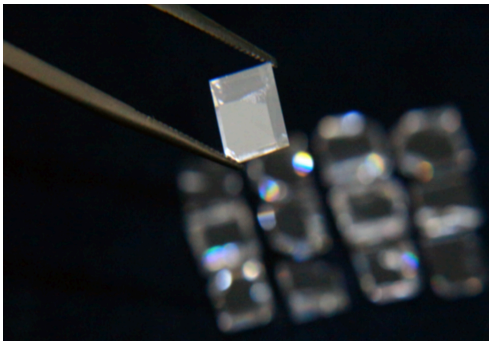
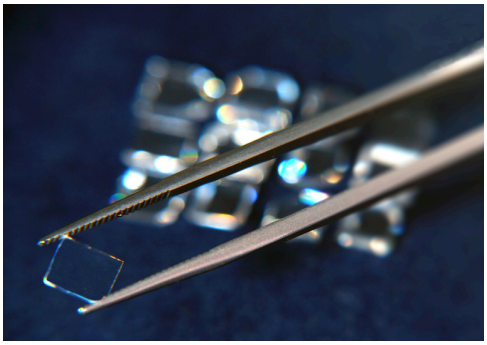
Press Release

IIa Technologies Makes Breakthrough Discovery for Single Crystal Diamond Plates

Attested by major research institutes, IIa's diamond plates are ideal for sophisticated medical and technological applications





Caption: Single Crystal Diamond Plates grown by IIa Technologies.
Please download hi-res images from this link:
https://www.dropbox.com/sh/dcp9xkb7dxssqgz/AACdZhGdbRrgrK22AYO1AFX3a?dl=0

Singapore, 30 September 2014 – Singapore-based IIa Technologies, the industry leader in Grown Diamond technology, today announced that it has achieved a major milestone for its single crystal diamonds grown by the Chemical Vapor Deposition process. A team, led by Professor D S Misra of IIa Technologies, has been able to create large size (7.5 mm x 7.5 mm) high quality, single crystal diamond plates of unsurpassed quality after 8 years of extensive research.

IIa Technologies' diamond plates have electron & hole mobility of 1890 and 2920 cm^2/Vs, while electron & hole lifetimes are of the order 20 and 25 ns respectively. These mobility values are amongst the highest reported so far in single crystal diamonds grown by the Chemical Vapor Deposition process. Higher mobility values indicate higher propensity for electronic applications.

The breakthrough opens up unprecedented opportunities for use in highly versatile applications such as for radiation dosimeters used in cancer therapy, X-Ray detectors, X-Ray dosimeters, high power electronic devices, high voltage rectifiers, ultra high-energy particle detectors and various other sophisticated technological devices. The 100% charge collection at low fields 0.1 V/μm indicates that the plates are almost defect-free (with few defects and dislocations, about one in trillions of atoms). The charge collection distance in the high quality plates is 460 microns with the charge collection efficiency reaching 100% at an electric field of 0.1 V/μm.

These high quality, single crystal diamond plates are expected to break new grounds in radiation detectors due to the simplicity of their design and enhanced lifespan (an increase of about 100-200 times as compared to the conventional material). IIa Technologies' believes that when used in applications like particle accelerators, users would benefit from higher uptime and enhanced detection accuracy.

Speaking about the achievement, **Prof D S Misra, Technical Director of IIa Technologies**, said, "IIa Technologies is synonymous with innovation. Our research team is backed by access to cutting-edge diamond growing technologies, helping us achieve breakthroughs of this caliber. The beauty of our diamond growing processes is that we can grow such high quality diamond plates in a consistent manner, while maintaining all its virtuous properties. This, in turn, makes the IIa diamond plates ideal for global scientific & research communities."

The diamond plates developed by IIa Technologies have been evaluated and qualified by major research institutes and universities across the world. Most recently, certain attributes of the plates' efficiency were presented in the ***International Workshop on Semiconductor Pixel Detectors for Particles and Imaging (PIXEL2014)*** in Canada.

IIa Technologies puts a strong focus on research and its technology-driven production facility in Singapore is the first-of-its-kind, with end-to-end capabilities from growing diamonds to cutting & polishing them. IIa Technologies was founded in Singapore in 2005 to conduct high-technology research due to the country's excellent infrastructure, political stability and easy access to an extremely skilled workforce.

About IIa Technologies Pte Ltd

Established in 2005, Singapore-based IIa Technologies Pte. Ltd. is the industry leader in Grown Diamond technology. Through cutting-edge research and technology, the company grows colourless Type IIa diamonds – the purest type of diamond - through a commercially viable and sustainable process. Applications of the rough diamonds grown by IIa Technologies include the commercial sector for mechanical, manufacturing and aerospace industries as well as in the luxury sector. IIa Technologies is certified for ISO 14001:2004, an Environmental Management Standard and ISO 9001:2008, a Quality Management Standard. For more information: http://2atechnologies.com/

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