CCT

CCT-WG-ThQ - Report

JEAN-REMY FILTZ

2026-05-21-22

LABORATOIRE NATIONAL DE MÉTROLOGIE ET D'ESSAIS

OUTLINES

- Participants
- CCT-Supplementary comparisons: Status
- Digitalisation and Data Management: Input
- Guide: Input
- Election of the WG-ThQ Chair

PARTICIPANTS :

First Name	Last Name	NMI/DI	Country	Status	Site/Line
Jean-Remy	Filtz	LNE	France	Chair	On site
Wei	Dong	NIM	China	Member	On site
Lenka	Kňazovická	CMI	Czech Republic	Member	On site
Bruno	Hay	LNE	France	Vice-Chair	On site
Albert	Adibekyan	PTB	Germany	Member	On line
Christian	Monte	PTB	Germany	Member	On line
Ferruccio	Girard	INRIM	Italy	Member	On line
Naofumi	Yamada	NMIJ	Japan	Member	On line
Megumi	Akoshima	NMIJ	Japan	Member	On site
Daniel	Cárdenas	CENAM	Mexico	Member	On line
Sergei	Kondratiev	VNIIM	Russia	Member	On site
Peter	Pavlasek	SMU	Slovakia	Member	Absent
Suyong	Kwon	KRISS	South Korea	Member	On line
Humbet	Nasibli	TÜBITAK-UME	Turkey	Member	On line
Jiyu	Wu	NPL	UK	Member	On line
Howard	Yoon	NIST	USA	Member	On site
Nenad	Milosevic	VINCA	Serbia	Observer	On line

17 Attendees

7 onsite
9 online
1 absent

STATUS OF THE COMPARISONS

S	Topic	Pilot	Status	Next steps
S1	Emissivity	NIST (L. Hanssen)	Metrologia, Volume 53, Nr1A	CMCs to be submitted
S2	Thermal Conductivity	LNE (B. Hay)	Metrologia, Volume 57, Nr1A	CMCs to be submitted
S3	Thermal Diffusivity	NMIJ (M. Akoshima)	Draft B reviewed by WG-KC. Comments received back. Draft B to be updated and re-submitted to WG-ThQ: -> delay! **Schedule proposed during the WG-ThQ Meeting**	To be published on the BIPM Website

DIGITALISATION AND DATA MANAGEMENT: INPUT

DCC for Emissivity Measurements

Objective

- Harmonized machine-readable calibration certificates
- Standardized emissivity measurands and metadata
- Harmonisation with **reflectance** and **transmittance** measurements -> **CCPR**
- Alignment with DCC schema and CCT-WG DIG

Proposed measurand	Typical dependence
Directional spectral emissivity	$\varepsilon(\lambda,\theta,\phi,T)$
Hemispherical spectral emissivity	$\varepsilon(\lambda,T)$
Directional total emissivity	$\varepsilon(\theta,\phi,T)$
Total hemispherical emissivity	$\varepsilon(T)$
Integrated emissivity (optional)	$\varepsilon(\lambda_1...\lambda_2,T)$

Proposed measurement quantities / metadata

- Surface temperature
- Wavelength / spectral range
- Viewing geometry
- Directional / hemispherical definition
- Integration limits

Optional / method-specific:

- Blackbody temperature
- Detector temperature
- Atmosphere (air / vacuum)
- Uncertainty
- Polarization (if relevant)

Preliminary DCC structure

```
measurementResult
├── measurement definition
│   ├── wavelength scale / spectral range
│   ├── viewing geometry
│   ├── sample surface temperature
│   └── directional / hemispherical definition
├── result: spectral emissivity
│   ├── emissivity values
│   └── uncertainty
├── result: integrated emissivity
│   ├── emissivity values
│   └── uncertainty
└── method / traceability metadata
    ├── measurement method
    │   ├── direct comparison
    │   ├── integrating sphere
    │   ├── dynamic / transient methods
    │   └── calorimetric method
    ├── experimental setup / conditions
    │   ├── reference blackbody
    │   ├── detector / FTIR setup
    │   ├── atmosphere (air / vacuum)
    │   ├── integration / conversion method
    │   └── calibration procedure
```

