

Thesis review report: this document was prepared after the first defense.

Document corresponding to the thesis with comments and suggestions and:

(1) The text must be standardized, in situ, sat., vs. or italics or not, check significant figures, Tables: some should be moved to the appendix, Figures to be improved, such as the respective caption, ...

(2) As I said during the thesis presentation, the introduction part should cover the 3 themes of the thesis and not about the common electrochemical and other techniques, that should appear in annex. And that's why some parts are repeated.

(3) This study is a model study. As there was no state of the art, I don't know which drugs would be interesting to administer in saliva. I think that paracetamol does not need any support and there are many drugs that are already administered under the tongue (such as for the heart).

Why delivery of PA with a support?

What is the objective of this study?

In my opinion, this part should be reworded in relation to the objectives. The work is interesting. In the paper Materials Today Communications, everything is more organized, including the figures.

(4) Magnification in SEM images

(5)

Drug Delivery systems, corrosion, electrodes modification

State of art: Compare it with what has already been done and what your contribution is.

(6) Ti is the support electrode. What role would Ti play in real applications for paracetamol??

(7) The graphic (Figure 14) is of very poor quality. Can it be improved? AND TO EXPLAIN IT BETTER

(8) Fig. Figure, figure ??: standardize everything

(9) In my opinion, in this study, with so much comparative data, a statistical comparison (ANOVA) should have been performed. In other words, the results obtained are significantly different or not.

These are the main changes suggested after reading the attached document. The document contains many more suggestions, such as:

(1) Scientific notation: $1.51 \times 10^{-2} \pm 0.21$; This applies to all numbers written in scientific notation.

(2) Title: **ELECTROCHEMICAL TECHNIQUES APPLIED TO THE ENVIRONMENT PROTECTION AND HEALTH?**

(3) FOR HPLC/MS/MS no mention is made of the sample pre-treatment that is required, usually solid phase extraction

(4) PA gives 2 peaks, or a multi-component peak?

(5) Very long sentences, paragraphs (such as page 86)

(6) If the first results with this Tara_ME extract were not promising, it made sense to continue with the following experiments? (page 134)

(7) Dots should appear in graphs instead of commas

- This document was prepared after the first defence.

The candidate had access to these corrections/suggestions and prepared the final thesis (also considering the suggestions of Prof. Maria Teresa Abdul and the supervisors).

After reviewing the final thesis document, I note that many of the graphs still have commas instead of points (in English), which may have been a problem with the graphics program.

At this time, my final evaluation is

“recommended for acceptance.”

Porto, 25 August 2025

Rosa Maria Magalhães Rego
University of Trás-os-Montes e Alto Douro