

## Dyesol Achieves Technical Breakthrough In Solid-State DSC

**Sydney, Australia, 8 May 2013** - Dyesol, the world leader in the commercialisation of Dye Solar Cell (DSC) technology, has achieved a "game changing" technical breakthrough by **achieving a solid-state DSC efficiency of 11.3% at full sun.**

The breakthrough comes as the technology transitions from liquid-based to solid-state systems to meet the demands of product life and mass manufacture. The variation in technology, known as mesoscopic solar cells, meets the technical challenges of mass manufacturing Building Integrated Photovoltaic (BIPV) products and will allow Dyesol and its multi-national commercialisation partners to confidently address the multi-billion dollar global market.

In 2010, solid-state DSC performance was at a mere 5%, significantly lagging the performance of liquid based systems. However, the subsequent technical advancement has been nothing short of revolutionary. Dyesol, through the work of its scientist Dr Peng Qin, based at the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland, has achieved solid-state DSC laboratory efficiency of 11.3%. Dyesol is also confident of achieving industrial efficiencies greater than 10% because of the added simplicity of working with solid-state systems. At this level of module performance the technology will be grid competitive - the "holy grail" for renewable energy technologies.

This achievement is particularly important in solar markets where light conditions are sub-optimal, such as Europe, North America and North-East Asia, where Dyesol technology has a considerable advantage over 1<sup>st</sup> and 2<sup>nd</sup> generation photovoltaic technologies.

Chairman Richard Caldwell said: "The business case for solar remains compelling, however there is every reason to question which technologies will emerge from the current solar industry maelstrom as winners. **Today's announcement represents a quantum leap for Dyesol and its' commercialisation partners** and we look forward to a rapid transition from the laboratory to the production line".

Dyesol has been working closely with R&D partner, the EPFL, and is confident of announcing further improvements in solid-state performance in the near term. Remarkably, solid-state performance is confidently expected to outperform all hitherto known and published liquid-based efficiencies. DSC inventor and EPFL Professor, Michael Graetzel, is speaking at the HOPV Conference in Seville, Spain this week where he will be discussing some of the latest technological developments.

### **About Dyesol Limited**

Dyesol is a global supplier of Dye Solar Cell (DSC) materials, technology and know-how. DSC is a 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.F), and is trading on the OTCQX (DYSOY) through its depositary BNY Mellon. Learn more and subscribe to our mailing list: [www.dyesol.com](http://www.dyesol.com)

### **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. The term mesoscopic has been introduced to reflect further advances in the technology, particularly where a perovskite is substituted for dye as a sensitiser. Light striking the sensitiser 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.

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