

Research Program on the Thermophysical Quantities Metrology at LNE Contribution to the European Metrology Network and to the BIPM-CCT

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During the last decade in the field of thermophysical and optical quantities of materials, new metrology capabilities have been developed at LNE within the framework of the French National Research Programs and more recently with the support of the European Metrology Research Program. Scientific research has to address more efficiently the needs of the society and also to enabling to increase the industrial competitiveness. According to these challenges, main following key actions have been undertaken [1-3]: - Setting up a new metrological platform (MATIS – MATerials for Industry and Society) dedicated to the characterization of the thermal and optical properties of materials, - Strengthening skills and facilities in the following fields: Radiative properties, Thermal Transport properties... - Developing key initiatives in materials thermal metrology within the framework of the European metrology infrastructure under construction, - Participating and steering the new Task group focused on thermophysical quantities metrology within the framework of BIPM-CCT research activities Scientific research performed by the European metrology institutes on thermophysical quantities of materials should provide more accurate and traceable solutions for enabling new European technology developments dedicated for instance to energy, environment or industrial issues, and also for implementing the scientific knowledge. Therefore, this presentation will mainly focus on research led by the European Metrology Network in the field of thermal metrology of materials applied to some challenging topics (i.e. energy efficiency of power plants...). This regional work will be also compared to other international research actions especially performed within the framework of the BIPM-CCT-TG-ThQ. Acknowledgements: Results of the research work presented in this talk were funded by the French Industry Ministry, the French National Metrology Network and the European Metrology Research Program (EMRP) jointly funded by the EMRP participating countries within EURAMET and the European Union.

References:

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