

Answer on Question #77822 - Chemistry - Other

Question:

How to electrodeposite graphen oxid on copper wire

Solution:

To improve the electrochemical characteristics of solid-state printing electrodes, a reduced graphene oxide is used as the intermediate layer (mediator) between the surface of the current collector and the layer of the electrode-active substance. A graphene oxide film was applied to the surface of the printed electrodes by dropping, followed by reduction and electrochemical deposition. The electrode-active component was ionic liquid-1,3-di-hexadecylimidazolium bromide. The effect of reduced graphene oxide on the characteristics of the ion-selective electrode was studied and it was shown that the sensors, modified with electrochemically reduced graphene oxide, have the best characteristics.

Electrochemical disintegrated graphene oxide (GO) 6 is used because it is readily dispersed in an electrolyte in the presence of oxygen functional groups, as confirmed by the FTIR (Figure S2 Information Support). The advantage of electrochemical detachment is that it minimizes the damage to GO sheet⁶ during detachment, in contrast to rigid chemical methods. To obtain the Cu-Gr Composite foil, the concentration of GO in the electrolyte ranged from 0.1 to 1.0 g / l. GOK concentration of 0.5 g / l in the electrolyte led to the receipt of foil Cu-Gr with the best mechanical properties of the composite. Subsequently, these foils were burnt in an argon atmosphere at 300 ° C. for 30 minutes to reduce GO to Gg. It is also probable that the GO in the Cu matrix may partially decrease to Gr during electrodeposition due to the application of large cathode impulses during the deposition process.