



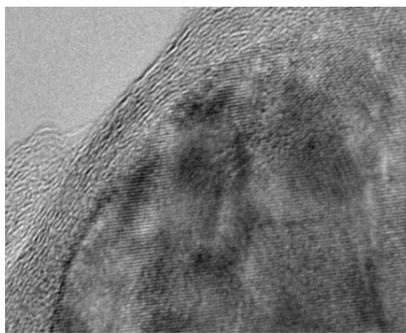
XG SiG™ Energy Storage Materials

Silicon-graphene Li-ion battery anode

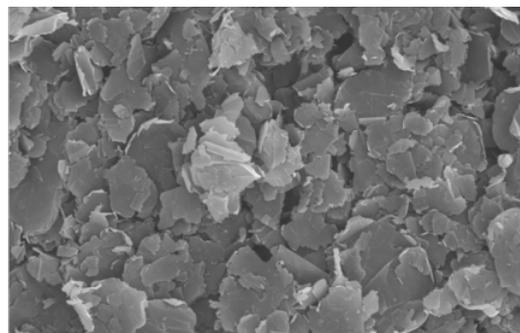
High Energy Anode – XG Sciences’ **XG SiG™** delivers high specific capacity in an **xGnP®** graphene-stabilized silicon anode material for enhanced run-time in drone aircraft, portable electronics and other high density energy storage applications. Our proprietary manufacturing process creates a silicon-graphene composite featuring highly-conductive, flexible graphene platelets, establishing a network that reduces silicon-electrolyte reactions, provides robust mechanical support and improves high rate capacity.

General characteristics:

- **Composition** – Silicon graphene
- **Morphology** – Porous aggregates
- **High reversible capacity**
- **Efficient Li+ storage**
- **Enhanced life cycle**



SiG™ Li-ion battery anode



xGnP® Graphene Nanoplatelets

xGnP® Graphene Nanoplatelets

Conductive additive

xGnP® Graphene Nanoplatelets are short stacks of graphene sheets in a platelet shape. Typical platelet electrical conductivity parallel to the surface is 10^7 S/m.

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AN-S Si-graphene anode properties

Reversible capacity	500-2000 mAh/g
1 st cycle efficiency	85-90%
Charge/discharge rate	To 5C
Recommended binders	Polyacrylic acid (PAA), Carboxyl methyl cellulose (CMC)/ Styrene-Butadiene Rubber (SBR)

xGnP® Graphene bulk properties

Appearance	Black granules
Bulk density	0.1 g/cc
Loss on Ignition (LOI)	> 99.5%
Oxygen content	< 1%

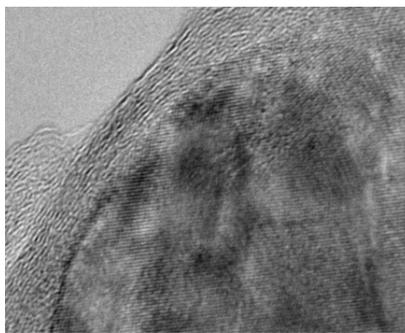
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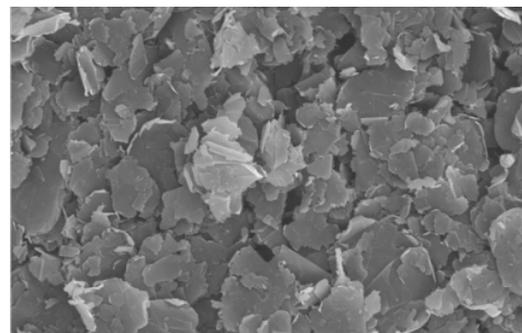
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