Thin Film Organic Solar Cells: Power Plastic Converting Light to Energy – Anywhere

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Achieving efficient solar energy conversion at both large scale and low cost is one of the most important technological challenges for the near future. In this respect solution-processed thin film organic solar cells have gained serious attention during the last few years. Among all the photovoltaic technologies, organic solar cells are outstanding in their potential as a true low cost photovoltaic technology because of their compatibility to conventional, large volume printing and coating processes.

World wide research in organic solar cells has started around 10 years ago. Since then the number of scientific publications is growing exponentially indicating the enormous interest in this technology. In 2006, about 10 % of the scientific publications in the field of photovoltaics reported on organic solar cells. At the same time the performance of organic solar cells was improving gradually from 1 % in the year 2000 to over 8 % in 2011.

Konarka Technologies is leading the development and commercialization of thin film organic solar cells and launched the first solution-processed thin film organic solar cell product in 2009. The company is currently developing large scale production capabilities and is exploring new materials and components for next generation products with improved performance.

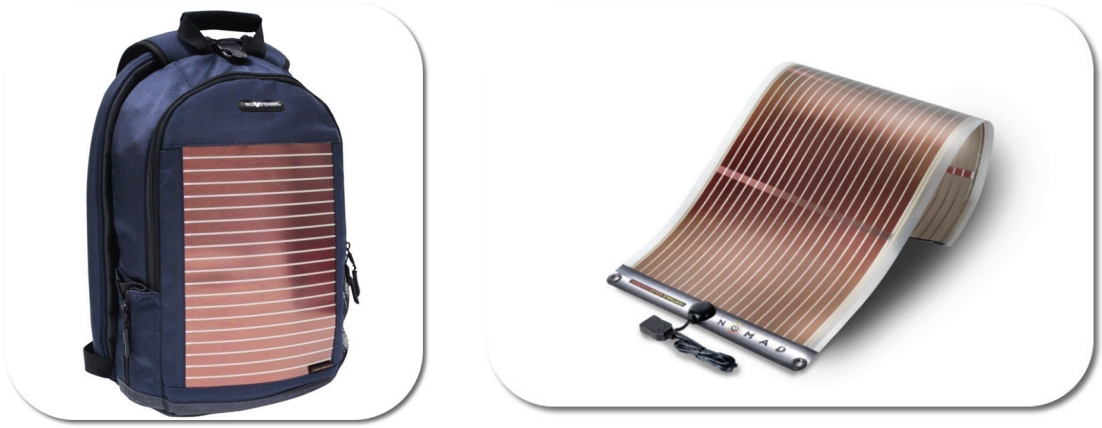

Fig. 1: Portable chargers with Konarka's thin film organic photovoltaic material

In the presentation the basic concepts and advantages of thin film organic solar cells are discussed. Realized and potential applications of thin film organic solar cells will be described and an outlook on the future development of the technology is given.

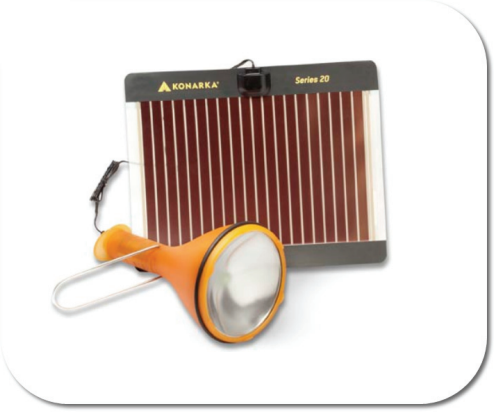

Fig. 2: Pico/Power Plastic® Lantern

Fig. 3: Transit shelter, San Francisco