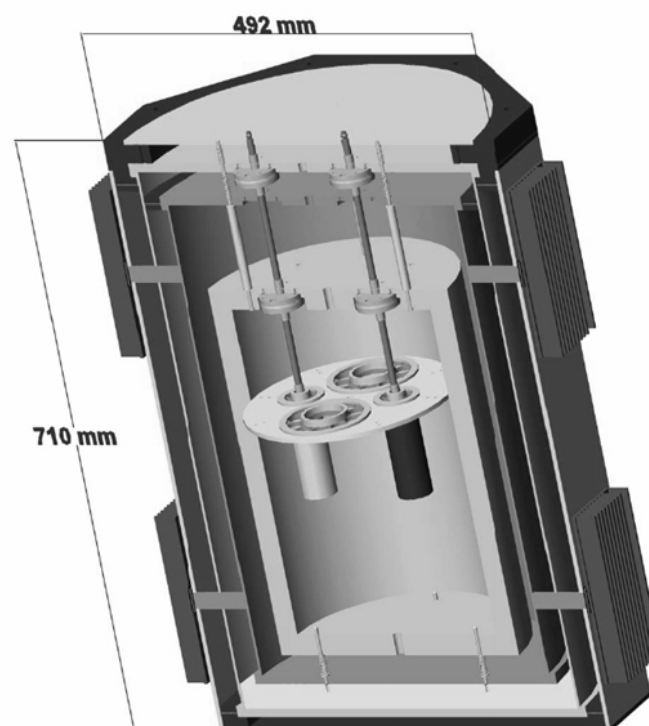


02RF015 Study and characterization of a microcalorimeter thermostat

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A high-accuracy adiabatic microcalorimeter has been developed at Istituto Nazionale di Ricerca Metrologica (INRIM, Torino, Italy) for the realization of the radio frequency and microwave power primary power standard. The apparatus is intended to evaluate the efficiency of proper power sensors of thermoelectric or bolometric type by measuring their losses in terms of heat produced. These kind of measurements require a good thermal stabilization of the measurement chamber, therefore a dedicated thermostat has been designed, assembled and characterized at INRIM in order to obtain a thermal stability of ± 1 mK on a daily basis.



Schematic view of the microcalorimeter thermostat.

02RF029 Water Estimation in Sugar Cane Using Microwaves Signal

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The major interest in this work is to make a good link between the water level in sugar cane and the voltage level detected when we use microwave energy applied to sugar cane; by now we have two options when we are using microwaves energy, one is sending the microwaves signal through the sample (material) and the second is when the signal is reflected after the interaction with the material. The selected method is the second option the signal reflected, this because by the liberty to apply in the same plane the microwaves signals, the signal generator and the sensor that collect the signal modified by the material of interest. The selected method permit a true relation of the voltage levels detected with the microwaves system after the application, and the water that content the sugar cane; to get a good relation we propose the use of the Weighting Drying Weighting which gives a correct data about the quantity of water that a sugar cane content.