

CCT WG NCTh update

Graham Machin; WG NCTh chair
18 Jan 2022

Updates from 2021

- Progress with CCT K10
- Guide on industrial radiation thermometry
- CCT TG Body temperature measurement
- Publications and meetings

Current status of CCT K10

- Led by Helen McEvoy (NPL)
- Draft B report has been approved by participants and is currently being reviewed by CCT WG-KC
- Assuming not much re-working is required then target completion of comparison end of March
- Summary publication/s will follow in 2022

TG for guide on industrial radiation thermometry

- Chair: Mohamed Sadli (LNE-Cnam)
- Members: Howard Yoon (NIST), Peter Saunders (NZ), Helen McEvoy (NPL), Lenka Kňazovická (CMI), Ferruccio Girard (INRIM), Daniel Cardena (CENAM), Ricardo Sohn Moretz (INMETRO) and Maria-Jose Martin (CEM).
- Good progress has been made with:
 - Defining the content and assigning preparing the sections to the participants.
 - There are two main sections: a) low-temperature thermal detectors b) higher-temperature quantum detectors.
 - Thermal imaging is excluded (a future guide)
 - Participants have had four meetings lastly 12th Jan 2022

TG Body Temperature Measurement

- Core group of: Graham Machin (chair), Maria-Jose Martin (CEM), Igor Pusnik (UL), Xiaofeng Lu (NIM) and Wang Li (A*STAR)
- Published metrology focused guides for ear and forehead thermometry on the BIPM website, English & Spanish. These are now being shortened into clinical focused guides
- Third metrology guide on thermal imaging for fever screening is out for comment by the CCT
- The TG has also prepared the protocol for the Key Comparison of IR clinical thermometer calibrators. KC to be launched Spring 2022
- Provided on-going metrology input into clinical thermometer standards

- TG BTM chair given 8 invited talks on this topic in 2021; 3 to UK government agencies including Medical Device Safety, 2 World Metrology Day celebrations (Saudi Arabia, Denmark), 2 Universities and European Society Medicine
- Published 3 related papers:
 - Machin, G., Brettle, D., Fleming, S., Nutbrown, R., Simpson, R., Stevens, R., Tooley, M., “**Is current body temperature measurement practice fit-for-purpose?**”, *J. Med. Eng. Technol.* (2021) <https://doi.org/10.1080/03091902.2021.1873441>
 - Machin, G., Xiaofeng Lu, del Campo, D., Martin, M-J., Pusnik, I., Wang Li “**Improving body temperature measurement on a global basis**”, *Thermology International* **31(1)** 5-10 (2021)
 - Machin, G., Xiaofeng Lu, del Campo, D., Martin, M-J., Pusnik, I., Wang Li, “**Progress in improving body temperature measurement on a global basis**”, *Thermology International* **31(3)** 79 (2021)

Future WG plans before next CCT

- Completion and publication CCT K10 results
- Completion of industrial thermometry guide
- Completion and publication on BIPM website of fever screening guide by thermal imaging
- Completion and publication of medic focused guides for ear, forehead and thermal imaging for body temperature measurement and fever screening
- Completion of measurements for KC of clinical thermometer calibrators
- Consideration given to a) best practice guide for temperature measurement by thermal imaging b) whether a KC for 1) T at high temperatures at 2) mid temperatures is required
- Next meeting of WG to be at ITS-10 April 2023