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Lanka Graphite and Taiwan University collaboration develops low cost breakthrough in graphene production

Highlights:

- **Breakthrough technique developed for graphene production**
- **High grade vein graphite from Lanka suitable for graphene**
- **Two IP patents lodged on new graphene production method**

Lanka Graphite Limited (ASX: LGR) (the **Company**) is pleased to announce that the Material Collaboration Agreement previously signed with the National Taiwan University of Science and Technology (**NTUST**) has produced highly encouraging results in recent graphene production via a new technique called Liquid Phase Exfoliation (LPE). High grade vein graphite samples supplied from Lanka's exploration tenements in EL/267 (Matugama) have proven highly suitable for the research undertaken at NTUST for a low cost, high yield production technique which has potential to lead to mass production of graphene.

As part of the agreement with NTUST, Lanka has supplied high grade vein graphite from its exploration tenements in EL/267 (Matugama) to Professor Wei-Hung Chiang of the NTUST Department of Chemical Engineering who is leading the research project.

Professor Chiang commented, "High quality and high purity vein graphite was a key element in producing high quality graphene during the research study. Compared to conventional methods which are time consuming and have relatively low yield, Liquid Phase Exfoliation (LPE) is a low production cost method providing a much higher yield."

"The results using the LPE technique on the supplied graphite have been consistent and reproducible."

The graphene produced via the LPE technique was found to be of the stringent quality required for applications in thermal management, electrical devices, energy storage and conversion, battery electrodes, bio-chip and bio-sensing.

Lanka Graphite's Managing Director, Emily Lee commented: "We are very pleased to be able to announce that our collaboration with NTUST has already produced such significant results. The highly regarded and credentialed Professor Chiang and his team at NTUST are at the cutting edge of graphene development and Lanka Graphite has potential, from its graphite project in Sri Lanka, to supply the high-grade graphite product required."

"Graphene is a game-changing product due to its technical applications in science, health, energy, and materials and we believe these results support Lanka Graphite's long term strategy to be a key player in Asian high-value end graphite markets." Ms Lee said.

As a consequence of the research study undertaken, two IP patents have been lodged for the Liquid Phase Exfoliation technique of graphene production. Lanka Graphite, through the Material Collaboration Agreement previously announced in September 2015, will be party to the IP and commercial rights to the IP for any future application, on successful patents being issued.

Under the terms of the Material Collaboration Agreement, NTUST research will focus on best commercial uses for graphene for existing high-value end user markets and NTUST will conduct on-going research and development of the process of deriving graphene from the high grade vein graphite supplied by Lanka Graphite. The Company has also secured the future rights to commercialise the research intellectual property following completion of the research project.

About National Taiwan University of Science and Technology (NTUST)

NTUST is a public/national technological university located in Taipei, Taiwan. Established in 1974, as the first and the leading higher education institution of its kind within Taiwan's technical and vocational education system. The university is ranked 353 among world universities in the Times Higher Education-QS World University Rankings 2013. The university is also ranked 52 among Asian universities in the Times Higher Education-QS World University Rankings 2013. NTUST Taiwan was also ranked as Asia's 10th best institute in science and technology

Prof Chiang Profile & Graphene Research Expertise

Professor Chiang is the Assistant Professor of the Department of Chemical Engineering at the National Taiwan University of Science and Technology. His research specialty areas are plasma processing, catalytic reaction, and nanomaterials science and technology. His work has been recognised by scientific publications in high impact journals such as Nature Materials, ACS NANO, and Advance Materials, by mainstream media such as Forbes Magazine and ScienceDaily, and by international conferences (Materials Research Society, and American Institute of Chemical Engineers).

Graphene

Derived from very high purity graphite as a 2D sheet of pure sp^2 -bonding carbon atoms, one atomic-scale layer thick, has exceptional mechanical, electrical, thermal and chemical properties. Early research shows that the one-atom thick Graphene is one of the strongest and most electrical conductive materials explored in the world with a wide range of industrial applications in the fields of electronics, energy, medical, aerospace and various technology.

About Lanka Graphite

Lanka Graphite Limited (ASX: LGR) is an ASX listed graphite exploration company that is focused on exploration of a number of historic and new mining tenements in Central and South Western Sri Lanka. Historic mining at a number of the granted tenements produced very high grade 'lump' or vein style graphite with grades >95%C. High purity vein graphite was historically produced from Lanka's tenements at a grade that is also well suited to graphene derivation. Lanka Graphite will commence exploration of its granted tenements with the intention to develop high grade graphite production that can supply nearby Asian end user companies particularly focused on new technology graphene applications.

Patent information

1. US patent application:

Chiang, W. H., et al., *Modified Graphene, Method for Producing a Modified Graphene and Applications Thereof*, Application #: 14964742, (application date: 12/10/2015), **Under review**

2. TW patent application:

Chiang, W. H., et al, *石墨烯製造方法及應用 (Producing method of graphene and applications thereof)*, Application #: 104117560, (application date: 05/29/2015), **Under review**

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