

Organic Semiconductor Analyst Direct Newsletter

Monday, 5 January 2009

Vol. 7, Issue 1

Printable organic photovoltaic aims for high efficiency

Cryscade Solar Ltd. has recently announced that they have made further technical progress in developing printable organic photovoltaic technology that the company believes could theoretically achieve up to 30%

The organic photovoltaic technology developed by the company relies on fabricating devices using molecules that possess a "Donor-Bridge-Acceptor" structure, such a structure providing molecular pn-junctions. This structure enables two specific features :

- separation of carriers at the point light absorption occurs in each molecule of the material
- self- assembling of molecules into stacks, which provide escape paths for separated carriers in segregated 'pipes' formed by Donors and Acceptors. The charges are kept separated for transportation along their channels to selective electrodes.

Dr. Evgeny Morozov, CTO of Cryscade Solar Ltd., said "This approach enables implementation of high efficient solar cells, as internal quantum efficiency of charge separation can attain up to 100%, but recombination is suppressed due to the fact that positive and negative charges travel separately. At present Cryscade Solar has obtained supporting data and laboratory test results for each technological step. We have developed an optimization process that will allow to improve current 0.1% efficiency and make Cryscade solar cells commercially valuable (2-5%) in several months."

Dr. Pavel Lazarev, CEO of Cryscade Solar Ltd., "this is the only opportunity for photovoltaics to be cheap as organic and efficient as silicon."

Editor note: Dr Pavel Lazarev presented a paper on this technology at the Organic Semiconductor Conference OSC-08, Sept/Oct 2008 -"Molecular level homeotropic pn-junction solar cells", P. Lazarev, E. Morozov

About Cryscade Solar Ltd

Cryscade Solar Ltd. is developing new proprietary organic materials and efficient scalable fabrication technology aiming to change the solar cell industry landscape, accelerate its growth, and make solar energy accessible throughout all parts of the world. Cryscade Solar has more than a decade of history of the technical team working together on design of functional organic materials.

www.cryscade.com