

# Cell Constant Studies of Bipolar and Tetrapolar Electrode Systems for Impedance Measurement

Hanbin Ma, Yang Su, and Arokia Nathan

The Hetero-Genesys Laboratory, Department of Engineering, University of Cambridge

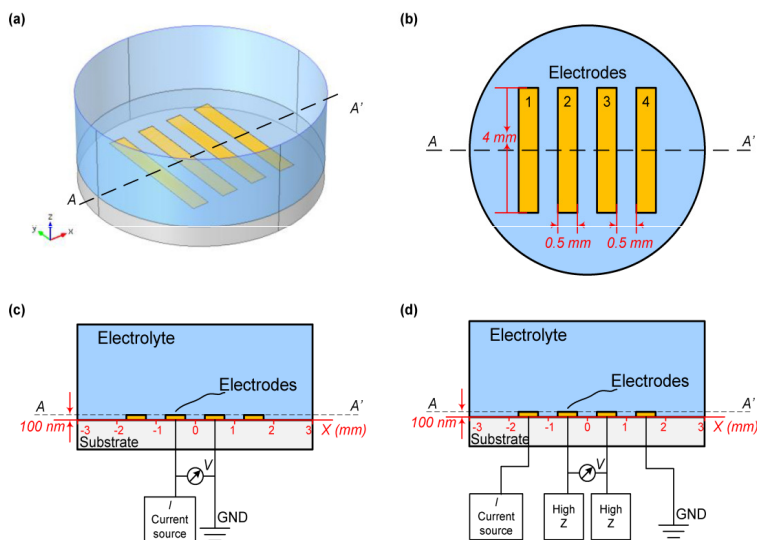
(E-mails: hm446@cam.ac.uk, an299@cam.ac.uk)

## Introduction

- Method to calculate cell constant in impedance measurement systems.
- Cell constant used to evaluate performance of planar electrode systems.
- Finite element method (FEM) used to simulate the performance of planar electrodes
- Concentration tests with bipolar and tetrapolar electrode systems and quantitative assessment of performance.

## Results and Discussions

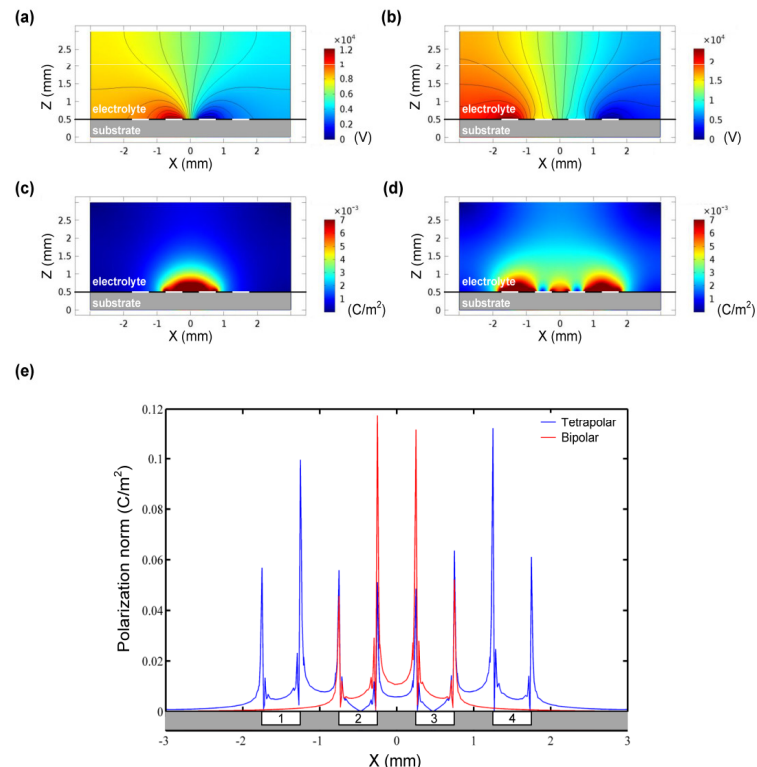
- Schematic layout of the planar electrode systems and FEA simulation models



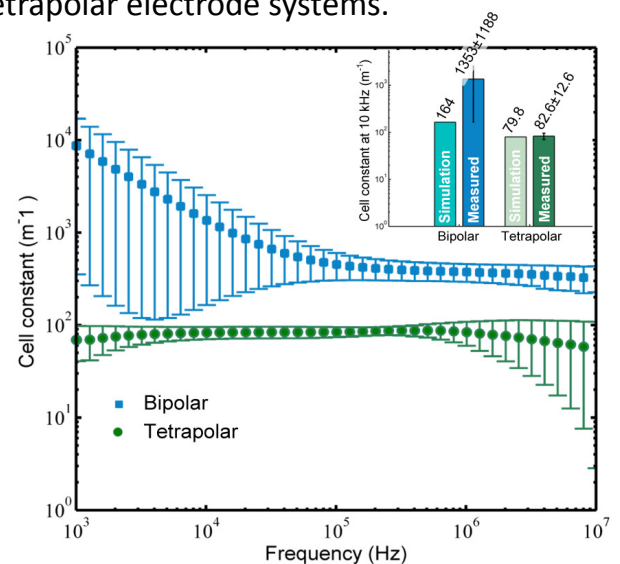
## Conclusion

- The tetrapolar system, which is more stable with higher sensitivity, has been proven to be a better arrangement as compared to the bipolar electrode counterpart.,.

- FEA simulation results for the bipolar and tetrapolar electrode arrangements.



- Measured cell constants of the bipolar and tetrapolar electrode systems.



**Related Publication:** • Hanbin Ma *et al.*, *Sensors and Actuators B:Chemical* 221, 1264-1270 (2015).

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