Abstract

The aim of this study is to identify the temperature control system by using artificial neural networks. A simple temperature system was built, and then proportional integral derivative (PID) controller was implemented. Experimental data was obtained. As there was no a priori knowledge of the temperature control system, a common and conventional method was used for the identification of the system. Then two neural networks models were used for identification of the system using MATLAB. The system identification methods produced different models for the system and these models were examined against the actual system using MATLAB. Comparison between the responses of the identified system and the original system showed that the neural network models were able to identify the system with minimal error than the conventional method. Neural networks can be combined to both identify and control the plant, thus forming an adaptive control structure.