

**INRiM Progresses in Developing an Adiabatic Calorimeter for High Accurate Specific Heat Capacity Measurement in Liquids, Solids and Soft Materials at Atmospheric Pressure**

P. Alberto Giuliano Albo<sup>C, S</sup>, Simona Lago, Andrea Merlone and Francesco Moro

*INRiM, Thermodynamics Division, Turin, Italy*

*a.albo@inrim.it*

Transformations between mechanical and thermal energy cannot be characterized without the knowledge of the specific heat capacity of the substance in which the phenomena occurs. In Italy, the National Institute of Metrological Research (INRiM) is involved in the thermodynamic characterization of liquids, solids and soft-solids, used both in environmental and medical areas. In this work, an adiabatic calorimeter, designed and developed at INRiM, is described. Preliminary measurements on well-known fluids are shown and discussed. The authors intend to improve the adiabatic calorimeter until the overall relative uncertainty will reach 0.1%, at the condition of atmospheric pressure.