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LED'S GO TO SINGAPORE:

SERIS ACQUIRES WAVELABS' LED SOLAR SIMULATOR

The Solar Energy Research Institute of Singapore (SERIS) has joined the Fraunhofer Institute to become the next world-renowned research institution to acquire the WAVELABS SINUS-220 LED solar simulator. WAVELABS' entry into the Asian market signifies the global recognition of its SINUS technology as an indispensable tool for photovoltaic research and testing, and offers a glimpse of things to come.

SERIS develops and tests PV products in Singapore as part of its research focused on high-performance PV modules and systems for the tropics. As a leading international research center, it sees new PV technologies both before and after they reach the market. The technology behind photovoltaic solar cells changes rapidly. Conventional short-pulse, xenon-based solar simulators struggle to provide accurate measurements for the latest generation of high-efficiency PV cells. For a leading global solar R&D institute such as SERIS, metrology is a critical aspect of its mission.

With its SINUS-220 solar simulator from WAVELABS, SERIS now has access to the best simulation of the sun available. In contrast to conventional flash solar simulators that can only emit very short pulses of light, the SINUS-220 offers researchers at SERIS variable exposure times ranging from 10 ms all the way up to 3 seconds. "Solar simulators that can only give us a short pulse can't provide accurate measurements of high-efficiency cells that exhibit a strong capacitive effect. For accurate efficiency measurements of the latest PV cells, we need a light source that can provide stable exposure times compatible with 150ms/V voltage ramp speeds," explained Dr. Johnson Wong, head of the PV Characterisation Team at SERIS.

The SINUS-220 LED solar simulator has 21 different types of LED, each emitting a portion of the simulated solar spectrum. Using its integrated spectrometer, the SINUS-220 is able to monitor and maintain its emission spectrum at a constant level over time by self-adjusting the

output of its individual LEDs. This has two main advantages. First, unlike Xenon lamp simulators, the spectral quality of the SINUS-220 does not degrade over the lifetime of the light source, which could result in measurement variance. Secondly, SERIS can configure the device to emit different colors of light for specific tests and adapt the spectrum to simulate solar irradiance in different geographic regions, such as Southeast Asia.

“Sending a SINUS-220 to SERIS in Singapore is an important milestone for us,” noted Dr. Torsten Brammer, CEO of WAVELABS. “With two of the world’s leading centers for photovoltaic research now using the SINUS-220, our technology is rapidly gaining recognition among top researchers. We expect this trend to accelerate, with more international organizations at the forefront of PV development coming on board in the coming months and years.”

WAVELABS Solar Metrology Systems GmbH was founded in October 2011 by Dr. Torsten Brammer, Jörn Suthues and Dr. Thankmar Wagner. Together, Brammer and Suthues have over 30 years of experience in photovoltaics at renowned institutions and private enterprises including the Fraunhofer Institute for Solar Energy Systems and Q-Cells AG. Dr. Thankmar Wagner has international experience in the fields of commercial and tax law, mergers & acquisitions, and finance.

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