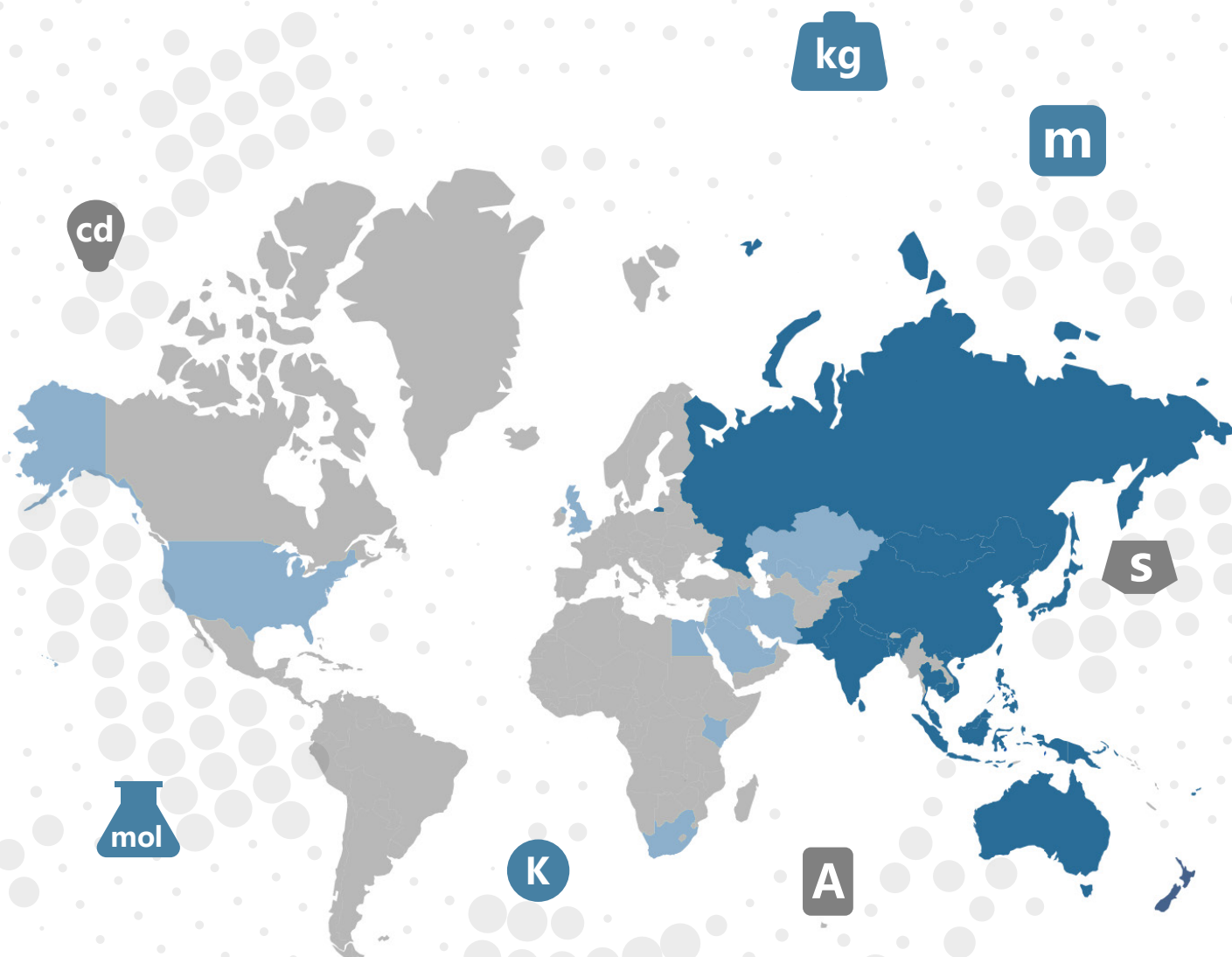
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Issue 45

March 2021



Greetings from APMP Chair

Dear fellow colleagues,

At the beginning of 2021, I'd like to wish all of you a happy, safe and fulfilling new year. Despite of the impacts that COVID-19 has brought to us in 2020, the whole world is now reviving little by little as countries have cooperated in positive and effective measures to fight against the pandemic. This is also what we have done in metrology community, including the APMP, where NMIs proactively contributed their expertise to support national efforts in cutting off the transmission and searching for the cure. Now that the vaccines have come out and the number of vaccinations grows, I sincerely hope that we can enjoy a normal life in a not far future.

As for APMP, the year of 2020 is marked by an overall transfer to online activities. The 2020 Midyear Meetings and the 2020 General Assembly (GA) and Related Activities were both held online. In the first year of my term as APMP Chair, I have worked with APMP colleagues to focus on three priority tasks: strategic planning, regional collaboration in response to COVID-19, and improvement of organization governance. With joint efforts of APMP colleagues, the GA 2020 has been able to bring conclusion or phased conclusion to a series of activities that reflect these work priorities, and we are pleased to introduce them in this issue.

I'd like to take this opportunity to thank EC members, the Secretariat and Chairs of all APMP organizations in particular for their commitment during the difficult time. The same gratitude is extended to all members and our friends in the BIPM, the CIPM, other RMOs and SRBs for their liaisons with APMP.

In Chinese Zodiac, the year of 2021 is the ox year with auspices of profound opportunities and greater achievements. May 2021 be a year of gain and hope for you! Together with solidarity, we will try to secure more tangible results for the future.



FANG Xiang

APMP General Assembly & Related Activities, 2020

The 2020 APMP General Assembly (GA) and Related Activities (APMP 2020) were held as a series of online meetings from 2 to 27 November 2020. This month-long meeting season is comprised of a record-setting 43 video conferencing sessions of 25 meetings, including annual meetings of the Executive Committee (EC), the Technical Committee Chairs Forum (TCCF), the 12 Technical Committees (TCs), the Developing Economies' Committee (DEC) and the 5 Focus Groups (FGs), and have involved about 300 participants in total.

The APMP 2020 bears special significance as it has brought conclusion or phased success to a series of initiatives fermented since the beginning of the year and kicked off at the Midyear Meetings in June. These initiatives have all focused on the identified APMP work priorities of the year: strategic planning, response to the COVID-19 pandemic, management of TC and FG activities at the COVID-19 time, as well as optimization of organization operation and governance. In terms of the response to COVID-19, for example, an [APMP COVID-19 Response Programme](#) was launched in June to fund members' capacity building activities in combating the pandemic. The 2020 APMP NMI Directors'

Workshop was held for regional NMI leaders to exchange experience and reach a consensus on expanding practical cooperation within the region against COVID-19. This Workshop was followed by another DEC – MEDEA workshop well designed by the DEC and the PTB MEDEA team to educate developing NMIs on planning of COVID-19 response projects.

