31-2012-2724 | Novel Method for the Generation of Superoxide Anion and its Application in Hydrolytic Processes
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Background

During the past decades, several new and innovative solutions for efficient contaminant removal from soils have been investigated. Ex-situ technologies include excavating soils followed by land filling, thermal desorption, thermal destruction (incineration), soil washing, biological remediation and vacuum extraction. However, the ex-situ methods generally have low efficiency, long time of process and high costs. In addition, some of these methods cannot destroy contaminants and in some cases may cause a secondary pollution.

Our Innovation

The inventors have discovered a novel method for the in-situ generation of a remarkably stable superoxide anion radical under ambient conditions based on mixture of hydrogen peroxide and sodium hydroxide.

Advantages

- Very effective CO2 absorber - more effective than standard methods
- Swift reaction to targeted compounds and petroleum products
- Pollutants are rapidly oxidized and mineralized

Technology

The technology is a process for treating a soil contaminated with a pollutant selected from the group consisting of petroleum products and aromatic hydrocarbons, comprising bringing into contact with said soil an aqueous solution in which hydrogen peroxide and hydroxide source are combined.

Patent Status

Granted US 9,758,375; US 9,956,597; Australia 2012356048; Canada 2,859,618; China 201280069649.8; Europe 2794135; Europe 3140012

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