

Study of Xanthine Oxidase Immobilized Electrode Based on Modified Graphite

Elena G. Horozova*, Nina D. Dimcheva and Zinaida J. Jordanova

Department of Physical Chemistry; University of Plovdiv; 24, Tsar Assen St., Plovdiv 4000 BULGARIA. Fax: (+359 32) 635 049. E-mail: horozova@argon.uni-plovdiv.bg

* Author for correspondence and reprint requests

Z. Naturforsch. **55c**, 60–65 (2000); received October 5/November 10, 1999

Xanthine Oxidase, Immobilized Enzyme, Modified Graphite, Hydrogen Peroxide, Enzyme Electrode

Xanthine oxidase (E. C. 1.2.3.2) was immobilized by adsorption on electrochemically modified graphite plate to obtain an enzyme electrode. The current of the enzyme electrode in substrate (xanthine) solutions was found to be a result of the electrooxidation of H_2O_2 generated in the enzyme layer. The linearity of the amperometric signal was up to a substrate concentration of $65 \mu\text{M}$ at 0.6 V (vs. Ag/AgCl). The response time was 2 minutes. The enzyme electrode preserves 80% of its initial activity after a three-week storage in air at room temperature.