

Kinetic and Formation of Chromium Oxide Nanoparticle in Supercritical Water Oxidation of Wastewater from LCD Manufacturing Process

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In supercritical water, oxidation of wastewater from LCD manufacturing plant was performed in an isothermal, isobaric continuous-flow reactor at the condition of 396–615°C, 250 bar. It is found that chromium content in wastewater could be recovered as chromium oxide (α -HCrO₂ and Cr₂O₃) nanoparticles during oxidation process. All of the organics component in the wastewater could be completely destructed at supercritical temperature and pressure with sufficient amounts of oxygen.