Abstract

This paper describes a simple automated instrumentation and measurement system that is designed to offer a more reliable and fast method of measuring temperature and pressure, in thin film deposition systems. The designed computer based measuring system was based on thermocouple type K temperature sensor, MP20C-01-F2 pressure sensor, parallel port for interfacing and LabVIEW driver for accessing data. The system was able to measure ultaneously when implemented in Edward Auto 306 Magnetron Sputtering System and stored these values in a computer memory, hence retrieved at operator's will. It had a temperature and a temperature error of ± 0.2 %. However, the designed system recorded varied pressure errors. In higher vacuum, pressure range of 1.0 x10-2 to 1.0 mbar, the mbar, the error of 0.5 % was observed. These errors were within acceptable range and therefore, the system is viable to be used in thin film deposition systems to automate the measurement of process parameters: temperature and pressure to achieve high quality thin films.