

Dyesol and Printed Power (Singapore) Entering a New Market

Singapore & Australia – 23 April 2013 – Printed batteries and sensor networks are to be integrated with energy generating Dye Solar Cell technology in products being developed by Printed Power Pte Ltd in a new venture with Dyesol Limited.

Tapping into the multi-million dollar wireless remote sensor market and emerging printed battery market for near term Combined Energy Generation and Storage devices is driving the vision to develop a low-light indoor DSC-powered product.

“This is a really exciting time for Dyesol as we will be leveraging exciting advances in solid state (dry) DSC research to access a new commercial opportunity,” said Dyesol Director Gordon Thompson. “The IP that we jointly develop within Printed Power will also be available to Dyesol to help progress our projects to the mass-market commercialisation stage.”

Dyesol is entering this new market opportunity by acquiring an equity stake through a strategic investment in Printed Power Pte Ltd, a spinoff company out of Nanyang Technological University (NTU). Printed Power is initially focussing on the integration of Dye Solar Cell (DSC) technology with printed storage and power management systems to create fully integrated Combined Energy Generation and Storage devices.

The aim is to be at the forefront of fully printed and self-sustaining Combined Energy Generation and Storage (CEGS) solutions globally. CEGS devices have a range of applications including sensor networks and smart building applications, thereby opening up a wide range of commercial opportunities.

Printed Power has been awarded a SG\$480k (AUD\$371k) grant from the SPRING Singaporean Government enterprise development agency for a “Proof of Value” project to develop low light indoor sensor network product suitable for commercialisation within a two year time frame.

The “Proof of Value” project involves proving concepts with liquid DSC systems and then migrating to a fully integrated solid state DSC CEGS device using the best available solid state DSC technology to create a first-mover advantage in selected market applications.

“Dyesol’s relationship with Printed Power is focussed on the development of autonomous self-powered devices and bringing these products to market,” said NTU Professor Subohd Mhaisalkar, Director of Printed Power. “DSC lends itself to this application in two ways - as an extremely efficient indoor energy harvesting system, and as a viable low-cost printable technology compatible with mass production.” Mr Thompson added.

“The commercial product development activity being undertaken by Printed Power provides an early opportunity to exploit the excellent solid state DSC research being undertaken by École Polytechnique Fédérale de Lausanne (EPFL), Dyesol and NTU where impressive efficiencies in the double digit range under a broad spectrum of light conditions have now been achieved,” said Professor Michael Grätzel, who directs the Laboratory of Photonics and Interfaces at EPFL, where world leading research into DSC occurs.

About Dyesol Limited

Dyesol is a global supplier of Dye Solar Cell (DSC) materials, technology and know-how. DSC is a mesoscopic photovoltaic technology enabling metal, glass and polymeric based products in the building, transport and electronics sectors to generate energy and improve energy efficiency. Dyesol partners with leading multinational companies who possess significant market share and established routes-to-market. The company is listed on the Australian Stock Exchange ([DYE](#)), the German Open Market ([D5I](#)), and is trading on the OTCQX ([DYSOY](#)) through its depositary BNY Mellon. Learn more: www.dyesol.com Subscribe to Mailing List and eNewsletter [here](#).

About Dye Solar Cell Technology

[DSC technology](#) can best be described as 'artificial photosynthesis' using an electrolyte, a layer of titania (a pigment used in white paints and tooth paste) and ruthenium dye deposited on glass, metal or polymer substrates. Light striking the dye excites electrons which are absorbed by the titania to become an electric current. Compared to conventional silicon based photovoltaic technology, Dyesol's technology has lower cost and embodied energy in manufacture, it produces electricity more efficiently even in low light conditions and can be directly incorporated into buildings by replacing conventional glass panels or metal sheets rather than taking up roof or extra land area.

About Printed Power

Printed Power Pte Ltd was founded in 2008 to exploit the proprietary intellectual property on printed supercapacitors and batteries developed at NTU, Nanyang Technological University. While the fundamental research continues to develop out of NTU, Printed Power's core business is in taking that fundamental research, and adapting and developing it into printed power solutions to match with industry needs. Printed Power's core competency lies in its current patent portfolio that comprises use of carbon and metal oxide based nanomaterials in novel architectures and in its ability to adapt these technologies to industry specific applications.

About Nanyang Technological University

A research-intensive university, NTU has 33,000 undergraduate and postgraduate students in the four colleges of Engineering, Business, Science, and Humanities, Arts & Social Sciences. The largest campus in Singapore, NTU is also home to four world-class autonomous institutes – the S Rajaratnam School of International Studies, the National Institute of Education, the Earth Observatory of Singapore and the Singapore Centre on Environmental Life Sciences Engineering, and many leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N). A fast-growing university with an international outlook, NTU is putting its global stamp on Five Peaks of Excellence – Sustainable Earth, Future Healthcare, New Media, New Silk Road and Innovation Asia. In 2013, NTU will set up the Lee Kong Chian School of Medicine in Singapore jointly with Imperial College London. For more information, visit www.ntu.edu.sg

About SPRING Singapore

SPRING Singapore is an agency under the Ministry of Trade and Industry responsible for helping Singapore enterprises grow and building trust in Singapore products and services. As the enterprise development agency, SPRING works with partners to help enterprises in financing, capability and management development, technology and innovation, and access to markets. As the national standards and accreditation body, SPRING develops and promotes an internationally-recognised standards and quality assurance infrastructure. SPRING also oversees the safety of general consumer goods in Singapore. www.spring.gov.sg

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