

Biochips

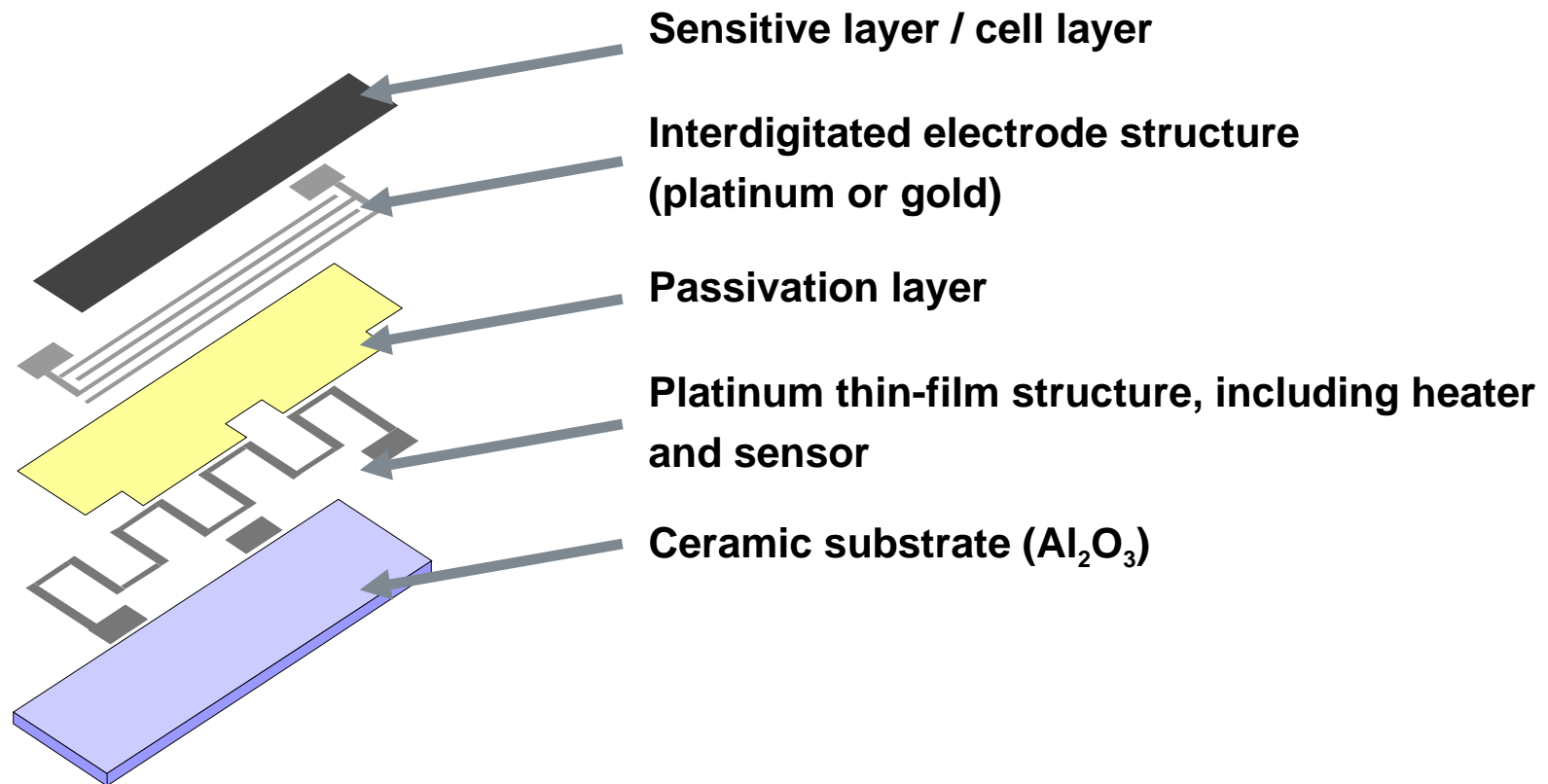
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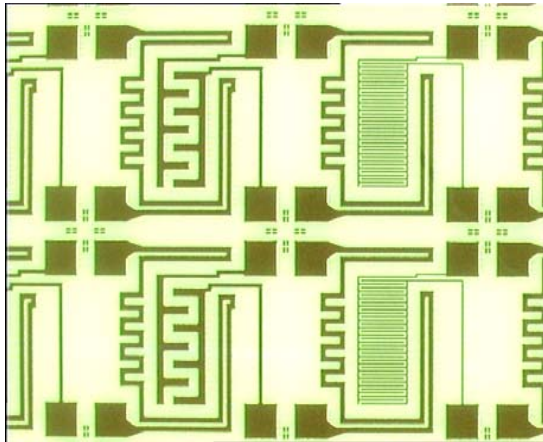
The Multi-Sensor Platform Design



