HEXAGON resources limited
High Purity Flake Graphite for New Technologies

ASX ANNOUNCEMENT

3 May 2016

OUTSTANDING GRAPHENE AND GRAPHITE BULK SCALE RESULTS

HIGHLIGHTS – *Leading Australian University test work results from McIntosh bulk scale representative sample has produced:*

Graphene:

- **Graphene produced from Hexagon's ultra-high purity graphite (+99.9%TC) was successfully demonstrated using all three exfoliation methods**
- **High yield of graphene from graphite at approximately >90%**
- **High quality graphene with single to a few layers from Hexagon's graphite samples is confirmed by Raman, TEM and TGA analysis**
- **Graphene produced via several methods including a 'green method' without the use of hazardous chemicals**
- **Graphene produced from Hexagon's high-purity graphite samples have comparable quality to graphene currently available on the market**
- **These graphene test work results will be sent to currently engaged commercial graphene groups**

Graphite:

- **Elemental composition after combustion of Hexagon's bulk scale flake graphite sample confirms ultra-high purity material grading +99.9 %TC**
- **X-Ray Diffraction (XRD) has confirmed that the carbon in the representative bulk scale graphite concentrate is crystalline with no amorphous material**
- **Results from this study indicate that Hexagon's ultra-high purity graphite has the potential to be used for large scale graphene production**

"The McIntosh project continues to deliver. These outstanding graphene test work results add another dimension to the project with the potential to also produce high value graphene. Whilst the graphene sector is in its infancy the potential uses and upside is enormous. The key driver will be the capacity to produce commercial quantities of graphene. These exceptional test work results achieved from a bulk scale representative sample from McIntosh gives Hexagon that capacity" **commented Tony Cormack, Hexagon's CEO / Head of Operations.**

PRODUCTION OF GRAPHENE

Physical and microscopic examination of the representative, bulk scale graphite concentrate based on conductive and gravimetric tests confirm a highly concentrated flake graphite concentrate.

Preparation of both graphene oxide (GO) and graphene from the Hexagon graphite samples was successfully demonstrated using three exfoliation methods:

- **Liquid exfoliation based on acid chemical oxidation with a GO reduction step**
- **Direct thermal / mechanical exfoliation**
- **Electrochemical exfoliation (both without the need for intermediary GO steps)**

