

- 26-28. <https://doi.org/10.1109/ICIII.2010.400>
- [19] Husain, M.D., Atalay, O., Atalay, A., Kennon, R. (2016). Uncertainty analysis of the temperature–resistance relationship of temperature sensing fabric. *Fibers*, 4: 29. <https://doi.org/10.3390/fib4040029>
- [20] Abhishek, S. (2015). The study of active and passive transducers. *International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering*, 3(9): 70-73. <https://doi.org/10.17148/IJIREEICE.2015.3914>
- [21] Vasuki, B., Umapathy, M., Akhilan, S. (2007). Uncertainty analysis of temperature measurement system using interval arithmetic. *Sensors & Transducers Journal*, 84(10): 1619-1624. <https://doi.org/10.1080/10739140701750037>
- [22] Boya, N.R., Kande, S., Jinde, V.K., Chintakunta, S., Ungarala, M., Thogata, R. (2013). Design and development of FPGA based temperature measurement and control system. *International Journal of Electronics and Communication Engineering & Technology (IJECET)*, 4(4).
- [23] Callejas, I.J.A., Durante, L.C., de Oliveira, A.S. (2017). Thermal resistance and conductivity of recycled construction and demolition waste (RCDW) concrete blocks. *REM, Int. Eng. J.*, 70(2): 167-173. <https://doi.org/10.1590/0370-44672015700048>

NOMENCLATURE

R_t	The resistance of the wire at a temperature depending on its size and material properties, ohm
t	The calculated value of temperature, °C
R_0	The resistance of the thermoresistor at normal temperature θ_0 ,
R'_0	Resistance of the arm of the bridge
k'_1	a constant coefficient
a, b	Constant coefficients depending only on the parameters of the device
\bar{t}	The measured temperature °C
R_L	the load resistance of the bridge, ohm
V_{out}	the output voltage of the bridge, mV
V_s	the power supply voltage of the bridge, V
R	Fixed value resistance, ohm
G	voltage gain of the amplifier,
N	Non-linearity, °C

Greek symbols

$\alpha_1, \alpha_2, \dots, \alpha_i$	constant coefficients, the values of which (as well as the degree of the polynomial) are determined from the results of calibration of a thermoresistor, C^{-1}
θ_0	normal temperature, °C