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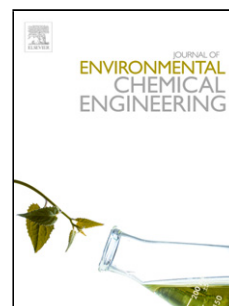
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The production and quantification of hydroxyl radicals at economically feasible tin-chloride modified graphite electrodes

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Highlights

- Synthesis of tin chloride modified graphite electrodes by the electrode-less deposition method.
- Salicylic acid was employed as the hydroxyl radical scavenger.
- The optimal current intensity for the initial production rate of $6.6 \times 10^{-6} \text{ molL}^{-1} \text{ min}^{-1}$ hydroxyl radicals was 0.4A.
- At higher current intensities 0.6A, 0.8A and 1A corrosion rate was of the order 0.176, 0.381 and 0.386 mm hr⁻¹ respectively.
- An *E.coli* killing efficiency of 99.99 % was achieved with a contact time of 5 minutes at a current intensity of 0.4A.
- Among the commercially available electrodes, graphite electrode was found to be the most feasible alternative for installation of an onsite water treatment plant.

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