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Novel Method quenching using biological quenching media

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Abstract

The author has tried a novel method of quenching using biological media and studied the effect of this quenching media on micro structural and mechanical properties of Al alloys. The biological quenching media used by them is a mixture of water and cow urine or water and sheep urine at different percentage composition. According to them the sodium present in the sheep or cow urine improves or refines the grain structure and the silicon improves the interlocking of grain boundaries. They have chosen three different temperatures. For quenching. The quenching period was 90 minutes. The test specimens are subjected to different mechanical testings to find out the YS and UTS and the micro structure of the fractured test specimens was obtained. They concluded that this novel method of quenching resulted in improvement of mechanical properties and better micro structure. The major contribution of their work is to study the effect of adding cow and sheep urine with different percentages during quenching process and to note the mechanical properties and microstructure. It has been observed that there is an overall marginal improvement in the mechanical properties of the Al alloys and there is appreciable refinement in the grain boundaries, paving way for improved mechanical properties.