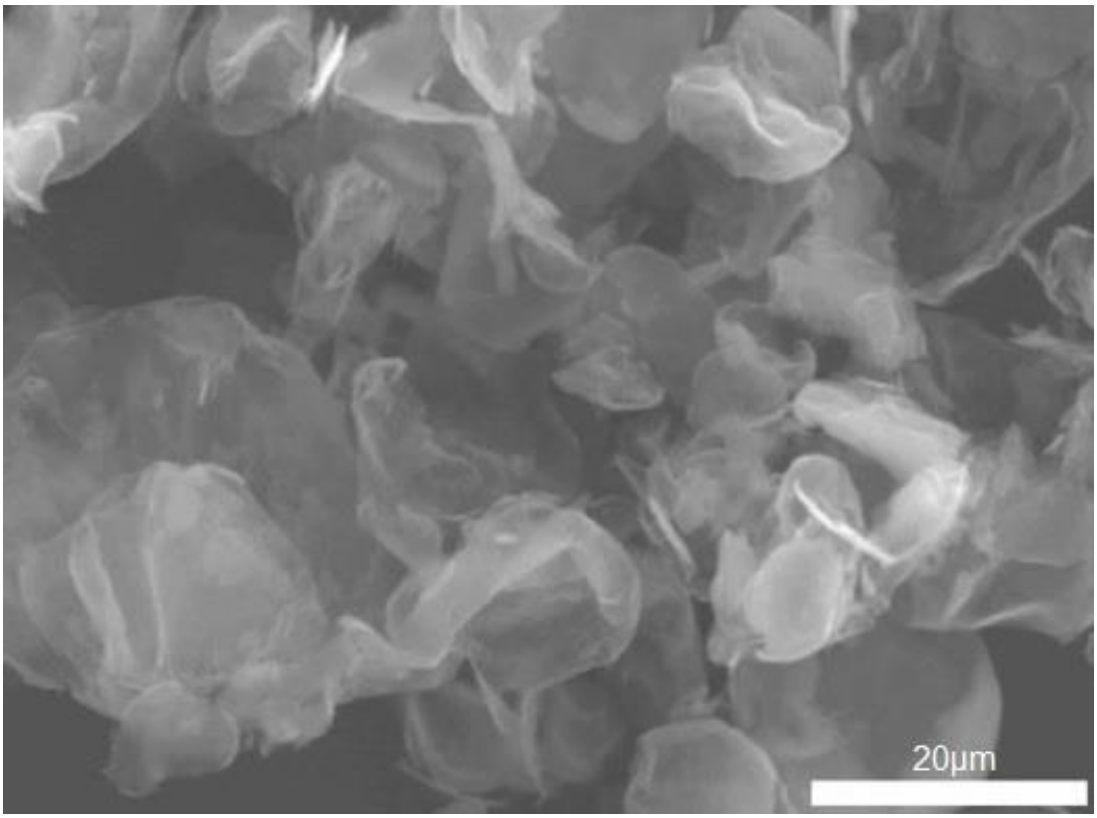

Figure 1: Scanning Electroscope Microscopy (SEM) image showing the typical morphology of dispersed graphene prepared from Hexagon's graphite

PREPARATION OF GRAPHENE USING A ‘GREEN METHOD’

To confirm the preparation of reduced graphene from Hexagon’s graphite, a ‘green method’ for the reduction of GO based on non-hazardous amino acids for the replacement of hazardous hydrazine hydrate was used. This method offers the potential to be used for scalable and environmentally friendly production of reduced graphene and avoids the use of any toxic materials.

This method was applied in performing the services and showed similar results but greater reduction efficiency (~10x) when compared with the common hydrazine method. Characterization results of the reduced graphene oxide (rGO) produced in the reduction process from GO from Hexagon ultra-high purity graphite using amino acids are shown in Figure 2.

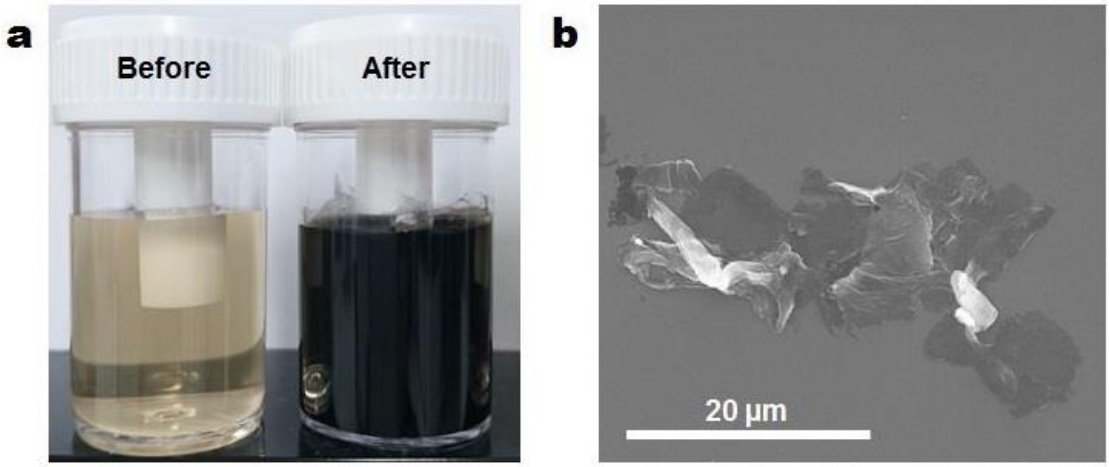

Figure 2: (a) Digital photographs of produced GO from Hexagon graphite before and after the reduction and graphene conversion process (b) SEM image of produced reduced graphene oxide (rGO) sheets

Figure 2(a) shows the change in the solution colour from a light brown (GO solution) to black (rGO solution) after the reduction process confirmed successful transformation. The conversion yield is not measured as it is based on the initial material, but approximately > 90 % of carbon is converted to graphene (rGO). Figure 2(b) shows a scanning electron microscope image of the reduced graphene oxide sheets produced.

