

# Heterogeneously Integrated Impedance Measuring System with Disposable Thin-film Electrodes

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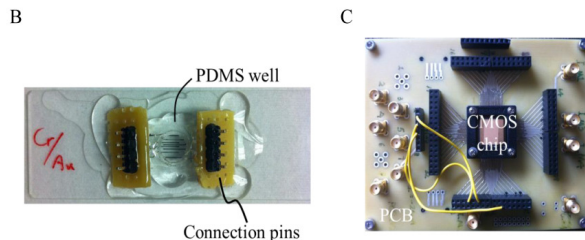
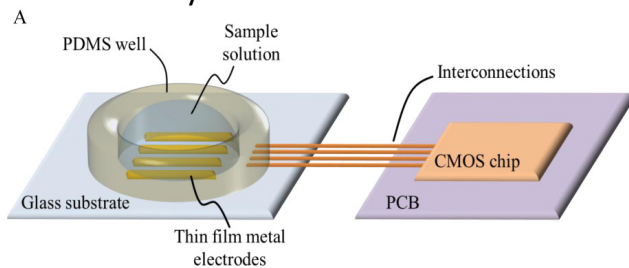
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## Introduction

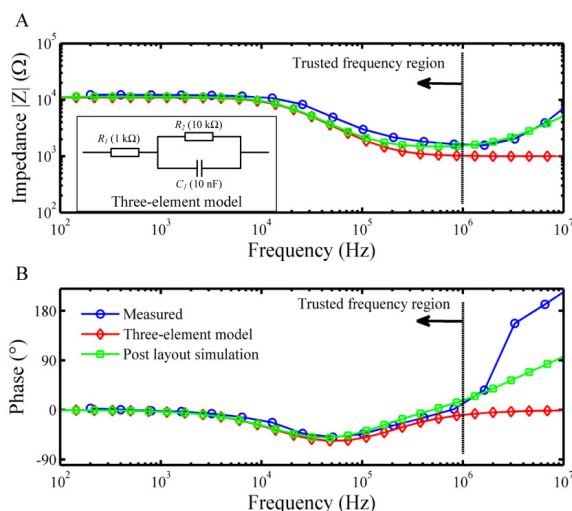
- An integrated impedance measuring system with disposable electrodes.
- Reusable CMOS chip for data retrieval from remote controlled thin-film electrodes.

## Results and Discussions

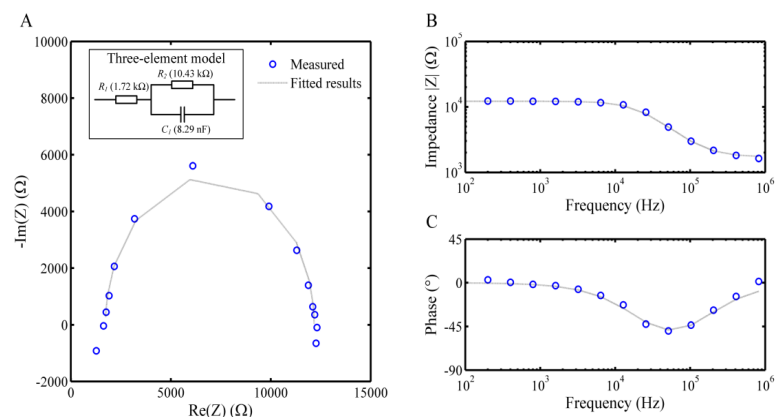
- Schematic of the integrated impedance measurement system.



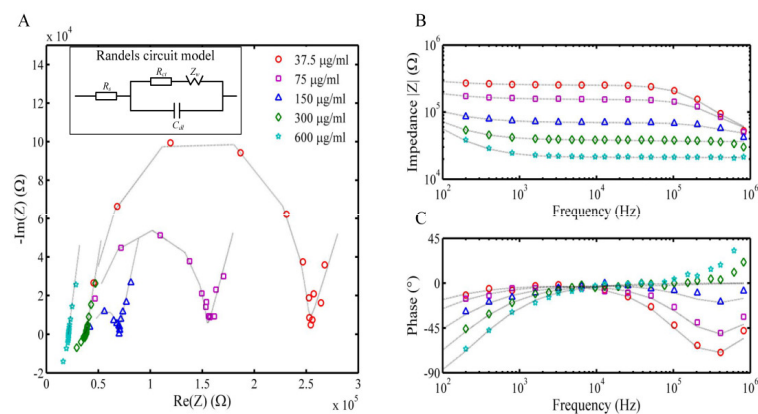
- Simulation and measured results of the system validation test.



- Measured and fitted results of the three-element circuit indicated in the subplot.



- Cole-Cole and Bode plots for measurement of DNA concentration.



## Conclusion

- The system keeps the CMOS processor reusable in order to reduce the measurement cost.
- The setup also provides additional freedom on electrodes design.

**Related Publication:** • Hanbin Ma *et al.*, *Sensors and Actuators B:Chemical* 211, 77-82 (2015).

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