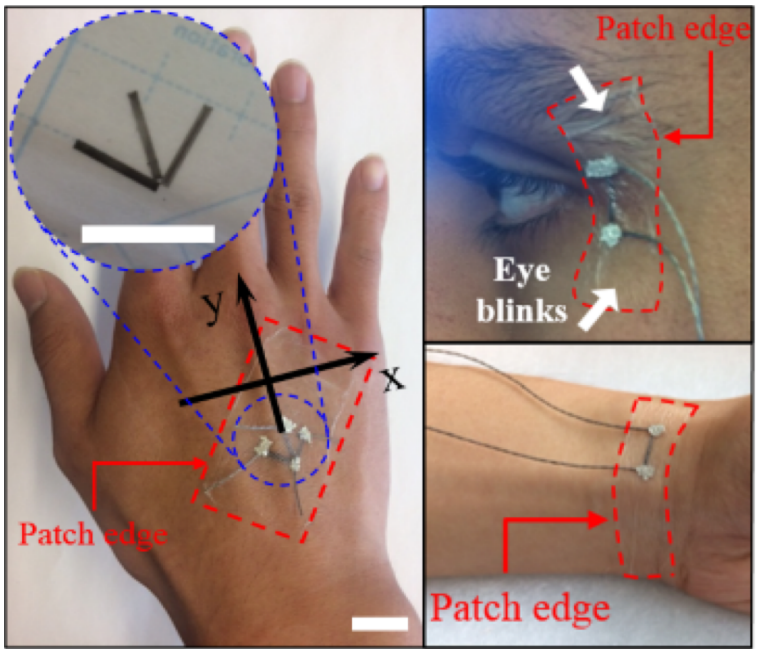
ASX Announcement

6 March 2018

# NTUST Develops Graphene-based Sensors with UCSD using LGR's Vein Graphite

## Highlights

- **NTUST in collaboration with UCSD has developed a Micro-patterned graphene-based sensing skins using Lanka's high grade vein graphite**
- **Graphene based sensing skins used for human physiological monitoring**




Lanka Graphite (ASX: LGR), (the Company) is pleased to report a further milestone achievement in its Material strategic collaboration with National Taiwan University of Science and Technology (NTUST).

High grade vein graphite samples supplied from Lanka's tenements was able to produce an ultrathin, flexible, conformal, and skin-like electronic transducers. The micro-patterned graphene based sensors are a wearable sensing membrane developed by patterning a graphene-based solution onto ultrathin medical tapes, which can then be attached to the skin for monitoring human physiological parameters and physical activity.

Research results have indicated future potential for evaluating athletic performance, physical therapy, and designing next-generation human-machine interfaces. The printed graphene-based sensing skin is highly conformable, flexible, lightweight, nonintrusive, mechanically robust, and is characterized by high strain sensitivity.

**ASX:**LGR

**Shares on Issue**
104,881,313

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Professor Chiang commented, " The high purity and unique chemical properties of vein graphite has enabled the production of high quality graphene used in high end applications in various industries. The skin-like electronic transducers are ultrathin, flexible, and conformal, are emerging as promising candidates for noninvasive and nonintrusive human health monitoring. In this work, we cooperate with Prof. Ken Loh of University of California San Deigo (http://armor.eng.ucsd.edu/) to develop a wearable sensing membrane with high quality graphene prepared by graphite using scalable LPE method. Overall, the printed graphene-based sensing skin is highly conformable, flexible, lightweight, nonintrusive, mechanically robust, and is characterized by high strain sensitivity."

Emily Lee, the Managing Director said, "Lanka Graphite is pleased with the achievement of the Material Sponsorship agreement with NTUST to produce high quality graphene produced via the LPE method and subsequently used to develop AI technology. The successful test results demonstrates that high purity vein graphite is a key component in producing high quality graphene."

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**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.

**Professor Wei-Hung Chiang, NTUST**

Professor Chiang is the Associate 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 Science Daily, 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 sp2 -bonding carbon atoms, one atomic-scale layer think, 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 production of its granted tenements with the intention to develop high grade graphite production that cansupply nearby Asian end user companies particularly focused on new technology graphene applications. Lanka Graphite maintains the largest portfolio of identified high-grade vein graphite Exploration Licenses in Sri Lanka. At many of the EL's vein graphite outcrops at surface or has been historically mined at shallow depths.