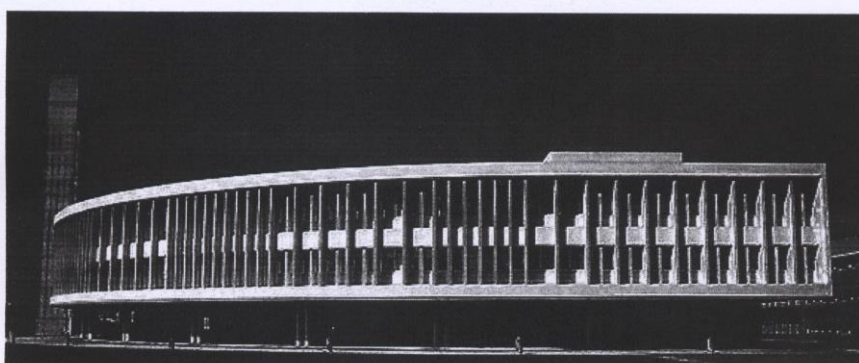




# 19<sup>th</sup> Meeting of the Portuguese Electrochemical Society

XVI Iberian Meeting of Electrochemistry

AVEIRO JUNE 30 – JULY 2 2014



COMPLEXO PEDAGÓGICO – UNIVERSIDADE DE AVEIRO

## BOOK OF ABSTRACTS

ORGANIZED BY

DEMAC – UNIVERSIDADE DE AVEIRO

(ON BEHALF OF SPE)

PROGRAMME

Time	June 29	June 30	July
8:00 - 10:00	Conference Registration		
8:50-9:00	Auditorium 23.1.5		
9:00-10:00	Auditorium 23.1.5		
9:50:10:00	Auditorium 23.1.5		
10:00-10:20	Auditorium 23.1.5		
10:20-10:40	Auditorium 23.1.5		
10:40-11:00	Auditorium 23.1.5		
11:00-11:20	Auditorium 23.1.5		
11:20-11:40	Auditorium 23.1.5		
11:40-12:00	Auditorium 23.1.5		
12:00-12:20	Auditorium 23.1.5		
12:20-12:40	Auditorium 23.1.5		
13:40-14:00	Auditorium 23.1.5		

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**12:00 – 12:20**

**O-32** - Electrochemically deposited manganese oxides nanoflakes for pseudocapacitors - **Tuyen Nguyen**, Michel Boudard, Maria Carmezim and Fatima Montemor - CP - Room 23.3.15 - **IST, University of Lisbon - Portugal**

**O-33** - Galvanic corrosion of two noble dental alloys in modified artificial saliva - **Sofia Capelo**, João CS Fernandes, Maria J Barão, Luís Proença, Inês TE Fonseca - CP - Auditorium 23.1.5- **University of Evora - Portugal**

**12:20 – 12:40**

**O-34** - Assessment of electrical conductivity relaxation technique for the measurements of oxygen-ion diffusion in solids - **Kyril Zakharchuk**, Eugene Naumovich, Sergey Mikhalevc and Aleksey Yaremchenko - CP - Room 23.3.15 – **University of Aveiro- Portugal**

**O-35** - Assesment of activity and capacity of antioxidants based on the kinetics of the reaction with electrogenerated HO radicals - Raquel Oliveira, João Louçano, **Fátima Bento**, Dulce Geraldo - CP - Auditorium 23.1.5 – **University of Minho- Portugal**

**12:40 – 14:00**

**LUNCH**

**14:00 – 14:20**

**O-36** - Porous composite membranes based on poly(vinylidene-trifluoroethylene) for Li-ion battery applications - **João Nunes-Pereira**, Carlos M. Costa, Maria M. Silva and Senentxu Lanceros-Méndez - CP - Room 23.3.15 - **University of Minho- Portugal**

**Galvanic corrosion of two noble dental alloys in modified artificial saliva**

*Sofia Capelo<sup>a,b</sup>, João CS Fernandes<sup>c</sup>, Maria J Barão<sup>b</sup>, Luís Proença<sup>d</sup>, Inês TE Fonseca<sup>d</sup>*

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The composition of saliva is affected by Diabetes Mellitus with consequences in the oral homeostasis, being important to understand how dentistry alloys behave in this medium. This study aims to evaluate the corrosion resistance of two noble alloys, namely, Cerapall® 2 (Au-Pd-Cu-In) and Pontor® 2 (Au-Pt-Ag-Cu) using diverse artificial oral composition. Diabetic patients present reduced salivary flow rate, increased salivary glucose and more acidic salivary pH. The combinations of these factors contribute to a higher risk of dental decay in this group of patients [1].

The study was conducted in two oral salivary compositions (artificial saliva at pH 7.1 and artificial saliva with different concentrations of glucose at pH 6.0), at 37 °C, by cyclic and linear sweep voltammetry, electrochemical impedance spectroscopy and chronoamperometry.

The potential and the current of the galvanic cell, obtained by coupling the two noble alloys, was recorded as a function of time, in the artificial saliva solution with (pH 6.0) and without glucose (pH 7.1), at 37 °C.

The ions release from the Cerapall® 2 and Pontor® 2 alloys was studied with and without the presence of glucose. SEM micrographs were obtained after 25 days immersion in artificial saliva, at 37 °C [2].

[1] AR Moreira, MSM Soares, IA Passos, FC Sampaio, *Revista Odonto*, 2007, 15 (30), 78-82.

[2] S Capelo, L Proença, JCS Fernandes and ITE Fonseca, *Int. J. Electrochem. Sci.*, 2014, 9, 593 – 609.