CHARACTERISATION AND GRAPHENE EXFOLIATION METHODS

Results from this study indicate that Hexagon's graphite has potential to be used for the increased scale of graphene production. Typically, the greater the purity of graphite, the more efficient graphene isolation and yield will be.

Raman spectroscopy is recognised as the most powerful and accurate method used to infer the graphene quality. The properties of obtained graphene were assessed based on the shape and shift of the 2D bands compared with graphite used as a control. These parameters were used to indicate thickness of graphene and graphene electrical properties relevant for applications, where high quality graphene is required, such as supercapacitors, sensors or batteries. Figure 3 shows the Raman graphs of graphene and GO prepared by all three methods confirming the quality and integrity of its structure extracted from Hexagon's graphite.

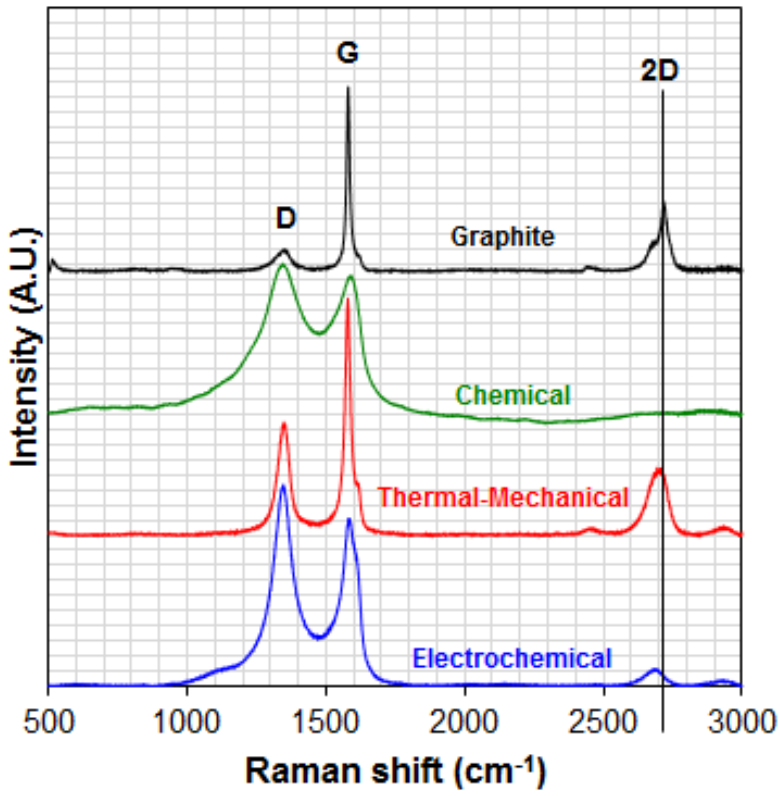

Figure 3. Comparative Raman graphs of graphene prepared by the three methods confirming the quality and integrity of its structure extracted from Hexagon graphite

Further information:

Tony Cormack
CEO / Head of Operations
tonyc@hexagonresources.com
0427 349 451

Ken Banks
Investor Relations
kenb@hexagonresources.com
0402 079 999

Competent Persons Statement

The information in this report relating Exploration Target Estimates, Exploration Drilling, Assay Results and Geological Data at the McIntosh Project is based on information previously compiled and / or reviewed by Mr. Tony Cormack, Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Hexagon Resources Limited. Mr. Cormack has sufficient experience which is relevant to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Cormack consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.