Technical Data Sheet

ACS Material 2D Porous Graphene

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1. Overview

Porous Graphene (PG), also called Graphene Nanomesh (GNM), refers to a collection of graphene materials with nanopores on a two-dimensional (2D) plane. PG retains the incredible properties of graphene, such as high conductivity and high surface area, yet its pores make its transportation efficiency and chemical activity higher than graphene. In addition, Porous Graphene can be regarded as a semiconductor for its band gap opening, which is conducive to its research in the field of electronics, such as field effect transistors.
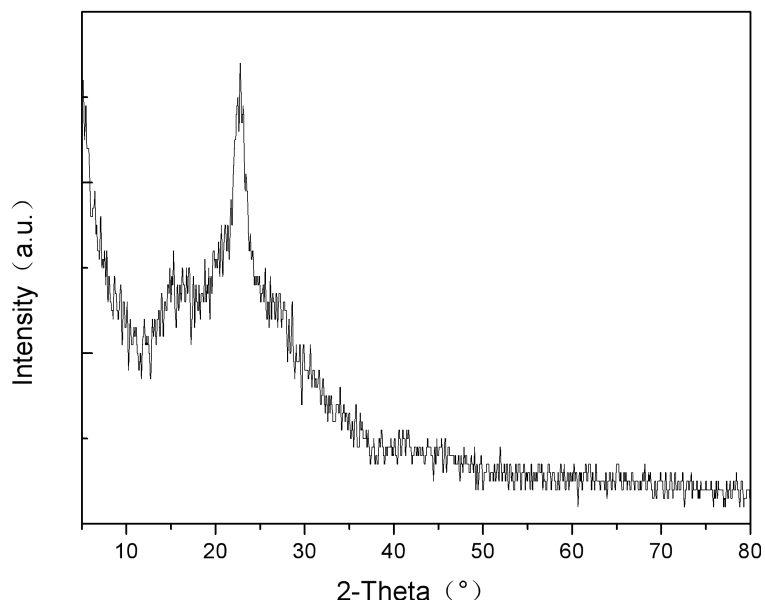
2. Preparation Method

Combustion synthesis method

3. Characterizations

Type	Black powder
Flake Diameter	0.5 -5 um (TEM)
BET Surface Area	~894 m2/g (BET)
Pore Diameter	~4.58 nm (BET)
Purity	~99 % (EDS)
C/O Atomic Ratio	~10:1 (EDS)
Thickness	3.2 nm-4.2 nm (AFM)
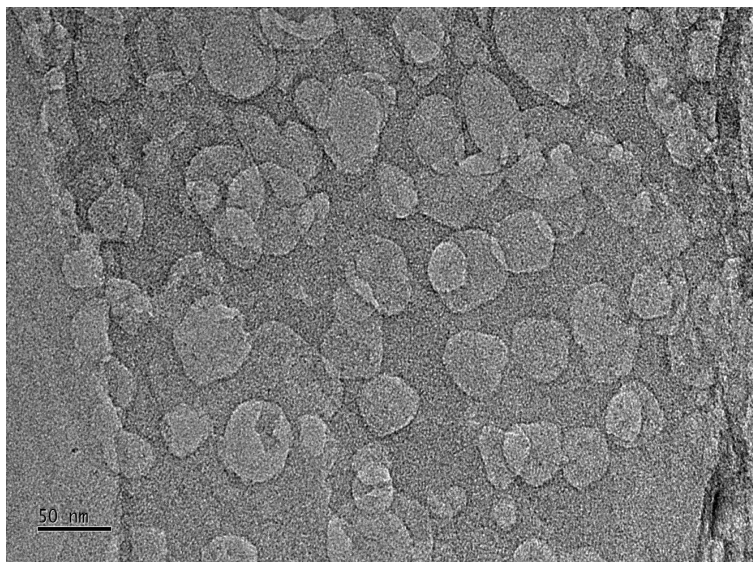
Typical TEM Image of ACS Material 2D Porous Graphene

XRD Pattern of ACS Material 2D Porous Graphene

4. Applications

- Lithium ion battery - as high conductive components in battery slurry
- Supercapacitors - conductive reagents of the supercapacitor electrodes
- Gas separation/storage
- Electronic and optical devices
- Membrane separation
- Solar cell
- Catalyst
- Sensors

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