Elections took place virtually in a closed session in GA. The EC welcomed two new members: Dr. Morioka Takehiro (NMIJ, Japan) and Dr. Wei-en Fu (CMS/ITRI, Chinese Taipei). Dr. Victoria Coleman (NMIA, Australia) assumed the role of the Lead TC Chair succeeding Dr. Chu-Shik Park. Three TC Chairs started their first term at the GA, and a further 6 TC Chairs were elected at GA who will start their term since next year. The GA also approved 5 FG Chairs, who will serve a term of 3 years following the new [APMP Focus Group Guidance](#).

At the GA, 3 recipients of APMP Awards 2020 were announced by the Award Advisory Committee Chair. Another 9 persons as out-going EC members, TC Chairs or FG Chairs received APMP Technical Activity Awards.



A subset of participants in the 36th APMP GA

APMP Strategic Plan (2021-2023)

A key output of the 36th GA was its approval of the [APMP Strategic Plan \(2021-2023\)](#). In the past, APMP operated solely under its annual Work Plans. This move has fulfilled the demand raised by members during the 2019 APMP NMI Directors' Workshop for identification of APMP long-term goals and period priorities.

The Plan has set up APMP's priority strategic objectives and their implementation plans for years from 2021 to 2023 to maximize period benefits. It also aims to establish a best-practice approach to APMP strategic planning aligned with the term of the APMP Chair, as agreed and delivered by all APMP structures.

Five key aspects of current context:

- Significant and long-term impacts of the COVID-19 pandemic
- Advances in measurement science and technology and the rise of global challenges
- Uneven development among Members
- Effective and efficient governance
- Stronger regional and international engagement

Six strategic objectives as work priority:

- Work together in the fight against the COVID-19 pandemic
- Promote R&D excellence in emerging areas
- Increase APMP's impact and value to members
- Enhance the quality and efficiency of APMP's governance and operations
- Enhance global engagement and partnership
- Fulfill RMO obligations under the CIPM MRA

APMP COVID-19 Response Programme



**COVID-19
RESPONSE**

Source: the United Nations

To join the global efforts to combat the pandemic, an [APMP COVID-19 Response Programme](#), proposed by APMP Chair, was launched by the EC at its midyear meeting in June. This Programme aims to encourage and support all scientific, technical, knowledge transfer or capacity building activities that will directly improve members' measurement capabilities needed to fight against the COVID-19 pandemic, underpin national initiatives for combating the crisis, or contribute to metrological preparations for future pandemics.

Totally USD 250,000 has been allocated by now to support the Programme, including USD 100,000 dedicated to initiatives related to the capacity building of developing NMIs. The Programme is open to APMP TCs, DEC, FGs and all member institutes for application on the premise that projects must benefit multiple members.

The first project call was made in October 2020, with 2 projects approved out of the 4 proposals received. Another 4 projects are under evaluation by the time of writing. As decided by the EC, the project call will remain open until closure of the Programme but proposal evaluation will be conducted every three months starting from GA 2020.

Summary of approved COVID-19 project proposals:

COVID-2020-02: Possible metrological supports for COVID-19 crisis management

Proposer: NIMT, Thailand

Objective: To develop methods and transfer knowledge about how to examine the quality of PPE suit, PAPR and face masks used by medical personnel.

COVID-2020-03: Comparison measurement and training courses on the ventilator tester

Proposer: Medical Metrology Focus Group (MMFG)

Objective: To support APMP members to establish the traceability system for ventilators through technical training courses, and to organize the first comparison measurement on ventilator testers among selected APMP members to verify existing calibration methods.

2020 APMP NMI Directors' Workshop

Regional Cooperation in Response to the COVID-19 Pandemic and Beyond

The COVID-19 pandemic has made it very clear that metrology is critical in responding to a global crisis. To build solidarity and enhance coordination among members in responding to the pandemic, and to present a unique opportunity to communicate the fundamental value of metrology to a broad set of stakeholders, including policymakers, APMP convened its 11th NMI Directors' Workshop (DW) on 24 November 2020 under the theme of Regional Cooperation in Response to the COVID-19 Pandemic and Beyond.



Workshop Chair: [Dr. Jan Herrmann](#)
APMP Executive Committee Member

The Workshop focused on three topics highly relevant to COVID-19:

Topic 1: Metrological traceability for COVID-19 tests and related measurements

Topic 2: The strength of cooperation

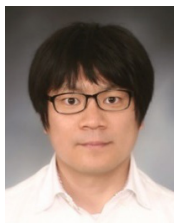
Topic 3: Narrow the gap in developing economies

Sixteen speakers, including NMI Directors, scientists, and representatives of international and regional metrology organizations were invited to share insights and experiences on the mentioned three topics. The NMIs represented at the workshop provided powerful examples for successful partnering with stakeholders on the pandemic response. From testing of the virus through to screening, manufacture of PPE, manufacture of other biomedical devices, vaccine development and education and training, metrology, together with other pillars of the quality infrastructure, is able to provide the accuracy, reliability, reproducibility and quality required by stakeholders from governments, industry and the community who seek confidence and certainty.

This workshop also shows that APMP members were having a noticeable and global impact in supporting the pandemic response, and the region is strongly positioned to support economies, including developing economies, to address the pandemic. More importantly, APMP members have much to learn from each other, and by working together an even larger impact can be made on the global response to and recovery from the pandemic.



