HARDNESS AND IMPACT STRENGTH PREDICTION OF AUSTEMPERED FCD-50 MATERIAL USING ARTIFICIAL NEURAL NETWORK (ANN) METHOD

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ABSTRACT
Cast iron is a kind of material which have high hardness, low ductility and economical value. By giving heat treatment to this, it will produce a material with good mechanical properties and low production cost.

Using experiment datas that have conducted before, a prediction system for hardness and impact strength for Austempered Ductile Iron (ADI) as the result of austempering process to FCD-50 can be produced. Those datas are managed using Artificial Neural Network (ANN) to get an accurate prediction.

The final result from this research is hardness and impact strength prediction program for FCD-50 austempering result material. The program is shown in Graphic User Interface (GUI) to make it easy to use. Thus, from this program, parameters of austempering can be achieved.

Keywords : Artificial Neural network (ANN), FCD-50, Cast Iron, Austempering, Austempered Ductile Iron (ADI)