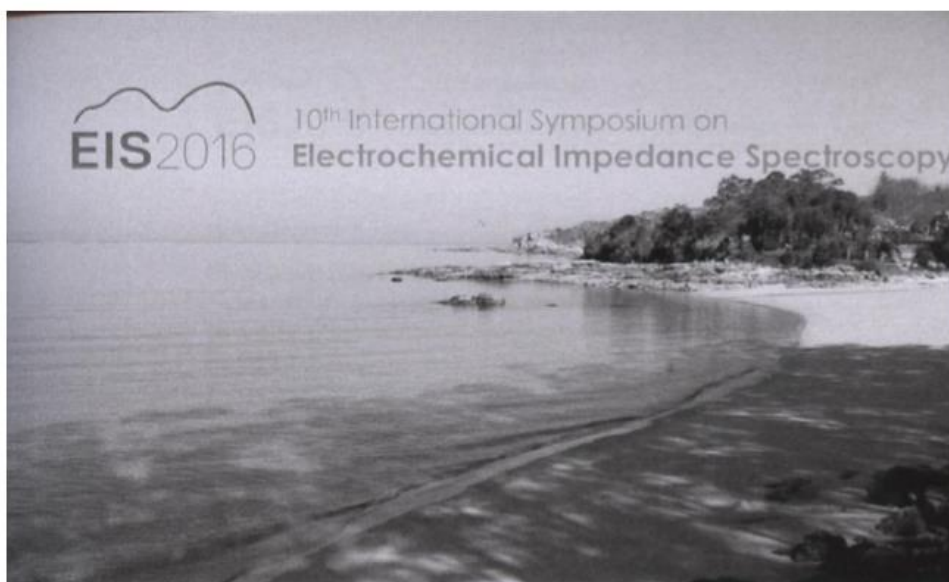




**EIS2016**

10<sup>th</sup> International Symposium on  
**Electrochemical Impedance Spectroscopy**



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## Application of EIS for dating archaeological materials

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Dating archaeological metals is in general a difficult analytical task. It is described the application of Electrochemical impedance spectroscopy (EIS) for this purpose, based on the measurement of impedance terms associated to the corrosion layers. EIS data were recorded for coins and other archaeological objects upon immersion of the pieces in mineral water and applying a bias potential for the reduction of dissolved oxygen. A generalized treatment, derived from previous analysis of lead [1] and copper-based [2] artifacts, is presented including theoretical expressions for the variation of impedances on corrosion time assuming uniform conditions of corrosion and a potential rate law [3].

**Keywords:** archaeological metals, dating, voltammetry of microparticles, electrochemical impedance spectroscopy.

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