[Mr. Fang Xiang](#)
Director, NIM, China /
Chair of APMP



[Dr. Inseok Yang](#)
Chair of APMP TCT,
KRISS



[Dr. Yukiko Shimizu](#)
Senior researcher,
NMIJ



[Dr. KANG Chang Wei](#)
Senior Scientist and Deputy
Director of Fluid Dynamic
Department, IHPC,
A*STAR



[Dr. Martin Milton](#)
Director of the BIPM



[Dr. Walter Copan](#)
Under Secretary of Commerce for
Standards and Technology /
Director, NIST (as of 24 Nov 2020)



[Dr. Rainer Stosch](#)
EMN TraceLabMed Chair,
PTB



[Dr. Bruce Warrington](#)
Chief Metrologist / CEO,
NMIA



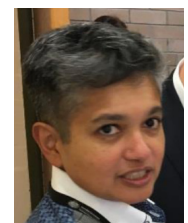
[Ms. Ajchara Charoensook](#)
Director,
NIMT



[Mr. Sujeewa Akuranthilaka](#)
Director,
MUSSD



[Dr. Ghufraon Zaid](#)
Director,
SNSU-BSN



[Dr. Angela Samuel](#)
Director of International Relations, NMIA /
Chair of APMP DEC

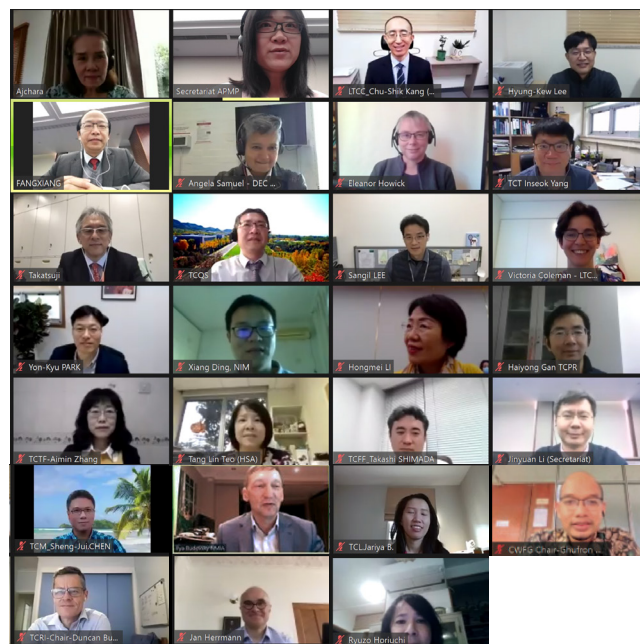
TCI/FGI Projects 2020

COVID-19 has substantively affected the operation of TCI and FGI projects, bringing a halt to almost all on-going projects and a curb to potential proposals.

In the 2nd call for 2020 TCI projects and the 1st call for 2020 FGI projects made in April, only 1 TCI and 1 FGI project were approved whose implementation were both delayed due to the COVID-19 impact:

- Traceable Temperature Calibration of Dynamic Mechanical Analyzers
- Strengthening of Measurement Capabilities for Toxic Inorganic Elements to Support Fish & Shrimp Food Industry

The EC and TC/FG Chairs have agreed to allow postponement of all on-going TCI and FGI projects until after the COVID-19 pandemic. The first call for TCI/FGI projects of 2021 has been made by the APMP Secretariat in January of 2021.



Participants in the 34th EC-TCC Meeting

Guidelines for APMP TCI & TGI Projects

Among other actions to improve the quality and efficiency of organization operation and governance, the [Guidelines for APMP TCI & TGI Projects](#) was developed by the Secretariat and approved by EC and TC chairs at the 34th EC-TCC meet-

ing on 20 November 2020 with immediate effect. This document provides a consolidated guidance for the management of APMP-funded projects.

APMP Focus Group Guidance

The [APMP Focus Group Guidance](#), developed under the leadership of Dr. Jan Herrmann, was approved by the 36th GA with immediate effect. This paper is an update and formalisation of the “DRAFT Guidance for Focus Group Chairs and APMP Committees” that was developed as a discussion paper for the 2015 APMP NMI Directors Workshop. The approval of this document has put in place a formal and comprehensive guidance for the implementation of FGs, which have been operated for five years.

This document has provided for objectives of APMP FG, its lifecycle, constitution and leadership, stakeholders, as well

as funding. It highlights that the objectives of FGs focus on relationships with stakeholders, cross-disciplinary collaboration and impacts on member economies.

According to the Guidance, the relevance and effectiveness of Focus Group activities is reviewed every three years by the APMP EC. Focus Group Chairs are nominated by APMP full members, evaluated by APMP EC, the DEC Chair, the TC Chairs and the incumbent Focus Group Chairs against objectives of FGs, and approved by GA for a term of 3 years, with the possibility of extension for an additional year.

APMP Guidelines for On-site Peer Reviews / Assessments under Unexpected Circumstance due to COVID-19

The objective of the *Guidelines* is to provide guidance for APMP member institutes unable to conduct their planned reviews due to travel restrictions resulting from the spread of COVID-19. This document was drafted by APMP TCQS Chair Dr. YANG Ping and the then incumbent Lead TC Chair Dr. Chu-shik Kang based on discussion between APMP and the BIPM. According to the Guidelines:

- APMP member institutes following the pathway (a) (Third party accreditation) is to follow the guidelines provided by the respective national accreditation body or the ILAC;
- APMP member institutes following the pathway (b) (Certification to ISO 9001:2008 and attestation by technical peers) have 3 options:

- postponement of review, which is mostly recommended, and the maximum allowed is six months after the end of the pandemic;
- remote review, where reviewers must come from NMIs/DIs and be approved by TC Chair;
- review by local expert, where scope of services under review must not change from the last review and the review must be approved by EC;
- APMP member institutes following the pathway (c) (self-attestation) is allowed to conduct QS review remotely or by local expert, and to postpone the technical review until after the pandemic.

Besides, APMP QS documents are currently being updated to align with the new ISO/IEC 17025: 2017, ISO 17034: 2016, as well as the KCDB 2.0.

The 20th Anniversary of the DEC



With around two-thirds of member economies classified as “developing”, the APMP Developing Economies’ Committee (DEC) was established in 2000 to help address the needs of APMP’s developing member institutes and to oversee and coordinate associated work programs. The 2020 DEC meetings marked the 20-year anniversary of the DEC.



Participants in the 41st DEC Meeting

DEC Strategic Plan (2021-2023)

Noting this milestone, two key strategic planning workshops were conducted in 2019 to review achievements over the DEC's first 19 years and identify lessons learned. Based on agreed priorities, the DEC has developed the *DEC Strategic Plan (2021-2023)* which sits under the overarching APMP Strategic Plan (2021-2023). The DEC Plan includes prioritization of improving the effectiveness and impact of DEC-funded activities, evaluating the changes to DEC members from the perspective of broader APMP participation, and creating an online Knowledge Management System for virtual collaboration.

Improving Governance → Accountable DEC
-DEC Leadership and Management Development
-Implementation of DEC Monitoring & Evaluation

Developing Online Collaboration and Training tools → Collaborative DEC
-Creation of a Knowledge Management System (KMS)

"Leaving no one behind" → Inclusive DEC
-CMCs: Enabling participation in CIPM MRA
-Future Proofing: Adaptation and engagement with advances in S&T

Supporting national SDG priorities → Sustainable DEC
-Fostering participation in APMP Focus Groups

At the time of writing, a range of (virtual) activities are being planned for 2021 involving the DEC Taskforces, beginning with development of the 3-year work programs to deliver on the strategic priorities identified in the DEC strategic plan.

