

Press release

For immediate release

Swedish solar energy expert Midsummer reaches new efficiency record for CIGS solar cells

[Stockholm, Sweden, May 13, 2014.] **Midsummer, a leading supplier of production lines for cost effective manufacturing of flexible thin film CIGS solar cells, announces that it has increased the efficiency of its solar cells from 15 per cent to 16.2 per cent aperture area of the full 156×156 mm solar cell. This increased energy efficiency further strengthens the business case and attractiveness of thin film CIGS solar cells.**

Midsummer has recently managed to increase the efficiency of the whole solar cell to 16.2 per cent aperture area of the full 156×156 mm cell. The solar cell was manufactured in a regular production run and the process is already implemented in the production line.

“Considering that the solar cell is made on stainless steel, contains no cadmium and that the production process is an all-dry, all vacuum process where all layers (including the buffer layer) are deposited by sputtering, this achievement by our engineers is truly impressive,” said Sven Lindström, CEO Midsummer.

Inexpensive lightweight flexible modules

With the production system from Midsummer the solar cells are manufactured individually and then strung together into modules just like crystalline solar cells. This way, lightweight flexible modules can easily be made in any size and shape.

A dry, all-vacuum process has less stringent requirements for clean-rooms. Avoiding cadmium in the manufacturing process is desirable for the sake of the production staff and also makes it easier to commence low cost manufacturing of CIGS solar cells.

Market shifts towards rooftop installations

“The global solar cell market is facing a paradigm shift,” said Sven Lindström, CEO, Midsummer. “Fewer large solar energy parks are being built in Europe. Instead, focus is moving to installations on large buildings in cities. The lightweight and flexible thin film solar cells are ideal for this use. It is economically and environmentally more beneficial to use solar energy locally, where it is produced.”

“Midsummer's objective is that our technology shall be a leader in the market segment lightweight, flexible solar panels, and that the company shall grow in tandem with this rapidly growing segment.”

For photos of thin film CIGS solar cells and the Midsummer manufacturing equipment, please go to <http://www.midsummer.se/pressmediagallery.html> or contact Mr. Lindström.

For additional information please contact:

Sven Lindström
CEO, Midsummer
Email: sven.lindstrom@midsummer.se
Phone: +46-8-525 09 610

About Midsummer

Midsummer is a leading supplier of equipment for cost effective manufacturing of CIGS thin film flexible solar cells. Midsummer's turnkey manufacturing lines have a small footprint, are perfectly scalable and allow for small-scale production of solar cells and modules.

Midsummer's customers are thin film solar cell manufacturers all over the world. CIGS flexible solar modules are growing in popularity thanks to their low weight, flexibility and durability. Applications are e.g. floating modules, vehicles, landfills, portable power generation and membrane roofs on factories, offices and other structures that are not strong enough for traditional glass modules.

Founded in 2004 by people with a background from the optical disc manufacturing equipment and the photo mask industry, Midsummer has its head office in Stockholm, Sweden. Midsummer was the fastest growing greentech company in EMEA (Europe, Middle East and Africa) in 2007-2011 (according to Deloitte).

About CIGS thin film solar cells

CIGS stands for copper-indium-gallium-selenium, a metal alloy that converts the energy of light directly into electricity by the photovoltaic effect (PV). The CIGS absorber is deposited on a stainless steel substrate, along with electrodes on the front to collect current. The cells are then connected in series and covered by a protective layer of plastic to form a flexible solar module.

Since a stainless steel substrate is used, the modules can be made without glass. The CIGS solar modules are therefore much lighter, flexible and can be made frameless, to suit applications where traditional silicon solar cells cannot be used, e.g. on structures that are uneven, moving or weak.

CIGS solar cells are manufactured by sputtering the material onto 156x156 mm stainless steel substrates. The solar cells from Midsummer are free of cadmium, a toxic material usually used in CIGS and other thin film solar cells. Flexible CIGS solar modules are gaining market share thanks to its high efficiency, low weight, flexibility and durability.