Electronic Processing of Thermoelectric Voltages in HF CVD Reactor for Synthesis of Carbon Nanotubes

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Abstract. This study presents the electronic circuits of the transmitting part of the device built in the rotating part of a temperature meter with wireless transmission of temperature data in a technological reactor. The introductory part presents the unique design of the power source for this data sending block structure. The temperature sensor is an N-type thermocouple placed under the holder of substrates. The generated thermoelectric voltage is amplified and converted to the frequency of voltage pulses. Electronic compensation of the heating of the ends of the thermocouple is also implemented in the electronics of the transmitting part of electrical impulses. The conclusion is devoted to the calibration and estimation of the uncertainty of the temperature measurement in the measuring chain.

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