APMP DEC-APLMF-PTB MEDEA 3.0 Planning Workshop

A joint APMP DEC-APLMF-PTB MEDEA 3.0 Planning Workshop was held on 19 November 2020 to introduce the next phase of the multi-year MEDEA (Metrology: Enabling Developing Economies in Asia) project, funded by the German Government. MEDEA 3.0 will commence from May 2021.

APMP DEC-MEDEA COVID-19 Workshop

Additionally a DEC-MEDEA COVID-19 Workshop on 25 November was aimed at assisting members in the development of project proposals to address challenges arising from the pandemic. The Workshop were informed by outputs from the previous day's Directors Workshop, as well as data obtained from several surveys undertaken over the last few months.

Cooperation MoU with VAMAS Signed

The Memorandum of Understanding between APMP and VAMAS has been signed electronically on 4 June 2020 by Mr. Fang Xiang, APMP Chair, and Dr. Michael Fasolka, Chair of the VAMAS Steering Committee.

The objective of the MoU is to foster the collaboration of VAMAS and APMP and to lay out a framework for cooperative activities. All activities under this MoU shall promote the development of metrology infrastructure in the Asia Pacific region with a key focus on the comparability and accuracy of the measurement of materials properties.

The implementation body of APMP for this cooperation is the Technical Committee of Materials Metrology (TCMM). Now a joint workshop on traceable temperature calibration of Dynamic Mechanical Analysers (DMA) has been proposed but is postponed due to impacts of the COVID-19 pandemic.

Greetings from New EC members and TC Chairs



EC member Dr. Morioka Takehiro
National Metrology Institute of Japan (NMIJ)

It is my great honor to serve the APMP as an EC member, and I look forward to working with APMP colleagues again. I have supported Dr. Takatsuji, the former APMP Chairperson for three years and learned many details of the APMP. With this experience, I will make every effort to make an APMP better. My assigned roles as the APMP EC are the liaison between the APMP and international organisations, and taskforce for website.

Although my EC roles are not directly linked to each Committee of the APMP, the website is an important place to communicate with Committee members. I understand that renewing the website is a big challenge and would like to ask APMP colleagues' kind assistance.

I started my experience with APMP activities by participating TCEM meetings since my technical background is the electromagnetic fields metrology in TCEM. Since then, the APMP has become one of the pleasure of my life and given me valuable experiences. At the end, I would like to express my appreciation to NMIJ for supporting my work to the APMP and to APMP friends for welcoming me.



EC member Dr. Wei-En Fu
Center for Measurement Standards (CMS/ITRI), Chinese Taipei

It's my great honor to be one of the APMP EC members. To work within EC and together with all colleagues of APMP family is a great pleasure! Taking this opportunity, I would like to express my sincere appreciations to NMIJ for the nomination, NIMT for the endorsement, and everyone of GA.

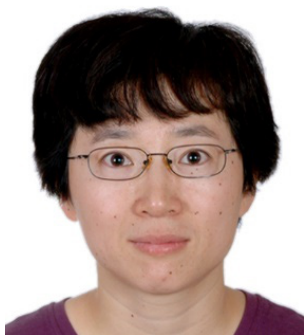
With all the happy experience I have in both TCL and TCMM, I look forward to expanding my role to provide contributions for not only EC, but also TCs, FGs, and DEC. Through working together, I believe that the collaborations in our APMP family will be further enhanced strongly. Cheers!!



Lead TC Chair Dr. Victoria Coleman
National Metrology Institute, Australia (NMIA)

Happy new year and welcome to 2021 – and my first year as Lead TC Chair. Taking over the role from Dr. Chu-Shik Kang, I have very big shoes to fill, however I am committed to doing my best to serve all APMP members and associates. I am really looking forward to working with the other TC Chairs, the DEC Chair (and the DEC!), the EC and of course the APMP Chair and Secretariat to deliver on APMP priorities. I'm particularly hopeful that as we move into the second year of the global pandemic that we have many opportunities to showcase the important impact that metrology can make on the pandemic response in our region and beyond.

Finally, happy Lunar New Year to our East and Southeast Asian colleagues. This is the Chinese Zodiac year of the Ox. I read that oxen are “the hard workers in the background, intelligent and reliable, but never demanding praise” which sounds like a good description of a metrologists! I hope that 2021 will be a fruitful and productive year for all of us and that you and your loved ones continue to stay safe, happy and healthy. Hopefully we see each other again face to face soon.



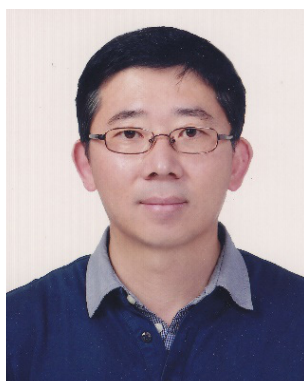
Chair of TCFF Dr. Chunhui Li
National Institute of Metrology (NIM), China

I am Chunhui Li from NIM, China. I have been working in NIM for over 15 years since 2005. It is my pleasure and honor to serve as TCFF chair in the forthcoming 3 years. I will try my best to provide professional service for colleagues in APMP TCFF whose areas include fluid flow, volume and viscosity. I’m looking forward to working with TCFF colleagues to make new development in comparisons, CMC review and other technical projects in the year of 2021 despite of the severe impacts of the COVID-19 pandemic. I am also looking forward to working with APMP EC members, Chairs and colleagues in other TCs, DEC and FGs and of course the Secretariat. I wish everyone good health and new success in the year of the Ox.



Chair of TCL Dr. Zi Xue
National Institute of Metrology (NIM), China

In such special 2020, it was my honor to have taken the role of TCL Chair from Dr. Jariya Buajarern. Thanks to the efforts of Jariya and all the TCL members, we have achieved good results in many ways. I’m very pleased to serve this warm family and work with all of our members for a better TCL. 2021 also greeted us with both challenges and opportunities. Due to the COVID-19 pandemic, the scheduled comparisons, CMC procedures and TCI projects have been postponed. However, our dimensional metrology is embracing new developments in the process of digital transformation. We also need to address the changes of APMP members in their length related CMCs according to the requirements of KCDB 2.0. All the mentioned are no easy work. I hope we could support each other and make progress together. At the end, I’d like to wish you a safe, peaceful and happy new year.



