

Technical Specifications of Graphene Oxide

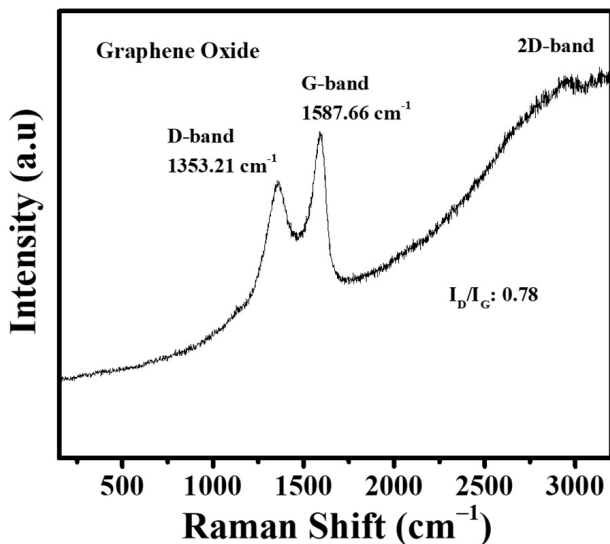
Technical Data Sheet

Issue date: Feb 20, 2025

General Description

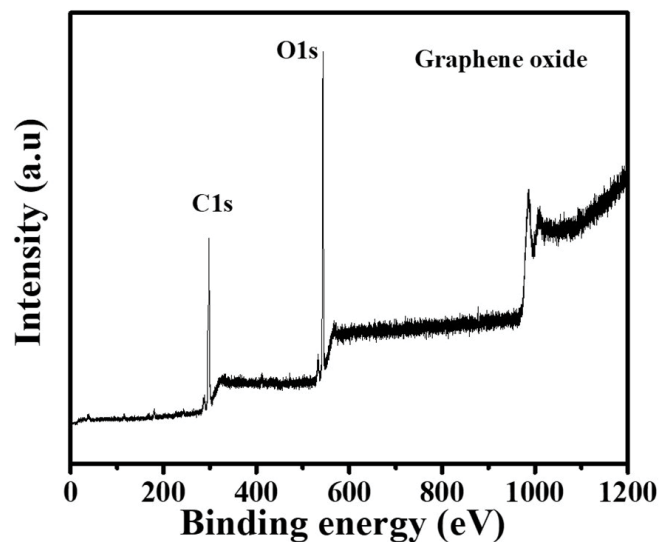
Product Name	:	Graphene Oxide Powder
Product Number	:	Gr-0002
CAS Number	:	1034343-98-0
Category	:	Nanomaterials
Preparation method	:	Multi-step oxidative exfoliation
Physical form	:	Fluffy, very light powder
Chemical formula	:	C, O
Chemical composition	:	Carbon and Oxygen
Solubility	:	Highly soluble in water

