## عنوان مقاله:

New bleaching sequence decreasing chlorine dioxide consumption and AOX generation in Kraft pulp bleach plant

## محل انتشار:

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## خلاصه مقاله:

The emission of AOX from pulp bleach plants have reduced considerably by decreasing the use of chlorine for pulp bleaching and development of ECF and TCF bleaching sequences. However, recent environmental limits have forced the pulp and paper industry toward the optimization of ECF or TCF bleaching processes, aiming to reduce the high cost chemicals, water consumption, and AOX and COD discharge in the effluent. The most important drawback of ECF bleaching is the over-consumption of chlorine dioxide during the delignification stage. In order to explain the over-consumption of ClO2, in this study, the ClO2 delignification stage was simulated by treatment of a mixture of phenolic and non-phenolic lignin model compounds with various amounts of ClO2. The results of lignin model compounds treatment was compared with the delignification of softwood kraft pulp. Then, an attractive and industrially reliable alternative to the conventional DEDED bleaching sequence reducing ClO2consumption and AOX generation was introduced. Compared to the conventional DEDED sequence, the application of this technique, without washing between d and E, reduced ClO2 consumption and AOX generation by almost 30% and 50% respectively. The proposed strategy could be applied by industry without hard initial investigation and high operating costs.

## کلمات کلیدی:

Alternative Sequences; AOX; Bleaching; Chlorine Dioxide; Optimization