

# Kinetics and Mechanism of the Electrochemical Reduction of [1,2-Bis(*tert*-butylperoxy)ethyl]benzene under Conditions of the In Situ Recovery of a Platinum Surface

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Received February 18, 2015

**Abstract**—The behavior of [1,2-bis(*tert*-butylperoxy)ethyl]benzene (**I**) on Pt electrode is studied by means of cyclic voltammetry (CVA). A comparison of the electrochemical properties of **I** and the properties of previously studied bridge-type 1,2,4,5-tetraoxane ((1,4)-1,4-dimethyl-7-(4-methylbenzyl)-2,3,5,6-tetraoxabicyclo[2.2.1]heptane) (**II**) shows that the biperoxide studied in this work is reduced on a Pt electrode at lower cathodic potentials and is resistant to electrooxidation.

**Keywords:** peroxides, tetraoxanes, electrooxidation, electroreduction, cyclic voltammetry.

**DOI:** 10.1134/S0036024416020333