



# Development of Adapter Board and a Smart Phone App for the Microneedle Based Non-Enzymatic Glucose Sensor

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## Technical barriers/problems:

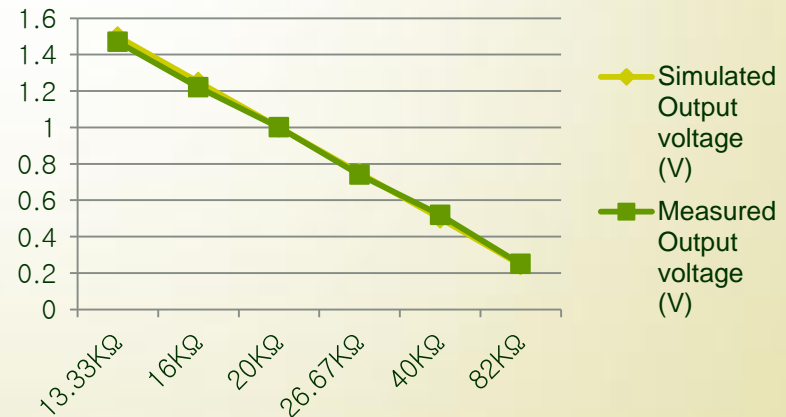
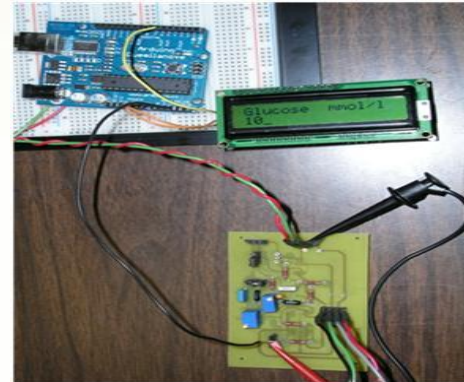
- High accuracy and high linearity needs to be achieve in glucose sensing circuit

## Objectives for IMSE:

- Develop a highly linear and accurate amperometric circuit for glucose sensing

## Accomplishments:

- The transimpedance-type amperometric circuit has been tested successfully on bread board and PCB respectively.
- The proposed analog correlator based amperometric circuit has been tested successfully on bread board and PCB respectively.





# Low-Power Ultra-Wideband Radio and Radar Sensor Chip

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### Technical barriers/problems:

- For asset tracking or ranging geological features, low power consumption, high accuracy and resolution, compactness, operation in extreme environments, and continuous operation are required.

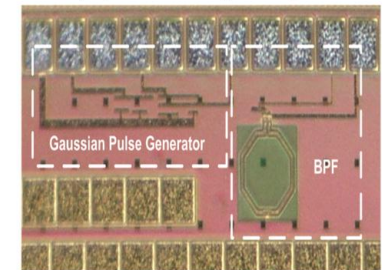
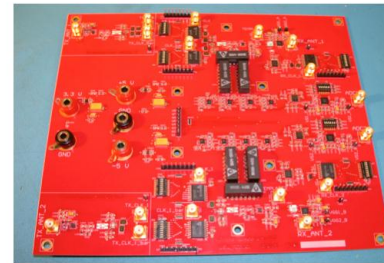
### Objectives for IMSE:

- Develop a low-power and highly accurate impulse-type radar sensor.

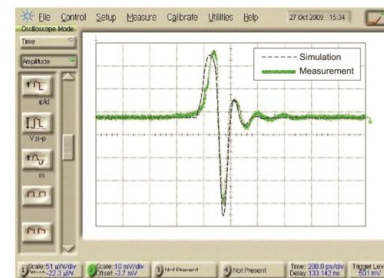
### Accomplishments:

- The impulse-type radar sensor system has been designed and implemented in printed circuit board.
- The key component in the radar sensor has been designed

PCB Prototype for the radar sensor    Microchip photo of impulse generator



Transient response of impulse generator



Frequency response of impulse generator

