



International Journal on Recent Researches In Science, Engineering & Technology

(Division of Mechanical Engineering)

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy. It is an absolutely free (No processing charges, No publishing charges etc) Journal Indexed in JIR, DIIF and SJIF.

Research Paper

Available online at: www.jrrset.com

ISSN (Print) : 2347-6729

ISSN (Online) : 2348-3105

Volume 5, Issue 3,
March 2017

JIR IF : 2.54

DIIF IF : 1.46

SJIF IF : 1.329

Influence of petroleum and biodegradable quenchants on properties of medium carbon steels

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Abstract

The authors studied the influence of petroleum and biodegradable quenchants on properties of medium carbon steels. The properties of microstructure of Al alloys and steels depend on the heat treatment and quenching process used. Petroleum and vegetable seed oils are commonly used quenchants which are biodegradable. Soyabean oil is produced in great volumes in india. The authors ,in their work considered low carbon steel and heat treated the same by using two petroleum based quenchants with slow cooling oil and fast quenching oil and a biodegradable quenching namely soyabean oil and then evaluated the mechanical properties and microstructure. The quenchants can be used in place of petroleum oils which improve mechanical properties. Their heat treatment experimental part consist of stage-1- specimens heated to 860⁰c and stage-2- soaked at same temperature for two hours and stage-3 quenching in different quenchants.