

## **Electronic Supporting Information**

### **Introducing Dichlorocarbene in Graphene**

Chun Kiang Chua, Adriano Ambrosi, Martin Pumera\*

*Division of Chemistry & Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore.*

*\*Corresponding author*

*Prof Martin Pumera, Division of Chemistry & Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore. Fax:(+65) 6791-1961; . E-mail: [pumera@ntu.edu.sg](mailto:pumera@ntu.edu.sg)*

#### **Experimental Procedures**

Graphene was obtained from the graphite, which was oxidised based on the Staudenmaier's method, and further reduced using hydrazine to give the starting material graphene.

#### **Functionalization procedure**

Graphene (20 mg) and triethylbenzylammonium chloride (phase transfer catalyst, PTC, 20 mg) were mixed in a water (15 mL) and chloroform (20 mL). The mixture was sonicated for 4 hr before the addition of NaOH (20 g) and chloroform (20 mL). After vigorous stirring for 24 hr, PTC (20 mg), NaOH (20 g in 15 mL water), and chloroform (20 mL) were added into the mixture and left to stir for 24 hr under reflux. The mixture was brought to room temperature and further diluted with water (500 mL). The filtered solid was washed with copious amount of acetone and ethanol. This was followed by rinsing with hexane and subsequently with chloroform, ethanol, water, ethanol and water. The final product was left to dry at 70 °C in the oven for 5 days.

#### **Control Experiment**

The control experiment was carried out similar to the procedure above but without the addition of triethylbenzylammonium chloride and NaOH.