Open Questions

1. Which quantities define the emissivity measurand? *(e.g. wavelength, viewing geometry, surface temperature)?*
2. Which parameters should be reported as influence conditions vs. method metadata? *(e.g. bb temperature, setup, ambient conditions)?*
3. What should be the minimum interoperable emissivity dataset?

Physikalisch-Technische Bundesanstalt ■ Braunschweig and Berlin

CCT Meeting of the CCT-WG-ThQ (2026)

DIGITALISATION AND DATA MANAGEMENT: INPUT

Thermometry

Report on the activities of WG TQ

EURAMET

EURAMET project 1516

Finished

- **Title :** Determination of thermophysical quantities measurement capabilities beyond EURAMET
- **Objectives :** Create a database gathering laboratories and institutes outside the EURAMET community that have the capabilities to measure thermophysical properties (and that could be potential partners for projects and cooperations)
- **10 participating partners :** *BFKH (HU), ČMI (CZ), INRiM (IT), LNE-Cnam (FR), NPL (UK), PTB (DE), SMU (SK), TUBITAK-UME (TR), VINS (RS), UVa (ES)*

Action 2025-1

P. Pavlasek to finalise the EURAMET project No. 1516 and to conclude with a published final report on the EURAMET website.

A. Albo (INRiM) to include a link to a digital database that will be embedded into the report.

Thermometry

Report on the activities of WG TQ

EURAMET

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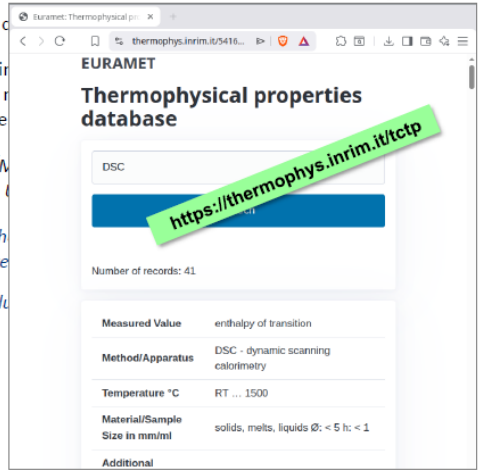
Action 2025-1

P. Pavlasek to finalise th with a published final re

A. Albo (INRiM) to inclu into the report.

The database and search tools are completed and operational



B. Hay BIPM-CCT-WG-ThQ meeting - 18th May 2026 – Sèvres (France) 5

GUIDE: INPUT

Thermometry

Report on the activities of WG TQ

EURAMET

Technical guide on high temp. thermal diffusivity measurements

Published

- **Objective:** Outline basic technical requirements for measuring thermal diffusivity of solid materials at high temperature (up to 3000 °C) by laser flash method.
- **4 participating partners**
  LNE-Cnam (FR), NPL (UK), SMU (SK), VINS (RS)

Technical guide n° 5 available online on the EURAMET Website since 24th July 2025

Invited lecture

A technical guide on high temperature thermal diffusivity measurements by the laser flash method

Bruno Hay, Nenad Milošević, Peter Pavlásek, Jiyu Wu

ECTP 2026

23rd European Conference on Thermophysical Properties
June 21 to 24, 2026
Serge Kampf les Fontaines Castle, FRANCE

ELECTION PROCESS

Quorum: Ok

Candidate(s):

Bruno HAY (Fr)

Results:

Against: 0, Abstain: 0, For: All the participants

Conclusion:

Congratulations to Bruno HAY as a new Chairman of WG-ThQ

Thank you for your attention!
&
Thank you to all CCT Members for your consideration and collaboration!