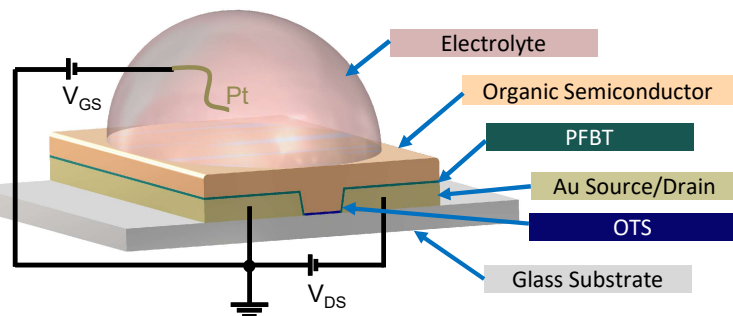
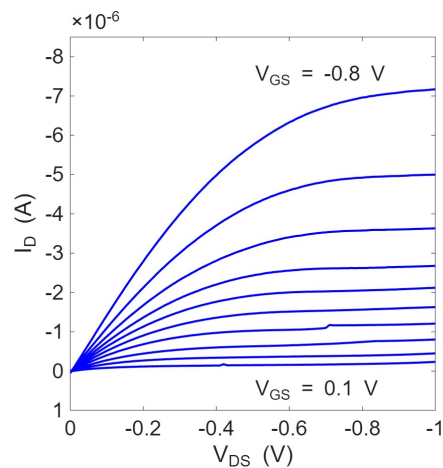


# Sensing Cardiomyocytes on Electrolyte-Gated Organic Field-Effect Transistors

(a)



(b)



**Figure:** (a) Schematic illustration of the EGOFET (b) Electrolyte-gated transistor output characteristics.

## Objective

► To precisely measure the electrical activity of cardiomyocytes by placing them directly onto organic thin-film transistors

## Impact

With an applied voltage, ions in an electrolyte form an electrical double layer at organic semiconductor interface. Electrolytes can therefore be used as gates for organic thin film transistors (OTFTs). OTFTs are precise sensors, as small changes in the gate voltage correspond to large changes in the drain current. By placing cardiomyocytes on OTFT arrays, we measure the electrical activity of in vitro cardiac tissue.

## Facilities and Methods Used

- Ebeam and thermal evaporation chambers
- Lurie Nanofabrication Facility for lithography and imaging
- Frankel Cardiovascular Center for work with cardiomyocytes

## Relevant Papers

- Horowitz, et al., Langmuir, DOI: 10.1021/acs.langmuir.0c03319
- Horowitz et al., ACS Applied Materials & Interfaces, DOI:10.1021/acsami.5c22805

## Funding

- Universal Display Corporation

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