CONSULTATIVE COMMITTEE FOR THERMOMETRY (CCT)

The CCT harmonizes **global thermal measurements** through SI traceability.
It coordinates **international comparisons** while guiding the **realization of the kelvin**.
This work is vital for environmental monitoring and digital industry and ensuring "always-right" measurements for life-saving health diagnostics, energy efficiency or nanoscale innovation.

Impact

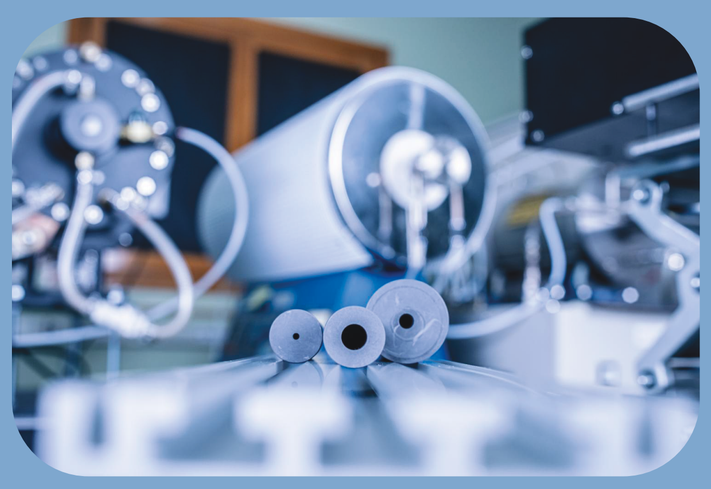
Low-carbon energy generation – nuclear, renewable and hydrogen – all depend on traceable measurements of temperature, humidity and thermophysical properties. They also underpin reliable tracking of essential climate variables and support the safety, quality and proper storage of food supplies around the world.

KEY ACHIEVEMENTS SINCE 2022

Temperature standards and traceability

Coordination of the research to **improve or even replace the International Temperature Scale of 1990 (ITS-90):**

- Determination of the thermodynamic temperature of selected high temperature fixed points.
- Measurement of the differences between the thermodynamic and the ITS-90 temperature.



Credit: CEM radiation thermometry lab

Digital transformation for thermal metrology



Credit: Microsoft Copilot AI

- The CCT is building a fully digital metrology infrastructure by launching **machine-readable standards** (Digital *MeP*-K) and **automated data interfaces** (APIs).
- This evolution will facilitate data flow into smart factories, networks or autonomous industrial systems.

Global guidance for global challenges

The CCT provides the **technical "blueprints" for accurate measurement** - from supporting clean energy processes and industrial *in situ* traceability, to creating emergency protocols for medical fever screening, to measurement methods in climate monitoring.



Credit: Microsoft Copilot AI