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Experimental investigations on the effect of different quenching media on the properties of different grade steel parts

Suresh and Makesh

Abstract

The authors have investigated the effect of different quenching media on the properties of different grade steel parts. Normally the steel parts may not have the desired strength properties and hardness. To achieve this, heat treatment process like case hardening, quenching, annealing, and tempering are carried out. The authors made comparative study, in order to determine the suitability of quenching media. Polymer quench was found to be better than other quench media, in terms of time and energy saving to get the required microstructure and hence improved mechanical properties. Heat treatment is a process in which steels or alloys are acted upon thermally to change their structure and properties in the desired direction. In their experimental work trials on case hardening and through hardening and quenching were carried out in oil and polymer quench media.