



Study of Palladium (II) Catalysed Oxidation of D-(+) Ribose by Cerium (IV) in Aqueous Acidic Medium-A Kinetic and Mechanistic Approach

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ABSTRACT

The kinetic investigation of palladium (II) catalysed oxidation of D-(+) ribose by cerium (IV) have been studied in acidic medium in the temperature range 308-333 K. The reaction has been found to be first order with respect to D-(+) ribose in the presence of palladium (II) catalysed. The rate follow first order kinetics in palladium (II) catalysed oxidation reaction. The effect of $[HSO_4^-]$ has also been observed. The 1:2 Stoichiometry is observed in the oxidation. From the effect of temperature on the rate of reaction, various activation parameters have been computed. The various thermodynamic parameters were calculated from rate measurements at 308, 313, 318, 323 and 333 K respectively. A suitable mechanism has been proposed and a rate law explaining the experimental observations.

Keywords: Catalysed, D-(+) ribose, Cerium (IV), Oxidation and Palladium (II).
