Electronic temperature sensors and transmitters prove to be a reliable and practical solution for temperature detection not only due to their high accuracy and reproducibility, but also through a variety of interfaces to the process and to the operator. In industrial applications, temperature is measured with resistance thermometers or thermocouples. Resistance thermometers accomplish this task via temperature-sensitive electrical thermistors. A distinction is made between PTC thermistors, whose resistance increases with increasing temperature and NTC thermistors with opposite behavior. In the kinetic temperature is the variable needed for subjects like heat transfer, because it is the translational kinetic energy which leads to energy transfer from a hot area (larger kinetic temperature, higher molecular speeds) to a cold area (lower molecular speeds) in direct collisional transfer. Define constants, Maxwell Speed Distribution. The speed distribution for the molecules of an ideal gas is given by. From this function can be calculated several characteristic molecular speeds, plus such things as the fraction of the molecules with speeds over a certain value at a given temperature. It is used in calculating the rates of many phenomena. A number of chemical-kinetic problems related to phenomena occurring behind a shock wave surrounding an object flying in the earth atmosphere are discussed, including the nonequilibrium thermochemical relaxation phenomena occurring behind a shock wave surrounding the flying object. problems related to aero braking maneuver, the radiation phenomena for shock velocities of up to 12 km/sec, and the determination of rate coefficients for. Assessment of two-temperature kinetic model for ionizing air. C. Park. Physics. The model assumes that only two different temperatures exist in the gas—the rotational temperature of molecules is equal to the translational temperature of heavy particles and denoted by a common temperature ; However, experiments showed that intensity just behind the shock was negligible and peaked at a certain distance, after which it subsided and became constant at an equilibrium value. This radiation 'overshoot' phenomenon was predicted by the two-temperature model [Park, 2010]. The temperature within the dead air region is high due to conversion of kinetic energy to internal energy. The flow was found to be unsteady in the separated zone and consists of collapse and inflation. Time resolved images of the unsteady flow were taken at an enthalpy of 6.31 MJ/kg. [3] C. Park, Assessment of Two-Temperature Kinetic Model for Ionizing Air, J. Thermophysics (1989). [4] M. Panesi, T.E. Magin, A. Bourdon, A. Bultel, O. Chazot, Y. Badou, Collisional-radiative modeling in flow simulations, NATO Research and Technology Organization, 2008. [5] Magin, T.E., Panesi, M., Bourdon, A., Jaffe, R.L., Schwenke, D.W., Coarse-grain model for internal energy excitation and dissociation of molecular nitrogen, Chem. [16] R. Allouche, R. Haoui, Ionising Air in Thermo and Chemical Nonequilibrium Flow Behind a Plane Shock Wave, 14th AIAA Space Planes and Hypersonic Systems and Technologies Conference, 2006. Recommend this journal. Email your librarian or administrator to recommend adding this journal to your organisation's collection.