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## Experimental investigations to study the effect of vegetable oil oxidation on the ability to harden AISI 4140 steel

Lauralice and Sivaraj

### Abstract

The authors have conducted experiments to study the effect of vegetable oil oxidation on the ability to harden AISI 4140 steel. This is the condition for using biodegradable and less toxic alternatives to petroleum oil as quenchants for steel. The promising oils studied by them are soyabean oil and castor oil. In their investigations they made use of computational simulation to estimate the capability of above oils for improving the mechanical properties and microstructure. The results of their work were not only used for illustrating the potential ability of above oils as quenchers, but also the enormous potential benefit of computational simulation.