

INTRODUCTION

Goal: Present the preliminary results of a different approach for sensing dissolved analytes using electrochemical techniques.

Main Application: Monitoring sulfites in the food industry in Real-Time.

MATERIALS & METHODS

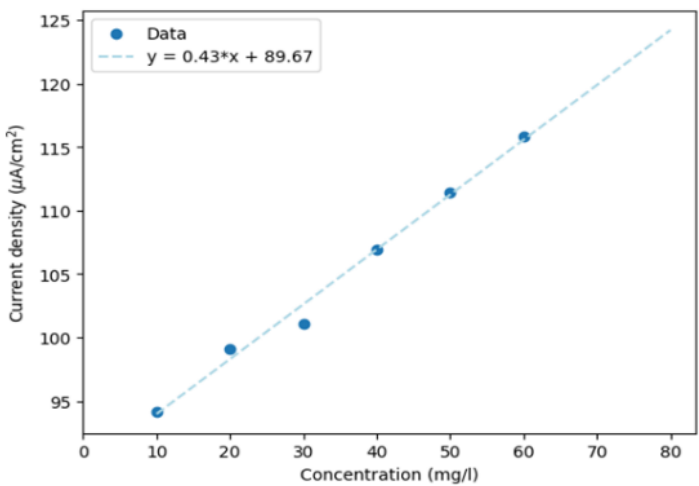
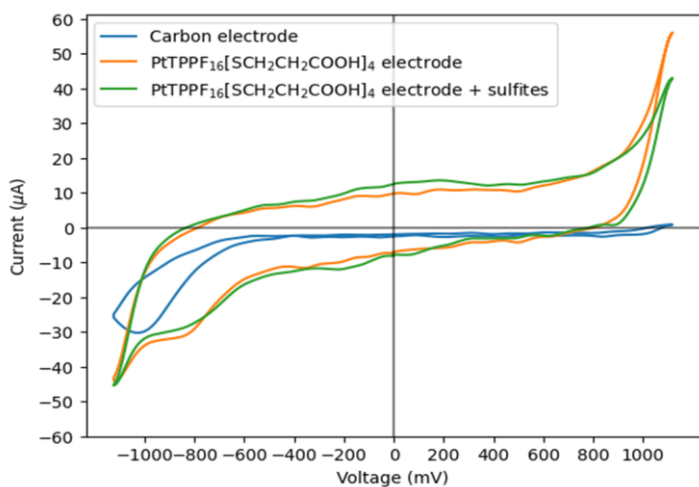
Electrodes

- Carbon
- Gold
- Metalloporphyrins



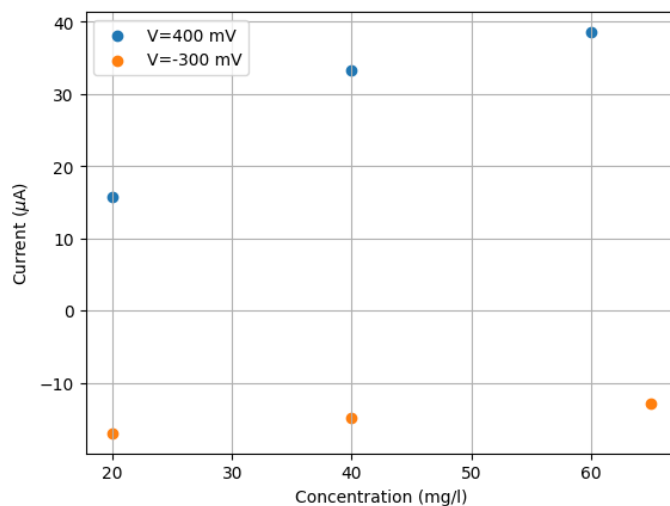
RESULTS

Porphyrin's response to sulfites



The electrodes activated with PtTPPF₁₆[SCH₂CH₂COOH]₄ are sensitive to sulfites.

