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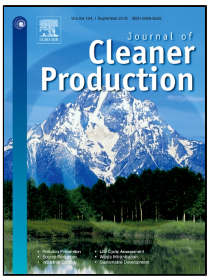

A critical review of the current water conservation practices in textile wet processing

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A critical review of the current water conservation practices in textile wet processing

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Key Words:

Water conservation, Textile wet processing, Eco friendly dyeing, Water less dyeing, Foam dyeing, Effluent treatment

Abstract:

Textile wet processing industry accounts for a huge proportion in the consumption and pollution of fresh water. Increasing consumer awareness on the environmental issues, tightening environmental legislations on the effluents generated by textile industry and water scarcity in different areas of the world have compelled textile industry to review, restructure and reduce its water consumption and the associated effluent hazards. In this paper, a critical review of the latest water conservation practices in the textile wet processing industry is presented. Water conservation efforts in different segments of the textile industry have been classified into five major categories. These include waste water treatment and reuse, machine innovations, process innovations, chemical innovations, advanced water analysis and water saving tools. Waterless dyeing using supercritical carbon dioxide (SC-CO_2) and the use of low liquor ratio machines in textile wet processing are two very promising approaches for water conservation. But waterless dyeing needs further working to dye natural fibers in a reliable way. The huge capital investment required for SC-CO_2 dyeing machines and conversion of conventional dye houses into low liquor ratio dye houses is also a major hindrance in the way of the wider acceptance of these techniques in the industry.

1. Introduction: