4. HYPOTHESIS

“Machining process output cutting parameters are function of input cutting parameters. Prediction of output cutting parameters results into the saving in time - cost of manufacturing the product”.

Among various machining processes, the end milling process is one of the most fundamental and commonly encountered material removal operations occurring in a real manufacturing environment. The surface roughness is one of the important properties for evaluating the work piece quality during the end milling process. Therefore, many researchers have studied the modelling and prediction problems of surface roughness of a work piece in the end milling operation.

The most significant input cutting parameters for machining in end milling process are speed, feed and depth of cut. Therefore the surface roughness (Ra) will be predicted using these as a input cutting parameters.

Literature review reveals the fact that Adaptive Neuro – Fuzzy inference system (ANFIS) is a less error prediction system. Therefore in prediction model of tool steel materials in end milling process ANFIS will be used.