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Experimental Investigation of Heat Treated Alloy for Hardness using Multiple Linear Regression Model

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ABSTRACT

Quenching media, temperature and time plays vital role to improve the mechanical properties of metal and alloys. Tap water blend with cow urine different compositions hot metal at different temperature interval and quenched the blend and find the hardness values Al 2585 alloy. Cow urine contains different ingredients to enhance the mechanical properties of the meal and alloy. Ingredients like sodium and silicon some other elements present homogeneously improve properties like tensile strength, yield strength and hardness. Sodium refine the micro structure andsilicon interlocking the grain boundaries of the metal. The model defined the relationship existing between the two variables of % of blend and temperature of specimen and hardness value, the dependent variables. This was correlated with existing theories are the relationship between Hardness and two variables. An analytical model was developed for the fore casting of hardness, it was proved and certified to be a positive valuation tool for estimating the hardness on the heat treatment process.

Keywords: Al Alloy, ageing, Hardness, regression, quenching media