

Advances and Directions in Quantum Metrology

Monday, August 30, 2021, 7:00-9:30 AM Eastern [UTC-4]
(=13:00-15:30 CEST [UTC+2]) (=20:00-22:30 JST [UTC+9])



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JOIN the meeting at: <https://zoom.us/j/94937806189?pwd=MENDdkFLmZoSDdCTUN6UzVqYIZEUT09>

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The second quantum revolution is ushering in new levels of control and manipulation of light and matter which are continually improving the world-best performance of standards in metrology institutes. Along with the redefinition of the International System of Units (SI), which provides new pathways for traceability, these advances are enabling a new generation of miniaturized, intrinsically accurate and quantum-referenced standards and sensors with tremendous economic potential. This session will provide an overview of some of the innovations and advances in quantum-based metrology, and provide an opportunity for Q & A with technical presenters from the TC25 World Congress sessions.

7:00 am **Welcome and remarks – Nicolas Spethmann**, Vice-Chair IMEKO TC25

7:20 am **Overview & key take-aways from the IMEKO World Congress Quantum Measurement and Quantum Information Technical Sessions – Alexander Tzalenchuk**, Fellow and Head of Science, Quantum Technologies, National Physical Laboratory (UK)

7:45 am **Recap of selected technical sessions**

Paper	Authors	Affiliation
Single photon sources for absolute radiometry – A review about the current state of the art (C000168)	*Stefan Kueck	Physikalisch-Technische Bundesanstalt
Progress towards comparison of quantum and classical vacuum standards (C000179)	*Daniel Schaefer Barker, Nikolai N. Klimov, Eite Tiesinga, James A. Fedchak, Julia Scherschligt, Stephen Eckel	National Institute of Standards and Technology
User-friendly SI quantum electrical standards with graphene (C000261)	Francois Couedo, Almazbek Imanaliev, Olivier Thevenot, Sophie Djordjevic, Wilfrid Poirier, *Felicien Schopfer	LNE - Laboratoire national de metrologie et d'essais
Emerging technologies in thermometry (C000265)	*Zeeshan Ahmed	NIST
Primary research on the thermometer based on negative nitrogen-vacancy center in diamond (C000135)	*Zheng Wang ^{1,2} , Xiaojuan Feng ² , Jintao Zhang ²	1.Tsinghua Univ., 2.National Institute of Metrology

8:25 am **Discussion of technical presentations – Alexander Tzalenchuk**, Fellow and Head of Science, Quantum Technologies, National Physical Laboratory (UK)

9:10 am **TC25 – Looking forward, Barbara Goldstein and Nicolas Spethmann**, Chair & Co-Chair, IMEKO TC25

- Key take-aways from the World Congress
- Important activities for the coming year

9:25 am **Closing remarks – Nicolas Spethmann**

9:30 am **Adjourn**