CCT member and observer Activity Report

Period: January to December 2021

Institute: NSC “Institute of Metrology”

State economy: Ukraine

Number of persons involved in thermometry of the institute: 7

Short summary of research and development:

1. Explored ideology of constructing a temperature scale in the way of the reproduction of a temperature unit by absolutely black body emitters based on the reference points of pure metals of zinc, aluminium, silver and further transferring of the unit of the temperature to an variable temperatures absolutely black body emitter of using a pyrometer-comparator. Composite uncertainties of reproduction and transmission of the unit of temperature Kelvin by the radiation method are analyzed.

2. The Kelvin temperature unit standard in the range from 273.16 K to 1357.77 K has been upgraded, its characteristics have been investigated, and an uncertainty budget has been drawn up. As a result of research, it has been established that the accuracy of reproduction and transmission of the unit of temperature is increased, which can be confirmed as a result of comparisons that are expected in the future.

Short summary of recent comparison activity:

COOMET 593/RU/13 (COOMET.T-K3.3) - Regional key comparisons of national standards of temperature units in the range from 0.01 to 660.323 ° C.

Short summary of other activities:

1. Became a member of the CCT Task Group for Air Temperature (CCT-TG-Env-AirT).

2. Researching work is in progress, the results of which will be presented at a joint meeting of the technical committees of COOMET TC 1.10 and EURAMET TC-T.

Link to bibliography or list of bibliography (last 5 years):

The list of publications for the last 5 years is attached.