

Batemika at TEMPMEKO 2016

TEMPMEKO 2016, the international Symposium on Temperature and Thermal Measurements, was held in June 2016 in Zakopane in Tatra Mountains in Poland, EU. Zakopane is a popular tourist destination for skiing, mountaineering and climbing. It is world famous for its ski jumps Wielka Krokiew, which is a regular venue in the FIS Ski Jumping World Cup.



Ski jumps in Zakopane

The event was organized at the Belvedere Congress Centre, a beautiful place which combines modern comfort with traditional Zakopane architectural style.



Belvedere Congress Centre

TEMPMEKO is the leading event where people from thermometry community present new scientific advances, share ideas, discover new technologies in instrumentation and meet colleagues from all over the world. The 2016 edition featured 373 participants from 46 countries worldwide, representing 161 organizations (national metrology institutes, universities, industry and manufacturers). The scientific program included 6 plenary lectures, 186 oral presentations and 198 posters. The event was supported by 16 sponsors and exhibitors.



TEMPMEKO 2016 opening ceremony



TEMPMEKO 2016 poster sessions

At Batemika Measurement Solutions we were proud to be a sponsor and exhibitor at the TEMPMEKO 2016, which gave us the possibility to present our products and services to the international community of thermometry and temperature metrology. At our booth we exhibited our established products, such as the precise 3-channel thermometer readout UT-ONE B03A and the Bridge mA-meter M100, some of our new products and prototypes, and a joint software project with Measurements International.



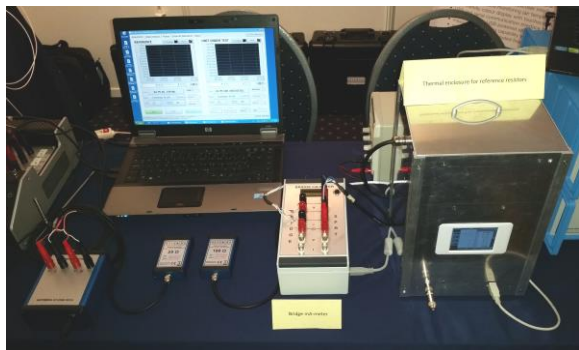
Batemika exhibition booth

The major novelty that we presented for the first time at the TEMPMEKO 2016 exhibition is the 12-channel thermometer readout UT-ONE S12A. UT-ONE S12A can measure platinum resistance thermometers, thermistors and thermocouples with accuracy down to a mK. UT-ONE S12A is connected to the computer via USB interface (RS232 and GPIB are optional) and the measurement is controlled by LabVIEW software. UT-ONE S12A is especially suitable for

validation of climatic chambers, particularly in a combination with 12 precise Pt-100 probes, which we supply in collaboration with our partner Elpro, d.o.o. The entire measurement system is very compact and perfectly suitable for onsite work. LabVIEW acquisition software and drivers are included free of charge.



UT-ONE S12A thermometer readout with 12 Elpro Pt-100 probes demonstrating the validation of climatic chambers



A selection of our products and prototypes

The M100 Bridge mA-meter is an established specialized tool for the non-intrusive and accurate measurement of the measurement current of precise resistance bridges. This device can be used to improve the accuracy of the self-heating correction in SPRT measurements, as well as to provide diagnostics in the resistance bridge operation.

The R210A reference resistors are rugged and portable resistance working standards, with extremely low temperature coefficient of ± 0.5 ppm/ $^{\circ}\text{C}$ max and maximum drift of 2 ppm/year.

An important part of our product portfolio is also the measurement software in NI LabVIEW environment. We supply each of our products with LabVIEW drivers and sample applications, which provide basic operation from a computer, as well as a good starting point for development of your own applications. On request, we can provide qualified customers with LabVIEW source code for selected applications.

Besides the generic applications, Batemika is also developing fully customized solutions for the

automation of thermometry calibration laboratories. Our solutions are based on the central database approach and are fully adopted to your calibration/measurement procedures.

A special interest of the thermometry community was given to our prototype thermal enclosure for reference resistors, which is entering production in the beginning of 2017. The temperature range is 15 $^{\circ}\text{C}$ to 40 $^{\circ}\text{C}$ with stability of 0.002 $^{\circ}\text{C}$. The enclosure can hold one reference resistor of Tinsley 5685A / WIKA CER6000 type. The enclosure features Peltier cooling and is completely noiseless and oil free. The built-in controller monitors and logs the resistor temperature to internal memory with capacity of several years of measurements. The solution features very low power, especially near ambient temperatures and after the stable temperature was reached. Enclosure has internal rechargeable battery, which enables the portability of the system without the loss of temperature stability of the reference resistor.

The major advantage of the presented thermal enclosure is in the possibility to set the operating temperature for each individual reference resistor, so that it matches the inflection point of the resistor temperature coefficient. In this special case, the temperature coefficient of the resistor is equal to zero, so there is no influence of temperature variations and loading effects on the resistance value.

To conclude, we would like to thank the organizers of the TEMPMEKO 2016 for a well-organized and friendly event. The next venue for the TEMPMEKO symposium will be in Beijing, China in October 2019. At Batemika we are looking forward to meet you again at TEMPMEKO 2019.

For more information about the TEMPMEKO 2016, including the photo gallery, please visit the official website at:

www.tempmeko2016.pl