Integrated Graphene IG-GII-SENS-01

1 Description

Figure 1 Integrated Graphene IG-GII-SENS-01

The three-electrode electrochemical cell has a 3D Graphene Foam working electrode, suitable for a wide range of analytical applications. Each piece comprises a 3D Graphene Foam circular working electrode (4 mm diameter), a Ag/AgCl pseudo reference electrode, and a 3D Graphene Foam counter electrode. The small electrode dimensions reduce the required sample volumes and the low costs permit disposable use.

Each box of IG-GII-SENS-01contains 50 pieces.

Samples can be applied as a droplet due to the design of the electrodes. This avoids the waste of reagents and samples. The electrodes can be modified through direct adsorption, chemical binding, etc., and a wide range of biomolecules can be linked to the electrode surface. These customizations make the 3D Graphene Foam electrodes suitable for a broad spectrum of applications. Integrated Graphene offers also to modify the surface for you.
Furthermore, They exhibit enhanced electrochemical performance when compared to other carbon-based electrode materials.

1.1 Application Advice

The electrodes are printed on a thin substrate (around 50 µm). Our connectors (order codes starting with PS-CONN) can handle these electrodes, however this is on the edge of what they can handle. For an optimal user experience we recommend the using the adaptor from Integrated Graphene (IG-CONN-2MM).

2 Technical Specifications

Dimensions: 10.8 x 31 mm
Working electrode dimensions: 12.57 mm²
Substrate: Polyimide
Thickness: 50 µm
Contact pad pitch: 2.54 mm
Coefficient of Variation (CV) (n = 5): 4 %

3 Measurements

3.1 Cyclic Voltammogram

All measurements were performed with a droplet of solution covering all three electrodes of the cell. The solution contained 2.5 mM $K_3[Fe(CN)_6]$, 2.5 mM $K_4[Fe(CN)_6]$, and 0.1 M KCl.

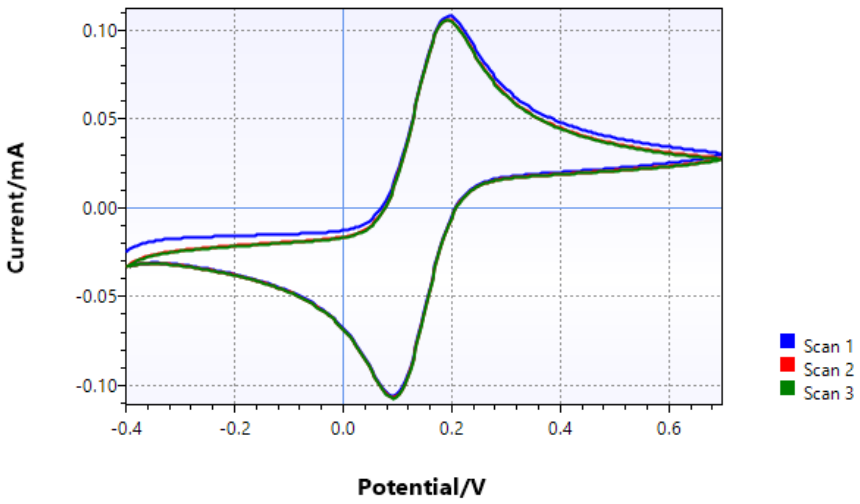

Figure 2 CV, IG-GII-SENS-01, E step 5 mV

3.2 Electrochemical Impedance Spectroscopy

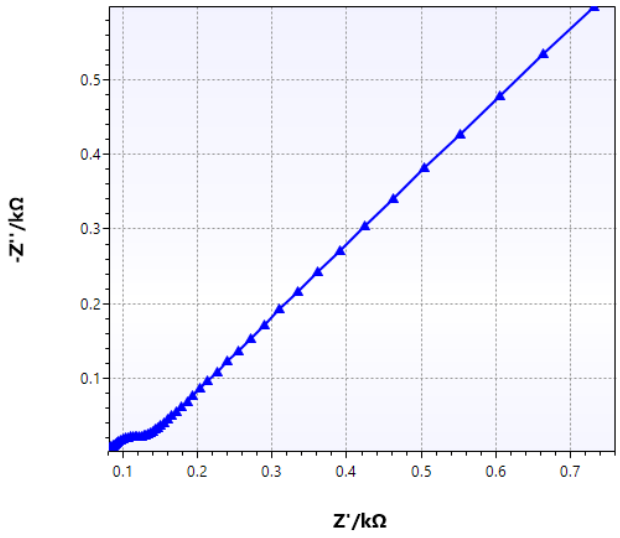

Figure 3 EIS, IG-GII-SENS-01, E dc OCP, E ac 10 mV, frequency range 0.1 Hz to 1 MHz