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**(Division of Mechanical Engineering)**

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## **Experimental studies on the cooling capacity of different quenchants**

**Lijun and Ali**

### **Abstract**

The authors made extensive studies on the cooling capacity of different quenchants. The objective of their study was to compare the performance of the quenchants in the areas of mechanical properties and microstructure. The traditional quenchants are water and oil and gas. Gas quenching is relatively new process with several important advantages such as minimum environmental impact, clean products and ability to control the cooling locally. In order to increase the cooling capacity of gas, a spray of water is added during gas quenching. The authors used Cr 15 steel and made use of water, quenched oil and nitrogen gas for comparison of temperature difference and cooling velocity of the specimens. Their experimental work consisted of selecting the test specimens, their geometry and composition curves for temperature time using different quenchants were reported by them.