Catalytic Decomposition of 3-Chloroperoxybenzoic Acid by Immobilized Catalase in a Non-Aqueous Medium

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Catalytic activities of catalase (CAT) immobilized on graphite – GMZ™, soot – "NORIT" and "PM-100" to mediate decomposition of 3-Cl-C_6H_4COOOH (3-CPBA) in acetonitrile have been investigated. Under these conditions, the kinetic parameters K_m, k, E_a, V_{max}, and Z_0 were calculated. Conclusions on a probable mechanism of the catalytic process observed were drawn from the calculated values of ΔG^*, ΔH^*, and ΔS^*. A quantitative UV-spectrophotometrical approach was used as the basic analytical tool. The electrochemical reduction of oxygen generated in enzyme catalysed 3-CPBA decomposition was examined with polarization curves method.