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Monitoring and control of environmental pollution due to dyeing effluents

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Abstract:All the water samples were found to contain higher levels of hardness and Total dissolved solids than their prescribed tolerance limits. The levels of Cl^- , Ca^{2+} were slightly higher than the tolerance levels. The pH levels of the water samples were found to be well within the tolerance limits. TCB/UV is an effective method for the photocatalytic degradation of RR2. The dye was completely degraded at 90 minutes in presence of TCB/UV. The degradation rate increase from neutral to alkaline pH and at pH 10 the dye is completely degraded. The percentage of dye removal is inversely proportional to its concentration .i.e., the lower the dye concentration the higher the efficiency of dye removal. The kinetic model of Langmuir-Hinshelwood well describes the photodegradation results. The photocatalytic degradation of the Reactive Red 2 dye exhibited pseudo- first- order kinetics.

Key words:Hardness, Total dissolved solids, calcium, chloride, pH, Reactive Red 2 dye, TCB.

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