



## PRESS RELEASE

EU PVSEC (Trade fair booth: L3 H3 D22)

### **Research & development breakthrough: Thin-film manufacturer Sulfurcell unveils 0.8m<sup>2</sup> prototype with TÜV-tested efficiency of 10.7%**

**Berlin/Valencia, 6 September 2010** – At this year's EU PVSEC, Sulfurcell Solartechnik GmbH will be unveiling the prototypes for its new product line: 1.25 m x 0.65 m modules with a considerably increased efficiency of 10.7 per cent and a peak output of 86.8 watts. TÜV Rheinland, the German technical inspection agency, has confirmed the results. In developing the powerful modules, Sulfurcell is relying on a reconfigured semiconductor layer: for the first time the company is producing thin-film modules based on CIGSe semiconductors. The 'CIGSe' abbreviation stands for the elements copper, indium, gallium and selenide. In contrast to the first production line, Sulfurcell is using selenide instead of sulphur in its new high-performance modules. The company will be converting part of its production to CIGSe in 2011 and will then market the premium product on a megawatt scale.

After an intensive development phase lasting just four months, Sulfurcell succeeded in July this year in producing the first prototypes of large-format CIGSe solar modules with efficiencies greater than 10%. This represents a milestone for the highly specialist experts in Sulfurcell's research department, since only very few manufacturers of thin-film solar modules are currently capable of producing high quality modules with efficiencies in double figures. "The development success confirms our strategy of continually furthering Sulfurcell's proven technology. It was possible because we were able to build on the experience gained from five years of producing and marketing CIS modules. The high module efficiency demonstrates that we will also be able to compete in the very top league of thin-film specialists in future," enthuses Dr Nikolaus Meyer, CEO and founder of Sulfurcell.

#### **CIGSe technology holds huge potential**

Scientists have already been able to produce CIGSe solar cells with efficiencies greater than 20% under laboratory conditions. In order to exploit this potential, Sulfurcell's CIGSe process deploys co-evaporation techniques. The manner in which these are utilised to manufacture the record-breaking cells depends,

however, on proprietary design and components. A major advantage of this process is that the CIGSe layer properties can be precisely configured, which enables the material's potential to be exploited to the full. The company's medium term technology roadmap is clearly defined: Sulfurcell is already aiming to surpass the 11% threshold in 2011 and the 12% threshold in 2012. Module efficiencies exceeding 14% are realistic by 2015.

### **Success through strong partners**

"This resounding research success is due not only to our highly specialist production processes and the longstanding expertise of our development engineers but also to our excellent cooperation partners," explains Dr. Nikolaus Meyer. Sulfurcell continually exchanges expertise with the Helmholtz Centre Berlin, from which the company was established as a spin off in 2001. For developing and optimising innovative production processes for CIGSe-based thin-film modules, Sulfurcell also works exclusively with 44solar from Nantes in France. The head of the company is the renowned CIGSe specialist Professor John Kessler. With him and his colleagues Sulfurcell is already planning the construction of new, highly productive machines in order to further develop the CIGSe technology and achieve maximum efficiencies. Sulfurcell will be unveiling its new prototypes to the trade public from 6 to 10 September 2010 at the EU PVSEC (Booth 3/H3/D22).

In 2001, Sulfurcell was founded as a spin-off from the Helmholtz Centre for Materials and Energy, previously known as the Hahn-Meitner Institute. The company is one of the world's three leading manufacturers of thin-film solar power modules based on CIS semiconductors. Sulfurcell has received numerous awards for its cutting edge research and product development. The UK's Guardian newspaper once again recently listed the Berlin company among the "hottest 100 clean technology companies in Europe". In 2008, Sulfurcell was provided with growth financing amounting to 85 million euros by renowned international investors, including Intel Capital and the BEU fund supported by Vattenfall Europe and Gaz de France. This fresh capital was utilised for constructing new production facilities and for research and development.

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