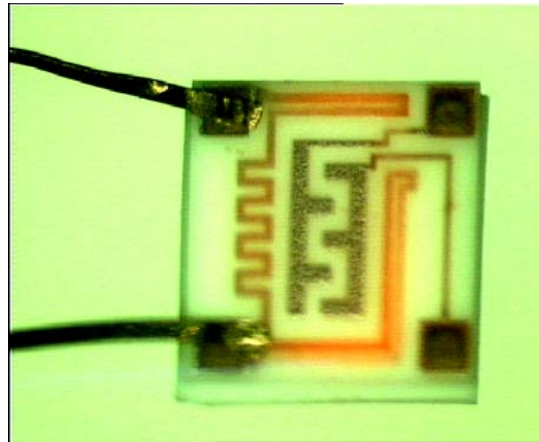
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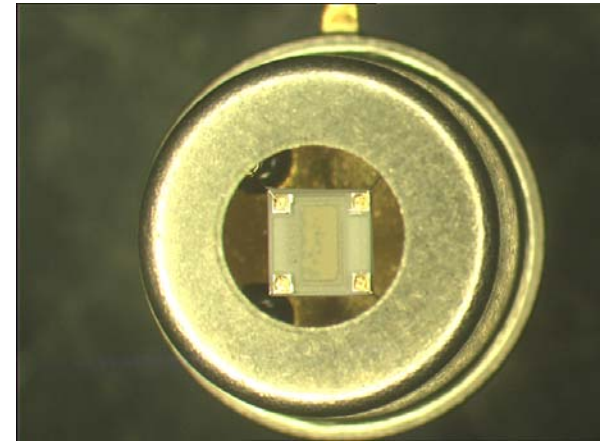
Customized Sensor Design



Interdigitated electrode structures



Heater



Housed sensor

Technical Opportunities at HST

— Substrates

- Ceramics
- Glass
- Metals
- Others

— Electrical Connections

- Leadwire
- Leadframe
- FC
- SMD

— Thinfilm Layers

- Pt
- Al₂O₃
- Others

— Thickfilm Layers

- Pt
- Au
- AgPd
- AgPt
- Dielectrics
- Others

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Life Science Applications via Pt Thin-Film Technology I

- **Temperature sensors and heaters based on Pt thin-film**
 - **PCR-on-chip, fast and efficient amplification of nucleic acids compared to conventional PCR**
 - **Mass-flow measurement via combination of heaters and Sensors miniaturized on lab-on-chip systems**
 - **Microcalorimetry**

Life Science Applications via Pt Thin-Film Technology II

- **Electrodes based on Pt thin-film**
 - **DNA or protein chip with electronic detection (bioelectronic chip)**
 - **Separation / transport of biomolecules via electrophoresis**
 - **Measurement of impedance and conductivity, e.g. for the characterization of cell adhesion and proliferation (pharmascreening, sensitivity testing etc.)**
 - **Electrodes with customized sensitive layer, e.g. humidity sensor or gas sensor**