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Prof Andrea Ferrari
Electrical Engineering Division
University of Cambridge
9 JJ Thomson Avenue
Cambridge CB3 0FA
United Kingdom

13 May 2013

Letter of support for Capital for Great Technologies

Dear Prof. Ferrari,

I wish to express my strongest support for the application of the University of Cambridge for a suite of facilities aimed at translation from materials discovery and characterisation through to product development. Reducing the time required to bring discoveries to the market is indeed a key driving force behind a more competitive manufacturing sector and economic growth.

AIXTRON is a leading provider of deposition equipment to the semiconductor industry. Our technology solutions are used by a diverse range of customers worldwide to build advanced components for electronic and optoelectronic applications based on compound, silicon, or organic semiconductor materials and more recently, carbon nanostructures, including nanotubes and graphene.

We have a long history of collaboration with Cambridge University over the past 15 years. Cambridge is a world-renowned centre for carbon research, and has excelled over the years in areas covering diamond, diamond-like carbons and more recently graphene, having pioneered most of the engineering areas for this new material. In particular, the Engineering Department has a strong and proven track record in converting top class research into patents, products and spin-off companies. We collaborate closely with the Engineering department for device manufacturing, measurement and film characterization; all of which are necessary in process development for our world-leading BM (Black Magic) line of equipment for carbon nanomaterial deposition. Recently, AIXTRON has introduced two new systems for large area production, the BM Pro and BM 300T. These systems give enormous flexibility in terms of deposition processes, covering CVD, PECVD and high temperature sublimation. The BM 300T is the most technologically advanced platform available today. The ability to deposit graphene with a high degree of controllability and repeatability onto 300mm wafers is an essential step in enabling large wafer-scale integration, and paves the way for exploitation in next generation devices.

We are thrilled to partner with Cambridge, and look forward to the opportunity to access the new suite of cutting edge facilities for advanced materials processing and characterisation enabled by this proposal.

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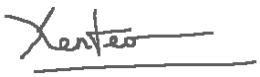
We will contribute to this translational effort on advanced materials by making available our BM (2-inch), BM Pro (4-inch & 6-inch) and BM 300T (300mm wafer scale) systems installed at AIXTRON's clean room in Swavesey, Cambridgeshire, worth in excess of £2M. These systems are always maintained to the top standards, and we will cover the associated running and qualified process engineer costs for running wafers provided by Cambridge University. This is worth up to £100K in kind (projected effort/equipment use max 20 days per year, depending on availability, over the next 2 years).

The access to the proposed state of the art facilities, and the existing world-class expertise in Cambridge, will allow us to optimise our BM systems and produce recipes for high quality graphene, as well as on-demand multi-layers of controlled number of layers. We will also explore the possibility of developing new tools for the large scale growth of the new two dimensional materials, such as BN and MoS_2, now at the centre of an increasing research effort. We are confident that our systems can be modified to grown such new materials and, yet again, only the access to the new facilities, will allow us to pursue this development effectively. We look forward to collaborate with Cambridge on these topics of advanced research.

Thus, I wish you every success in your proposal.

Yours sincerely,



Kenneth Teo
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