TCTF Chair Dr. Dai-Hyuk Yu
Korea Research Institute of Standards and Science (KRISS)

It is a great honor to serve APMP in the role of TCTF Chair. My term started at the last GA 2020, taking over from Prof. Aimin Zhang from NIM. I would like to thank Dr. Zhang for her great efforts during her term.

All TCTF members have made efforts to contribute to the upcoming SI redefinition of the "second" and to elevate the status of time frequency standards in each economy in a fast-changing environment.

As TCTF Chair, I would like to promote better sharing of our experiences and hope to get active proposals from all the APMP members, as we have done so far so that these efforts can bear fruit. I look forward to seeing you all at the coming meetings after overcoming COVID-19.

2020 APMP Awards

Due to cancellation of the in person GA 2020, APMP awards of 2020 cannot be presented in the traditional APMP Award Ceremony but are presented locally by the recipients' institutes. We release the photos and the acceptance speech here as a way to congratulate the award recipients of 2020.

APMP Award for Developing Economies (DEN)

Dr. Sanjay Yadav (NPL, India)

It was indeed a huge honor for me to be awarded with "2020 APMP Award for Developing Economies" by APMP General Assembly. In fact, I am the 2nd winner of this presti-



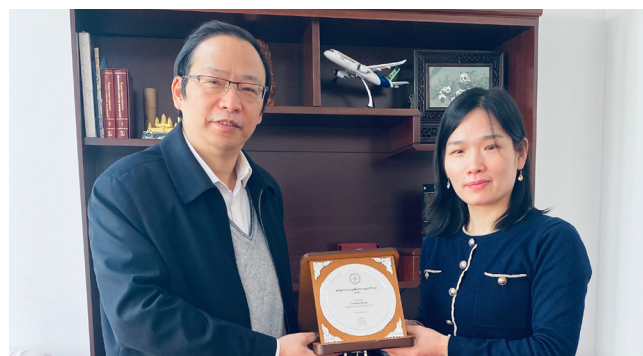
gious APMP award from CSIR-NPL, India. Actually, receiving an appreciation or recognition of your work which you have done in past is not only a great feeling but also is a huge responsibility to work with more enthusiasm and zeal in future. I am very fortunate to work in the NMI of India with outstanding colleagues as well as colleagues from APMP and SAARC nations. My research would have not been accomplished without their cooperation. On this occasion, I deeply express my thanks to all of them for their kind cooperation. In the future, I will continue to do my best for further development of metrological activities for the society. In such endeavors, if any further responsibility is given by APMP at any time, I would be more than happy to contribute to best of my potential. Finally, I thank all the members of APMP Award Committee and APMP Secretariat for considering me for this award.

APMP Young Metrologist Prize

Dr. Lianhua Dong (NIM, China)

It's my great honor to be awarded the APMP Young Scientist Award. I would like to thank the APMP Award Advisory Committee for your very kind recognition, and thank my parent institute, the National Institute of Metrology (NIM), China for all the experiences and learnings I got there.

As a researcher in biological metrology field, I always hope I am able to contribute my research to protect people's health and improve the quality of life. This is in particular our responsibility in 2020 when the whole world was facing with the unprecedented severe impacts of the COVID-19 pandemic. Over the year, I and my colleagues in NIM life science team had worked almost to our full capacity to establish reference materials and high-accuracy testing methods that can support reliable coronavirus testing and enhance the international exchange on this topic. Some of my colleagues have worked very hard tolerating pains on



their bodies to calibrate medical instruments used in hospitals. In the future, I hope I will be able to do more in transferring the existing knowledge to more APMP members in need. Thank you very much and I wish everyone a healthy and lucky new year!

2020 APMP Young Metrologist Prize for Developing Economies (DEN)

Dr. Kittiya Shearman (NIMT, Thailand)

I would like to thank to the committee for awarding me the 2020 APMP Young Metrologist Prize for Developing Economies (DEN). Also, thank you to my institute for nominating me and to Dr. Charun Yafa, the head of Chemical Metrology and Biometry Department of NIMT, for giving me opportunities to work on many projects. Last but not least, thanks to my family, my husband and my two daughters who always support and encourage me. I started my career as a metrologist soon after I graduated from the UNSW, Australia in 2009. Without experience from the National Measurement Institute of Australia (NMIA) during my Ph.D thesis, I would not have made it this far.

Being awarded the 2020 APMP Young Metrologist for DEN is the greatest honor in my professional career. It has encouraged me to continue to do my best in contributing to the Thailand and global metrology communities.



APMP Technical Activity Award

Dr. Takatsuji Toshiyuki (NMIJ/AIST, Japan), EC member (2019 - 2020)

Six years had passed since I first became an EC member including the time of being the APMP chair. This period was filled with good and unforgettable memories. Taking advantage of this opportunity I would like to extend my deepest gratitude to all of my best friends in APMP. Thanks to various and enormous supports by the members of APMP, I was able to complete my duty. APMP is now becoming the most important RMO geographically, demographically, economically, and scientifically. Another important point of APMP is its warm and friendly atmosphere which I love very much. I wish APMP keeps playing an indispensable role in the world metrological community and all members happy and safe in this extraordinary time.



Dr. Chu-Shik Kang (KRISS, Korea), Lead TC Chair (2017 - 2020)

It was indeed my great honor and pleasure to serve as Lead TC Chair of APMP for 3 years. I would like to thank all TC Chairs, Lead TC Chairs, EC members, APMP Chairs and Secretariat staffs I worked with throughout my term, as I would not have been able to complete my duty without their cooperation and support.

Although I may not seem so, I am a visually impaired person having macular degeneration in both eyes, having most of my central vision lost. As it is difficult to read documents or do computer works, I had to spend much more time and energy to fulfill my responsibility compared to unimpaired people. In this sense, I would like to thank myself for overcoming the handicap and finishing the duty without any serious problem.

Although I step aside, I will always support APMP when needed, and always wish APMP continued success!



Dr. Shimada Takashi (NMIJ/AIST, Japan), Chair of TCFE (2017 -2020)

I am very honored to receive this award. I would like to express my deep appreciation for supports from TCFE colleagues during my term of three and a half years including my term as the acting chair. It was my pleasure to meet all TCFE members who brought me smile anytime and anywhere. I would like to give my special thanks to Dr. LI Chun-hui of NIM as the former Vice TCFE Chair and Dr. CHEONG Kar-Hooi of NMIJ as the former TCFE Secretary who helped me in TCFE coordination very well. Thanks to the great support by EC members, other TC Chairs, the Secretariat and the members in the host NMIs, my mission could be completed. I wish I can continue to work with the friendly and hospitable APMP colleagues to contribute to the APMP activities.

