

2019 World Metrology Day Conference

08:30 -17:00, 24 May 2019, One Farrer Hotel

The International System of Units - Fundamentally better

Metrology for Future of Manufacturing

May 20 is World Metrology Day (WMD), commemorating the anniversary of the signing of the Metre Convention in 1875. This treaty provides the basis for a coherent measurement system worldwide that underpins scientific discovery and innovation, industrial manufacturing and international trade, as well as the improvement of the quality of life and the protection of the global environment.

Singapore signed this treaty in 1994 and since we have been continually advancing measurement science and quality by developing measurement techniques and establishing national measurement system. We have also been proactive in celebrating WMD yearly to introduce the public new developments in metrology and to analyze, with academy and industry, new industry developments and relevant measurement and test needs.

The theme for WMD 2019 is **The International System of Units - Fundamentally better** as announced by The International Bureau of Weights and Measures (BIPM) together with The International Organization of Legal Metrology (OIML). This theme was chosen because a significant revision to the



International System of Units (the SI) since its inception comes into force on 20 May 2019. The SI is now based on a set of definitions each linked to the laws of physics and have the advantage of being able to embrace further improvements in measurement science and technology to meet the needs of future users for many years to come.

The National Metrology Centre (NMC), A*STAR, The Health Sciences Authority (HSA) and The Testing, Inspection and Certification (TIC) Interest Group, SMF, is organize a conference with a sub-theme on **Metrology for Future of Manufacturing**. It will be held on 24 May 2019 at the Grand Ballroom of One Farrer Hotel. The topics includes the introduction to the new SI definitions, the efforts and strategy to realize and disseminate the SI units, the new developments in industry such as advanced manufacturing, digitalization and IoT and their challenges to metrology and TIC.



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National Metrology Centre (NMC), Health Sciences Authority (HSA) and Testing, Inspection and Certification (TIC) Interest Group of Singapore Manufacturing Federation (SMF) co-organized a World Metrology Day Conference on 24 May 2019 to commemorate the signature of the Metre Convention on 20 May 1875 that provide a framework for global collaboration in the science of measurement and in its industrial, commercial and societal applications.

The theme of this year's international World Metrology Day, "The International System of Units - Fundamentally better", marks the most significant landmark revision of the International System of Units (the SI) since its inception comes into force on 20 May 2019. The SI is now based on a set of definitions each linked to the laws of physics, and has the advantage of being able to embrace further improvements in measurement science and technology, to meet the needs of future users for many years to come.

The conference "Metrology for Future of Manufacturing" was organized in conjunction with the international World Metrology Day to share with the industry on how measurement sciences and their applications could help the industry sectors meet demands from the dynamic and evolving global market. The full day event included keynote speech, a morning summit forum and afternoon breakout roundtable sessions, gathering more than 250 participants from the industrial, academic and research communities.

The conference was opened by Dr Thomas Liew, the Executive Director of NMC, A*STAR. Dr Liew expressed his gratitude for the participation of local and foreign experts and industry to the conference. He highlighted the joint engagement in the SI revision and the metrology for future of manufacturing will drive scientific development towards higher accuracy and precision, which will positively contribute to the growth of technology and innovation and further assist in industrial transformation and competitiveness enhancement. Through sharing insights on measurement needs, challenges and opportunities in the SI redefinition, IoT digitalisation, sensor network, and advanced manufacturing among the participants, industry will be able to enhance their capabilities in measurement and testing that are critical for researches, manufacturing and global trade.

A key note on "Digitalization in the Field of Metrology" was presented by Prof. Dr. Frank Haertig, Head (Mechanics & Acoustics Div), PTB, Germany. Prof. Dr. Haertig shared with the participants benefits and design of universal data exchange format based on the specifications established in the International System for Units (SI) and research projects such as the development of digital calibration certificates, the concept for the design of digital twins and the processing big data that will provide future ways in measurement technology for the framework of international partners.

The morning summit forum included seven panellists to share their perspectives on the challenges and responses to the innovative application of new metrology development in the the SI revision, additive manufacturing process qualification, sensors and their application in IIoT, and common challenges in transitioning to ISO/IEC 17025:2017. The afternoon roundtable sessions "Measurement for Digitalization" and "Measurement for Advanced Manufacturing" featured presentations by NMC and industry partners and provided a platform for dialogue between NMC and the stakeholders to gather feedback on their measurement needs and to update them on NMC's new capability to support measurement for digitalization and advanced manufacturing.