

OVERVIEW

Synkera Technologies has developed line of inexpensive, disposable microelectrode arrays for electrochemical and materials analysis. Electrode arrays are available in multiple configurations, including interdigitated fingers as bands and dashes. Platinum and gold electrodes are readily available; other materials may be available upon request.

CONCEPT

Synkera's microelectrode arrays offer an affordable option for making a wide range of electrochemical measurements. Interdigitated electrodes, as shown in Figure 1, have been used for the evaluation of the electrical properties of a wide variety of materials, including carbon nanotubes and intrinsically conducting polymers.

Other electrode configurations are available that allow for characterization of materials in solution, such as the use of gold electrodes for arsenic analysis. In this design, it is possible to incorporate both working and auxiliary (counter) electrodes in a single chip. Preliminary development work at Synkera has demonstrated the feasibility of preparing a solid state reference electrode on top of the chip, leading to a miniaturized, all solid state device for electrochemical measurements in solutions.

ELECTRODE FEATURES AND BENEFITS

- Prepared using Synkera's unique multilayer fabrication process for low cost and high reproducibility.
- Standard interdigitated platinum electrodes feature 5 μm fingers with 15 μm gap.
- Rugged ceramic body withstands rough handling and temperatures up to 1000°C.
- Low-cost option for disposable measurements.
- Alternative electrode materials available by special request (lot charge applies).
- Optional connector clip available to simplify electrical connections.

CURRENT STATUS

Interdigitated platinum electrodes are available off the shelf as a standard product. A wide variation of gold and platinum band and dash electrode configurations are available for a nominal lot charge, depending on the complexity of the design. Work on the solid state reference electrode design is ongoing.

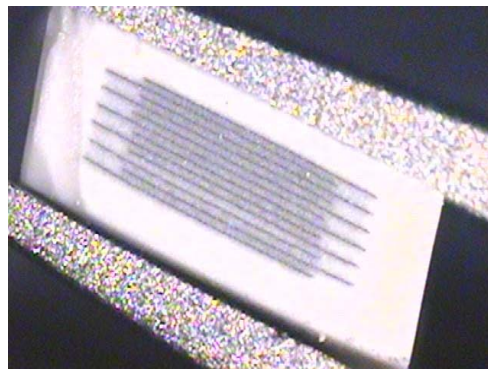


Figure 2: Optical Image of Interdigitated Electrodes

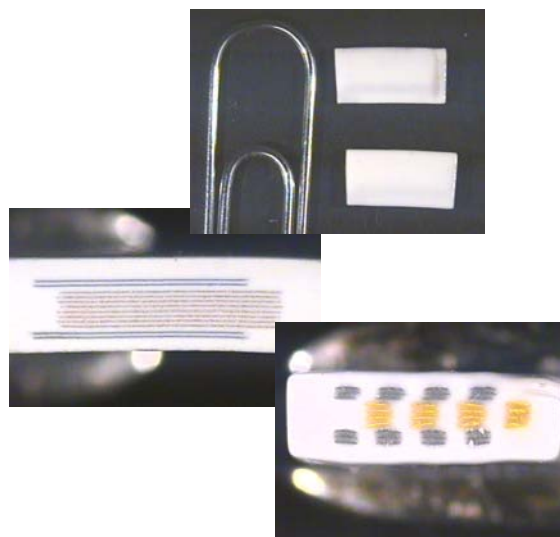


Figure 2: Optical images of band and dash geometries incorporating both gold and platinum materials

PARTNERSHIP DEVELOPMENT

Partnerships are of interest for the continued development and commercialization of ceramic microelectrode arrays. For additional information, or to purchase standard products, please contact:

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