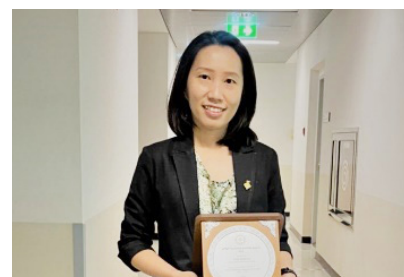


Dr. Jariya Buajarern (NIMT, Thailand), Chair of TCL (2017 – 2020)

I have had the great fortune to work with and for APMP as TCL chair. I feel very privileged to have this opportunity to work with excellent metrologists of all fields from our region.

TCL is such a friendly, collaborative and supportive family to be part of. As such, being TCL chair became an enjoyable task and indeed one of my best memories. I would like to take this opportunity to thank all TCL members, Technical Committee Chairs and Lead Technical Committee Chair, both past and present, for endless collaborations, friendships and supports.

My very best wishes to Dr. Zi Xue who take over as TCL Chair. I look forward to the higher efficiency and the stronger collaboration amongst members of APMP.



Prof. Aimin Zhang (NIM, China), Chair of TCTF (2018 - 2020)

I am very honored to serve APMP as TCTF Chair from the end of 2018 to the end of 2020. It's great to see APMP has been growing and getting better in recent years, and it is my privilege to have an opportunity to make a little bit contribution. I would like to take this opportunity to thank all the EC members, LTCC and other colleagues for their help and kind support in the past 3 years. Although my term of TC Chair is over, I hope my contribution to APMP will continue. 2020 is an unusual year, hope the pandemic will end soon and all the work will return to normal. Best Wishes to APMP, best wishes to all the colleagues!



Dr. Sangil Lee (KRISS, Korea), Chair of CCCAFG (2018 - 2020)

*It was my great honor to serve as the Chair of Focus Group of Climate Change and Clean Air during the last three years. I was also very delighted working with APMP colleagues across different TCs and engaging with global, regional and local stakeholders for CCCAFG activities. I would appreciate all APMP members for their engagements during APMP activities. Dr. Kai from NMC/A*STAR will serve as the Chair of the CCCAFG for the next three years. I am pretty sure that Dr. Kai (the incoming Chair of the CCCAFG) will make great efforts to increase the impact of metrology on public and society in the APMP region during his term. I will work with him continuously as a member of the CCCAFG. I wish a happy new year for all APMP members.*



Ms. Ajchara Charoensook (NIMT, Thailand), Chair of EEFG (2017 – 2019)

I am extremely honored to receive the APMP Technical Activity Award on Energy Efficiency. Energy Efficiency is not only crucial theme in energy use but in the whole chain from generation, transmission and distribution to the end user. It is a challenging task for Energy Efficiency Focus Group (EEFG) members in applying metrology to enable and improve an efficient operation of energy.

During my term as the chair, I received a lot of support from EEFG members and many organizations from energy sector. My sincere thanks to those who have contributed so much effort and encouragement to EEFG activity. I would also thank APMP for giving me an opportunity to work in this project.



Dr. Sheng-Jui Chen (CMS/ITRI, Chinese Taipei), Chair of MMFG (2015 – 2019)

I am very honored that I had this opportunity to serve as the first MMFG chair, and I am very grateful to my institute CMS/ITRI for trusting and assigning this not a very easy job to me. I can still recall how clueless I felt when organizing the 1st MMFG's meeting in Beijing in 2015. But thanks to the brilliant focus group members who have been continuing to bring in ideas and inspirations, the MMFG is able to develop and begin to carry out practical collaborations. Among these brilliant members, I'd like to give my special thanks to the following colleagues: Dr. Mark Ballico and Dr. Victoria Coleman from NMIA, Dr. Yon-Tae Kim, who is the TCAUV Chair-elect now, and Dr. Il Doh from KRISS, Dr. Yu-Ping Lan from my institute CMS/ITRI and Dr. Ding Xiang from NIM who has been super supportive to the MMFG since day 1. Finally, I'd like to thank APMP Chair, Secretariat, EC members, TC Chairs and DEC chair for your guidance and support. I believe under Dr. Ding's term, the MMFG will bring more impact, and I will do my best to support Dr. Ding and the MMFG.



Dr. Ghufron Zaid (SNSU-BSN, Indonesia), Chair of CWFG (2017-2020)

It is a great honour and privilege for me to chair APMP Clean Water Focus Group (CWFG) from 2017 to the end of 2020, continuing the work of Dr. Pinandito, my boss at that time, who was promoted to a higher position.

I would like to express my gratitude to APMP EC and all APMP members for giving me the opportunity. I would also like to extend my gratitude to DEC Chair, Dr. Angela Samuel, and TCQM Chairs, Dr. Ma Liandi and Dr. Inagaki, as well as all FG members for their support and contribution to CWFG activities without which FG activities can't be carried out successfully. All what have been achieved by the CWFG can't happen without their contributions. Also it is impossible for me to manage and run the FG without the help of my great team. Dyah, Nurul, Azum and Christine have helped a lot through-out my term. I am sure the next chair can improve the CWFG even further, to make it more relevant to the stakeholders because clean water is essential to the quality of our lives.

Quality Water, Quality life. Thank you all!



News from Members

The Applications of CMS/ITRI's AI Metrology in Environmental Infrastructure and Medical Diagnosis to Guard Public Health

To improve the quality of environmental infrastructure and medical diagnosis, Center for Measurement Standards (CMS) / Industrial Technology Research Institute (ITRI) has applied AI metrology in water recycling and clinical imaging to guard public health. The developed works include “Film Fouling Warning Technology” and “Spine X-ray Image Measurement and Analysis Technology”.

Ultrafiltration (UF) and reverse osmosis (RO) have been commonly applied to water recovery treatment. In the UF/RO process of purification, the timing of backwash to clean the film fouling would significantly affect the output quality and operating efficiency. If the backwash time is too early, the cost will be increased. If the backwash time is too late, it may result in the permanent failure of the film. In order to obtain the optimal timing of backwash, CMS/ITRI has devel-

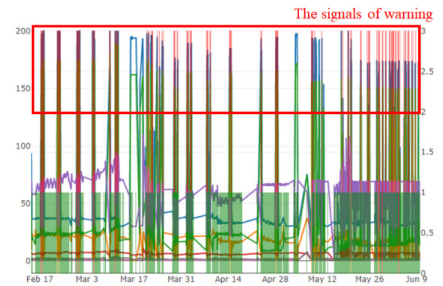


Figure 1. The normalized trends of monitoring data to provide the warning signals.

oped the “Film Fouling Warning Technology”. The fouling thickness is measured by optical interferometry, and the recorded data together with the historical information are combined through the machine learning analysis. The developed AI model is capable of predicting the optimal timing of backwash as shown in Figure 1. This technology has been validated in the real factory of water recycling, and is currently at the stage of commercialization for customized demands.

