HYDROGENATION OF DIMETHYLTHIOPHENE

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The reduction reaction of dimethylthiophene in presence hydrogen peroxide and biomimetical catalyst – EDTA Fe$^{3+}$ OH – the its mechanism including some elementary stages was studied.

In the previous paper [1], there had been given an information that white trying to oxidize dimethylthiophane in S–H$_2$O$_2$–H$_2$O–Acetone–Fe$^{3+}$OH/Al$_2$O$_3$ reactionary system there suddenly occurred hydrogenation reaction and in this sense it had been noted that its investigation has a special interest the present paper is devoted to the detailed observation of the reaction in two aspects: 1) its experimental realization and 2) discussion of specificaties of the probable mechanism of hydrogenation mainly connected with clearing the hydrogen source. Since in [1], there has been characterized the catalytic system in all details which is an inorganic enzyme mimics we do not touch it in the present paper to avoid repetition so that we consider it possible to refer the reader to that paper in, the case of interest. It should be noted that hydrogenation of thiophene and its derivatives is a well know subject, which is observed in details in [2]. Usually the applied catalytic systems are classical, rather traditional so that nothing unusual might be noted in their behavior.

Mean time application of biomimics of the type in the absence of the obvious reductant source in rather mild conditions is totally unusual both from the point of the observed effect and its high efficiency. We are sure that the results obtained might be useful in explaining the mechanism of separate functions of enzyme systems having used hydrogen peroxide as one of substrates.

References