

## **New Record for Oerlikon Solar's Micromorph® Technology**

Oerlikon Solar Achieves Record Thin Film Silicon Efficiency and Power Output

- Demonstrates ability by Oerlikon Solar to achieve greater than 11 percent conversion efficiency (151 Watts)
- Reinforces Oerlikon Solar's technological lead
- Marks key milestone in Oerlikon Solar's grid parity strategy

***INTERSOLAR MUNICH, May 27, 2009 – Oerlikon Solar, the world's leading supplier of thin film silicon photovoltaic (PV) production equipment, today announced that it has achieved a new record efficiency level for commercial thin film silicon PV modules. Recent test results from Oerlikon Solar's pilot production line in Switzerland show that full-size Micromorph modules (1.4 m<sup>2</sup>) have 151 Watts initial power, or 11 percent initial power conversion efficiency. This result sets a new industry record for production thin film silicon modules. Oerlikon Solar was able to consistently reproduce modules with similar record results, demonstrating a stable and scalable process. "This achievement clearly demonstrates Oerlikon Solar's technical leadership and is another key milestone on our path to grid parity", stated Jeannine Sargent, CEO of Oerlikon Solar. Oerlikon Solar has previously announced an ambitious production cost target of USD 0.70 per Watt peak and is on track to achieve this target by end of 2010. Increased module efficiency and power are key contributors to this goal.***

The excellent performance of the record modules demonstrates the advantage of Oerlikon Solar's end to end manufacturing solution. Oerlikon Solar's advanced PV technologies and process integration know-how result in an optimized manufacturing solution that is able to achieve higher conversion efficiencies and lower cost of ownership. An example of this technology optimization is Oerlikon Solar's integration of a proprietary process to deposit high-quality transparent conducting oxide (TCO) on the front and back surfaces



Page 2 of the active thin film silicon junction. This TCO is engineered to optimize the performance of the Micromorph technology by improving light transmittance and light scattering, resulting in maximum efficiency and electricity output.

### **Success through best in class technology**

Oerlikon Solar is the world leader in silicon-based thin film solar technology and end-to-end manufacturing solutions with 10 established customers in operation or ramp up worldwide representing 600 MWp of yearly production capacity, enough to power 480,000 households. This record panel is the latest result of this ongoing development program and reinforces Oerlikon Solar's role as a technology and market leader.

### **Oerlikon Solar's end-to-end solution as key enabler**

"We successfully implemented several modifications of key processes of our end-to-end production line, leading to the increase in initial power output and efficiency", emphasized Dr. Juerg Henz, Head of Thin Film Engineering and Operations at Oerlikon Solar. "We are confident that our ability to repeatedly achieve record results can be transferred into mass production soon."

### **Low Cost, High Performance Technology**

Oerlikon Solar's IEC certified Micromorph<sup>®</sup> technology significantly boosts solar cell efficiency by adding a second microcrystalline absorber to the amorphous silicon (a-Si) layer. This layer converts the energy of the red and near-infrared spectrum, facilitating efficiency increases of up to 50 percent. The Micromorph technology also bolsters overall module power, enabling a growing number of PV module manufacturers around the globe to produce cost-effective high-performance thin film silicon solar modules.

*"Just one more milestone in Oerlikon Solar's mission to make Solar Power economically viable."*

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### **About Oerlikon Solar**

*Oerlikon Solar offers cost-effective, field proven end-to-end solutions for the mass production of thin-film silicon solar modules. These fully automated manufacturing solutions are focused on reducing device cost and maximizing productivity. They are available as modular end-to-end solutions with metrology and upgradeability in throughput and process technology.*

*Oerlikon Solar has developed a unique and innovative technology based on its leadership in thin film technology and close cooperation with its customers.*

*Oerlikon Solar is headquartered in Trübbach, has over 790 employees in 13 locations world wide and maintains sales and service centres in the USA, Europe, China, Korea, Taiwan and Japan.*

### **About Oerlikon**

*Oerlikon (SWX: OERL) is one of the world's most successful high-tech industrial groups specializing in machine and plant engineering. The company is a leader in the field of industrial solutions and innovative technologies for textile manufacture, thin-film solar and thinfilm coating, drive, precision and vacuum systems. With roots in Switzerland and a long tradition stretching back 100 years, Oerlikon is a global player with a workforce of more than 19,000 at 170 locations in 35 different countries. The company's sales amounted to CHF 5.6 billion and it ranks either first or second in the respective global market.*