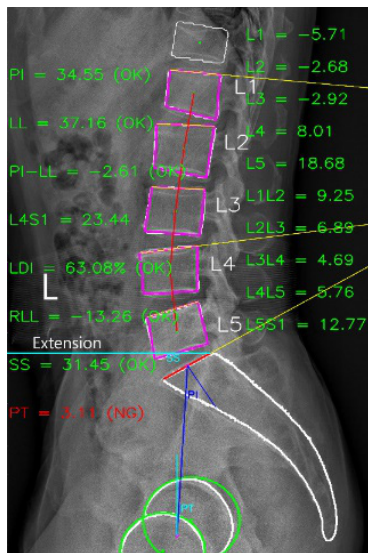


Figure 2. The spine x-ray image with the assisted indices provided by the AI model.

The preoperative evaluation for spinal surgery is based on the experience of physicians. However, due to the individual differences and the lack of an objective tool, the successful surgery and good postoperative results are hard to be achieved. CMS/ITRI has applied the deep learning AI model to develop the measurement and analysis tool for spine X-ray images. By training the AI model with preoperative and postoperative clinical images, the developed “Spine X-ray Image Measurement and Analysis Technology” can provide the measurements of 52 critical indices, such as pelvic incidence (PI), lumbar lordosis (LL) and the detection of abnormal spondylolisthesis. It can also simulate the effect of implants to assist physicians in evaluating spinal deformity. The demonstrated image is shown as Figure 2. The information of key parameters can be provided automatically. Physicians from several hospitals have joined the development trials to use the system, and their comments have showed the improved efficiency of clinical diagnosis and treatment.

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KRISS Develops COVID-19 Genetic Material RM First in Korea



KRISS and Center for Convergent Research of Emerging Virus Infection (CEVI) successfully developed a SARS-CoV-2 RNA reference material by employing reverse transcription digital PCR. This method is capable of absolute quantitation, enabling users to determine not only the presence of SARS-CoV-2 RNA - the genetic material of the virus, but also the specific number of its RNA in a specimen.

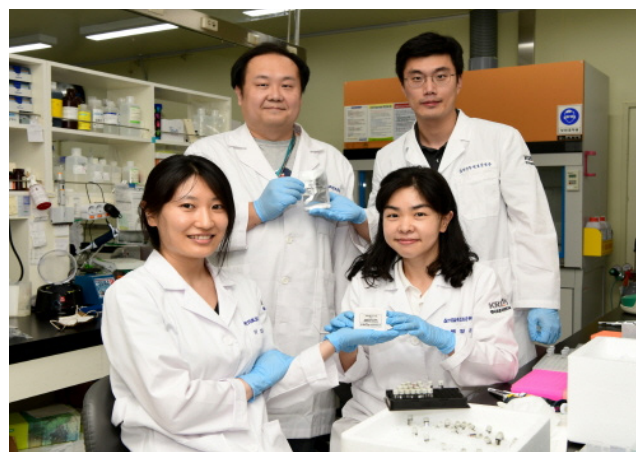
This reference material covers about 90% of the entire genome, providing flexibility in new COVID-19 diagnosis in response to future variants. It is also expected to strengthen the reliability and accuracy of current diagnostic tests.

Dr. Seil Kim, a senior research scientist of the Microbiological Analysis Team, said, "Through cooperation with CEVI, we were able to secure the genetic materials. We are developing another reference material that mimics the COVID-19 virus particle."

Dr. Young-Kyung Bae, a senior research scientist of the Biopharmaceutical Analysis Team, added that "these

reference materials will improve quality management of Korean diagnostic kits that are being exported internationally."

Dr. Hyun-Min Park, President of KRISS, said, "We will continue to address national issues, and produce results that directly benefit citizens."



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Central Geological Laboratory (CGL) of Mongolia developed New Certified Reference Material “CGL 503 URANIUM ORE”

We are delighted to announce that new reference material “CGL 503 Uranium ore” was certified and produced by The Central Geological Laboratory of Mongolia in 2020. The “Uranium ore” reference material is successfully developed in accordance with the ISO 17034:2016 requirement and ISO Guide 30-35 requirements.

This type of Reference Material (RM) is increasing due to the fact that uranium ore Certified Reference Materials (CRM) containing microelements are rare in the world market and the increasing research on uranium exploration and mining in worldwide.

The raw material, a bulk of uranium ore was collected from the uranium deposit “Kharaat”, in Dornogovi Province which located on the eastern territory of Mongolia. The bulk material was pulverized to 0.074 mm. The pulverized bulk material was homogenized by a high-performance intensive mixer. After testing the homogeneity, portions of 100 g reference material each were bottled by rotary splitting from this batch to polyethylene bottles and labeled.

“ProLab Plus” software was used for statistical evaluation of certification analysis. An interlaboratory trial with 16 qualified participating laboratories was selected to obtain a reliable database for the assignment of the certified values. The certified values and their uncertainties of the CRM had been determined according to Nested design, ISO 5725-3, ISO Guide 35.

The traceability was established by CRM – Uraniferous Alaskite Ore AMIS0344 produced by African Minerals Standards from South Africa.

Production and evaluation procedures for compliance with the valid ISO – Guides were assessed and certified by a Scientific and Technical Council of CGL.



A total of 31 elements and compound (Al_2O_3 , CaO , K_2O , MgO , MnO , Na_2O , P_2O_5 , SiO_2 , Fe_2O_3 total, TiO_2 , Ba, Ce, Co, Cr, Cs, Cu, Ga, La, Mo, Nb, Ni, Pb, Rb, Sc, Sr, Th, U, V, Y, Zn, Zr) were certified and 26 elements (As, Be, Cd, Dy, Er, Eu, Gd, Ge, Hf, Ho, Li, LOI, Lu, Nd, Pr, Sb, Se, Sm, Sn, Stotal, Ta, Tb, Tl, Tm, W, Yb) were defined as indicative values.

This CRM can be used for the quality control of routine analysis, research and development works, verification of the calibration of instruments and equipment, and method verification.

CGL has been producing RM from Mongolian minerals (rocks, ores, concentrates, environment, combustible minerals, radioactive, industrial concentrate wastes, etc.) since 1973, and CGL 503 Uranium ore is the 104th product.

