



ELECTROCHEMICAL DEHYDROGENATION, EPOXIDATION, SUBSTITUTION, AND HALOGENATION OF HYDROCARBONS AND HYDROCARBON DERIVATIVES

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Inventors: Marcel Schreier, Christine Lucky

The Invention

UW-Madison researchers have developed a new electrochemical method for synthesizing epoxides from hydroxy-alkanes. The method is implemented in a reactor comprising an anode and a cathode separated by an ion exchange membrane. A solution of water, halogen ions, and a hydroxy-alkane are added to the reactor, after which an electrical potential is applied. Upon application, the halogen ions react with the hydroxy-alkane at the anode to generate a halogenated hydroxy-alkane intermediate (i.e., anolyte). At the cathode, hydroxyl radicals are produced as a catholyte. The anolyte and catholyte are then contacted to generate an epoxide.

Tech Fields

- [Materials & Chemicals : Synthesis](#)

For current licensing status, please contact Michael Carey at mcarey@warf.org or 608-960-9867