

Invention relates to the field of physical vacuum deposition and can be used to control the surface temperature of workpieces in order to produce high-quality thin films and coatings for various functional purposes in mechanical engineering, microelectronics, and other fields of science and technology. Method for measuring the surface temperature of workpieces involves protecting entrance window of pyrometer's optical system from condensation on it of coating material particles by using screen that is opened during temperature measurement and closed after measurement, in which screen for temperature measurement is opened after the coating particle generation process has stopped with a delay, ensuring complete condensation of metal vapor particles present in vacuum chamber at the moment the particle generation process stops, and in which the temperature measurement is performed while workpiece is located at the temperature measurement point with the movement of workpieces in vacuum chamber stopped. Proposed method allows for the production of high-quality coatings due to the high accuracy of surface temperature measurements on workpieces.