Structure control of graphene oxide

Graphene Oxide
• Water soluble
• Single layer
• Oxygen functionality
• High surface area
• Mechanically strong

Graphene Oxide

intercalation

Layer control of graphene oxide

Using different synthesis conditions, oxidative graphene can be synthesized.

Oxidation

Reduction

Metallic complex formation

Metallic nanoparticles are formed on oxidized graphene, and can be used for functional materials.

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Size Control

Interlayer Distance
Interlayer distance can be controlled by adding surfactants or organic functionalization of graphene oxide surface.

100 nm = 50 μm graphene oxide can be prepared by changing the oxidation conditions and nature of graphite.

Oxidation Degree
Oxygen content can be controlled by changing the oxidation conditions of graphite or reduction conditions of graphene oxide.

Metal Composites
Metal nanoparticles can be deposited on graphene oxide and used as catalyst and electrodes.