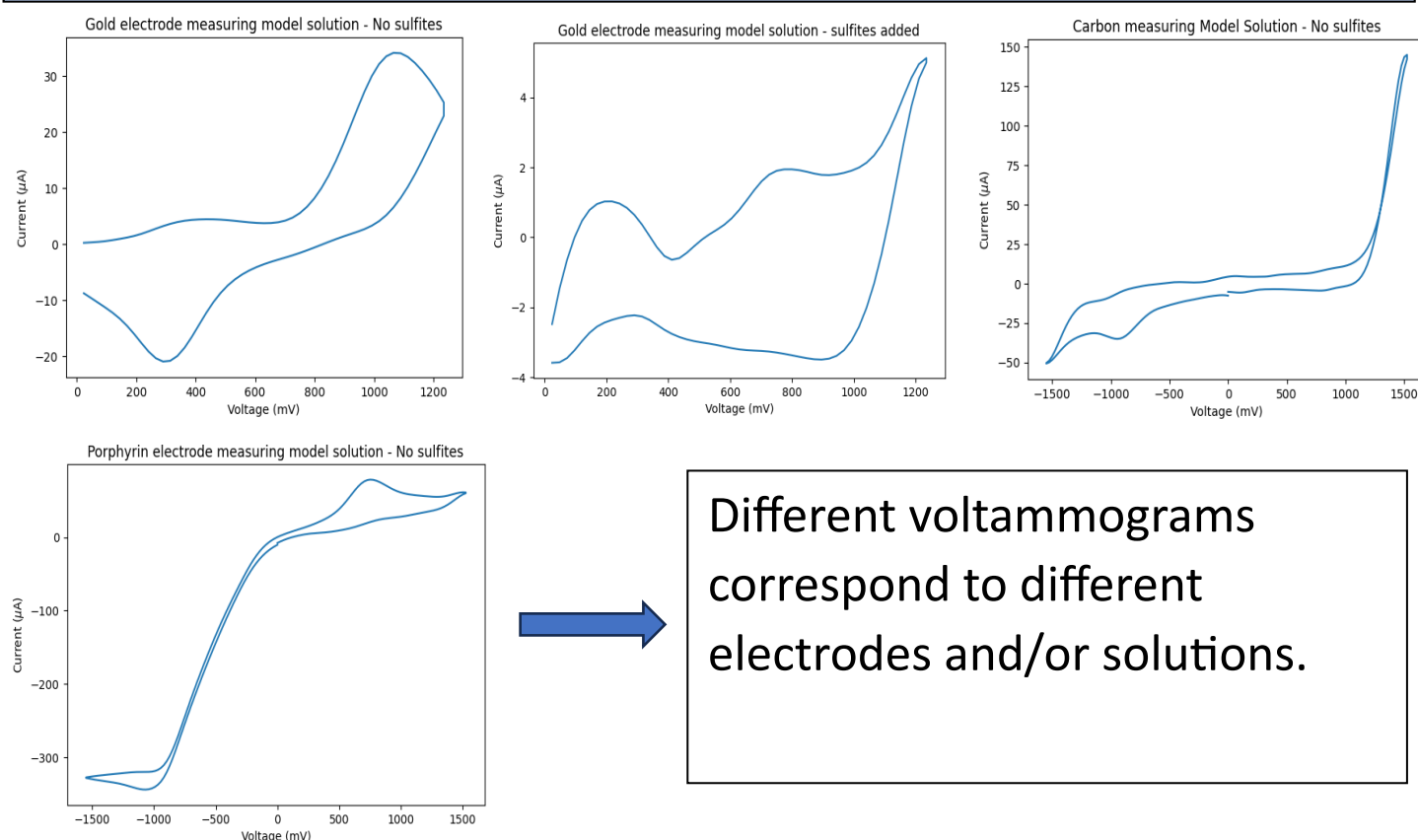
DC Amperometry and Pulsed Amperometric Detection



Amperometry	ΔI_{max}	Signal Decay
DC	10,220 μA	Yes
PAD	2,641 μA	No

PAD stabilized the signal detected.

Cyclic Voltammetry



Different voltammograms correspond to different electrodes and/or solutions.

CONCLUSIONS

- Porphyrins respond to different concentration of sulfites at low pH;
- PAD can be used to quantify sulfites, displaying a stable signal;
- CV identifies different electrodes and analytes, providing important information;
- These tools can be combined to monitor sulfites and other analytes in real-time.