

Title: **Determination of polyphenols by electroanalytical techniques**

Student: Andrea Robles Giménez

Date: June 2019

Supervisor/s: Dr. Miquel Esteban Cortada

Departament of chemical engineering and analytical chemistry

In this work there are described three different matrixes which the compounds of study, polyphenols, can be found in. Wine. Tea and coffee are ones of the most important sources of polyphenols in our diet thus these three are chosen for this paper. For each matrix a comparative between techniques and different parameters is accomplished. In the first matrix, wine, total polyphenol content (TPC) and antioxidant capacity (AC) are determined by two different techniques: cyclic voltammetry (CV) and differential pulse voltammetry (DPV). On the other hand, for tea, a qualitative and quantitative study of the polyphenols and its electrochemical index (EI) was made by CV and a square wave voltammetry (SWV). Besides, CV, is compare with a non-electrochemical method, high performance liquid chromatography (HPLC). At last, for coffee, a comparative between the three most common electroanalytical techniques: CV, DPV and SWV to determine the EI and TPC and to compare with a spectrophotometric method (Folin Ciocalteu) and HPLC.