



ELECTROCHEMICAL INVESTIGATIONS ON THE BEHAVIOUR OF Ni-Cr BASED DENTAL MATERIALS IN THE SODIUM CHLORIDE – OXALIC ACID – LACTIC ACID SYSTEM

Daniel Sutiman ^{*}, Adrian Căilean, Daniel Mareci, Mircea Teodor Nechita

*Technical University of Iasi, Faculty of Chemical Engineering, Department of Chemical Engineering, 71 Mangeron Blvd.,
700050 Iasi, Romania*

Abstract

The corrosion behaviour of three commercial nickel-chromium based dental materials was investigated by electrochemical methods in a corroding mixture of sodium chloride, oxalic acid and lactic acid. In order to establish electrochemical parameters of the corrosion process, linear and cyclic polarization curves were plotted. The samples performances in the corroding system were investigated by weight loss, pH and electrical conductivity measurements. The quantitative analysis related with ions released in solution was performed as well. Scanning electron microscopy (SEM) imaging was used for surface investigations.

Keywords: nickel-chromium dental alloys, corrosion behaviour, polarization curves, pitting and generalised corrosion

^{*} Author to whom all correspondence should be addressed: sutiman@ch.tuiasi.ro