Raman Spectroscopic Analysis

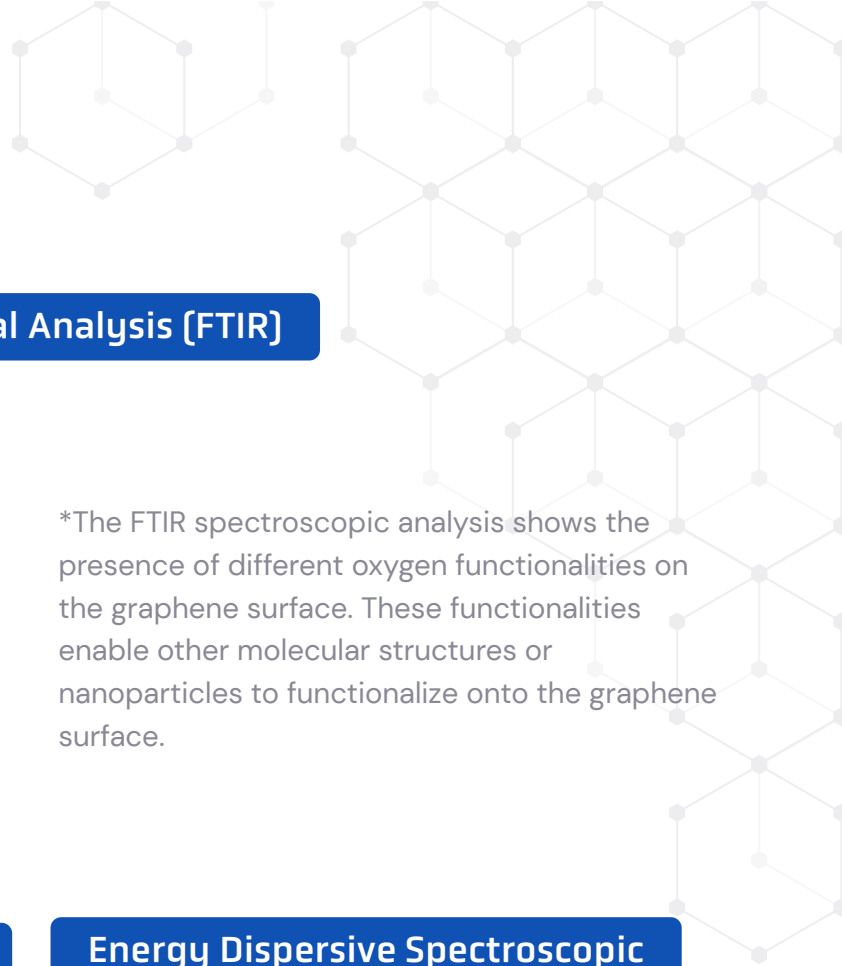


*Higher value of I_D/I_G signifies the presence of defects on both the basal and lateral plane of graphene oxide. These are developed during the oxidative exfoliation.

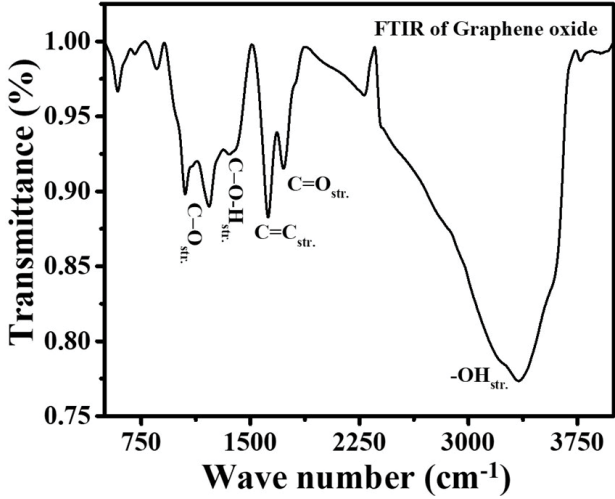
X-Ray Photoelectron Spectroscopic Analysis (XPS)



*The presence of two spectrum at ~284 eV (Binding energy) and 530 eV signifies the presence of both the carbon and oxygen in the graphene oxide. Here the stoichiometric ration of carbon to oxygen (C:O) is 1:1.3.

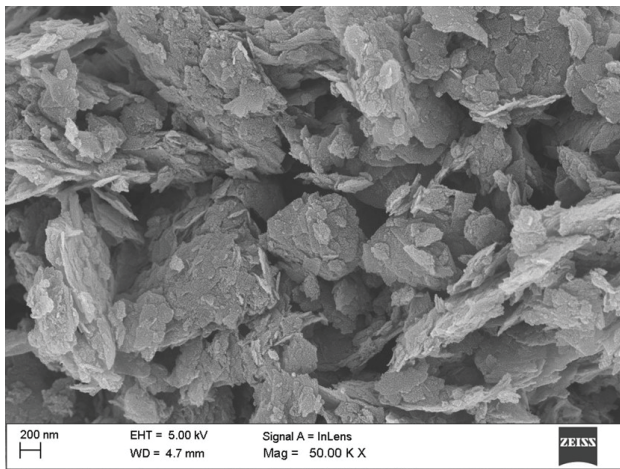


Fourier Transform Infrared Spectral Analysis (FTIR)

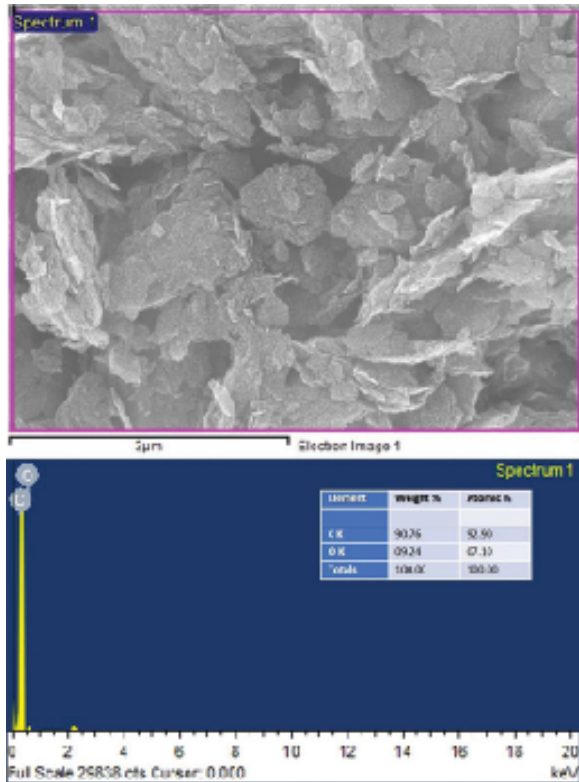


*The FTIR spectroscopic analysis shows the presence of different oxygen functionalities on the graphene surface. These functionalities enable other molecular structures or nanoparticles to functionalize onto the graphene surface.