The charts below demonstrate the uranium concentration results and normal distribution that the laboratory participated in the CGL 503 Uranium Ore certification project.

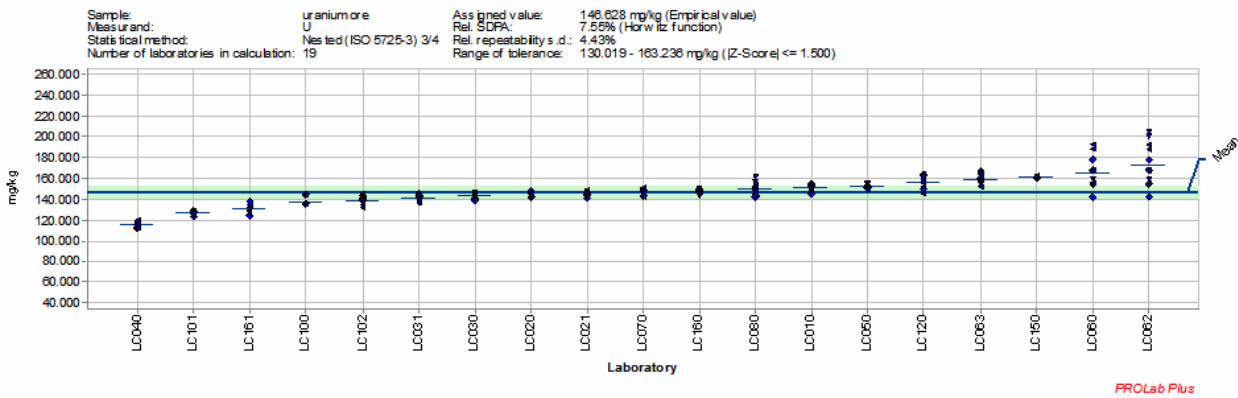


Figure 1. Uranium summary chart.

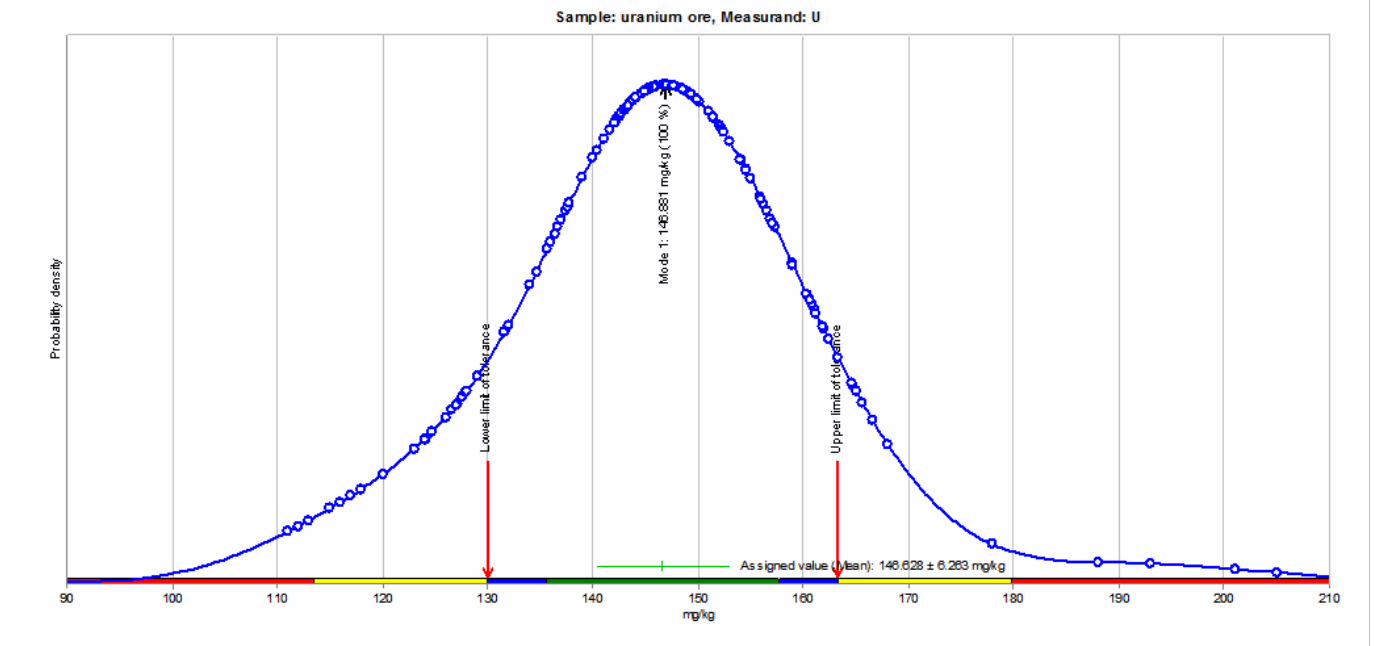


Figure 2. Uranium normal distribution chart.

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The Role of Health Sciences Authority (HSA) in Singapore's "War on Diabetes"



Singapore has a high prevalence of diabetes mellitus among the local population. In 2016, the Ministry of Health (MOH) declared a "war on diabetes", which included the implementation of multiple strategies to fight the disease. Among these was to allow the use of haemoglobin A1c (HbA1c) as an alternative test to fasting plasma glucose in the screening for diabetes mellitus from April 2019. The use of HbA1c as a screening test offers the ability to diagnose patients with diabetes mellitus even with non-fasted blood samples.

This would facilitate early intervention and management of the disease before complications set in.

As part of the regulatory requirements in using HbA1c as a screening test, participation in the annual HSA's External Quality Assessment Programme (EQAP) for HbA1c Testing was mandated by MOH, Singapore. The HSA EQAP entails two important designs. Firstly, fresh human whole blood samples amenable to both mainframe analysers and portable devices are used as EQA materials. With stringent controls in place, it is possible to even send additional samples for "immediate" re-testing by a clinical laboratory or medical clinic, if a result is suspected to fall outside the satisfactory range. Secondly, the results are evaluated against metrologically traceable assigned (target) values independently determined by HSA. The HSA EQAP aims to serve as a continuous quality assurance programme to assist local clinical laboratories and medical clinics in further tightening the accuracy of their HbA1c test results, and to reduce the possibilities of misclassification of the disease.

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Future Meetings

APMP Midyear Meetings and the General Assembly of 2021 will be held as virtual meetings in June and November, respectively. The GA 2022 and GA 2023 are currently scheduled to take place in Japan and Philippines.

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