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## ASX ANNOUNCEMENT

## DOTZ NANO EXPANDS INTELLECTUAL PROPERTY WITH FILING OF PATENT FOR SYNTHESIS METHODS OF GRAPHENE QUANTUM DOTS WITH NARROW FWHM SPECTRA

- Dotz Nano files provisional patent application with the U.S. Patent and Trademark Office
- Provisional Patent application describes synthesis of GQDs with very narrow Full Width at Half Maximum spectra
- Patent application was filed in preparation for collaborations and commercialisation of GQDs in the display market with compounder companies and potential display OEMs
- Patent application is part of Dotz Nano's strategy to expand its Intellectual Property program

**Dotz Nano Limited ("Dotz Nano" or the "Company")**, a nano-technology company focusing on the development, manufacture and commercialisation of graphene quantum dots (GQDs), is pleased to announce that it filed a provisional patent application with the U.S. Patent and Trademark Office to produce GQDs that have a very narrow Full Width at Half Maximum (FWHM).

**FWHM** is one of the main parameters used in determining the quality of the Quantum Dots when functionalized for use in displays. It is an expression of the extent of a function given by the difference between the two extreme values of the independent variable at which the dependent variable is equal to **half** of its **maximum** value. QD televisions available today have a very narrow FWHM emission spectra, to create separation of colours and thus



higher colour gamut at CIE<sup>1</sup> colour map scale, resulting in sharper colours and images.

Additional parameters in the QDs for the display market are high Quantum Yield, long photo-stability and easy dispersion in specific solvents, all properties that Dotz Nano GQDs possess.

The patented technology application allows Dotz Nano to produce GQDs with very narrow FWHM (less than 30 nm) which makes GQDs comparable to Cadmium quantum dots currently used in quantum dot displays.

The Company is working towards commercialising its GQDs as part of this effort within the display industry.

**Commenting on the patent filing, Dotz Nano's CEO Dr. Moti Gross, stated:** "As always, we are continuously expanding our Intellectual Property to prepare Dotz Nano's entry into various markets,

<sup>&</sup>lt;sup>1</sup> The International Commission on Illumination (abbreviated CIE for its French name) is the international authority on light, illumination, colour and colour spaces)



in this case the display market, based on the testing and validation of our GQDs and the encouraging feedback received from various industry participants."

"Following our announcement last November on achieving a Quantum Yield of over 65%, Dotz Nano has been in contact with many of the display industry participants for discussions, testing and evaluations on the use of our GQDs as an alternative to the use of Cadmium based QDs in displays."

"The QD display market, in my opinion, is one of the most technological advanced markets for use of QDs, and GQDs are the newcomer in the market, but with very high potential. External Market research has shown that the QD display market is approximately AU\$540 million per annum and growing."

"Another important fact is that under the European Restrictions on Hazardous Substances directive<sup>2</sup>, the use of Cadmium will be restricted in electronic equipment. Cadmium and cadmium compounds have been classified as carcinogenic to humans by the International Agency for Research on Cancer. As such, the European Restrictions on Hazardous Substances will ban the use of cadmium in displays by the October 2019<sup>3</sup>. Even if this is extended, in response to manufacturer's lobbying pressure, an alternative to cadmium QDs will be forthcoming which currently to my knowledge, could only be 2 sources, Nanoco's Cadmium Free QDs and Dotz Nano GQDs. In that instance our GQDs, in my opinion may have a tremendous effect on the international Quantum Dot display market".

"Dotz Nano is working closely with first tier and display OEM companies in the evaluation and testing of our GQDs for use in the display market."

"We will continue to notify our shareholders on our commercialization process as material events occur."

## About Dotz Nano

Dotz Nano Limited (ASX: DTZ) is a technology company focusing on the development, manufacture and sale of GQDs. Its vision is to be the premier producer of GQDs by producing and supplying high quality GQDs for use in various applications including medical imaging, sensing, consumer electronics, anti-counterfeiting, energy storage, solar cells and computer storage.

To learn more about Dotz Nano please view the website and our corporate video via the following link: <u>www.dotznano.com</u>

<sup>&</sup>lt;sup>2</sup> See: <u>http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2015-0205+0+DOC+XML+V0//EN&language=EN</u> and <u>http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=PI\_COM:C(2017)5446</u>

<sup>&</sup>lt;sup>3</sup> 2 years after the decision was voted on in the European Parliament



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