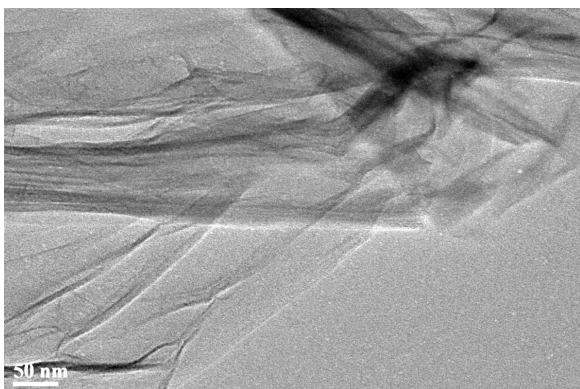
Field Emission Scanning Electron Microscope (FESEM)



Energy Dispersive Spectroscopic Analysis (EDS)

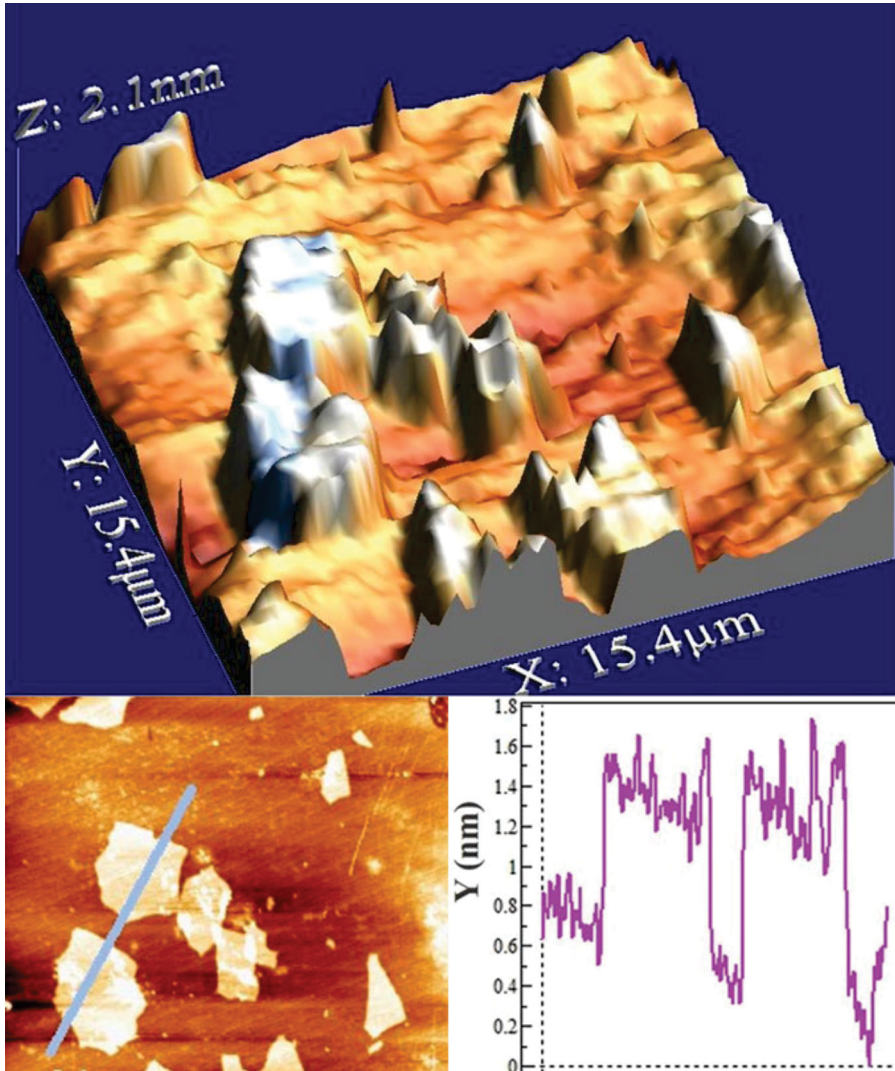


Transmission Electron Microscopic Analysis (TEM)





Atomic Force Microscopic Analysis (AFM)



*The topographic analysis shows that the average thickness of the graphene oxide is ~1.2 nm that clearly supports the presence of 3-4 number of single layered graphene.

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