Close

Exhibitor highlights for Intersolar North America 2010

(July 9, 2010) -- Intersolar North America 2010 will take place at the Moscone Center West Hall in San Francisco, July 13-15. The following are new microscopes, solar panels, encapsulants, solar power monitoring systems, and other products and tools for the photovoltaics industry that will be on display during Intersolar North America.

Solar inverters

SOLIVIA solar inverters produced for the North American market will be presented for the first time to the public at the Intersolar tradeshow in San Francisco. Four new models Ð SOLIVIA 2.5, 3.3, 4.4 and 5.0 NA G3 Ð with a nominal output power ranging from 2.5 to 5.0 kW complements our already available European solar inverter product line from Delta. Production will begin in the fourth quarter of 2010. The high-frequency grid-connected SOLIVIA solar inverters from Delta are suitable for all commonly used solar modules -- also for thin-film and rear-side contact PV modules -- due to the implemented galvanic isolation and the integrated DC wiring box that accommodates either positive or negative DC grounding. All models incorporate an integrated lockable DC disconnect which is mandatory for many local authorities, leading to reduced installation efforts and expenses as it eliminates the need for an external 600 Vdc disconnect switch. The high-frequency grid-connected solar inverters for the North American market operate within a wide temperature range, up to 50 degrees C with full power output (without derating). This ensures high yields even for installations in warmer climates. With its intelligent MPP tracking the inverters get maximum energy harvesting from the solar modules under all operating conditions. The SOLIVIA inverters feature a lightweight, compact design and simplified installation by using the unique mounting plate that is provided. In addition, the SOLIVIA inverters are NEMA4 / IP65 enclosure rated for dust-tight operation, completely safe to touch and protected against moisture, allowing the models to be installed indoors as well as in protected outdoor areas. All relevant status messages and stored data can be recalled either via the integrated display or via a PC connected to the RS485 communication interface. **Delta Electronics Group, Delta Energy Systems (DES), Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7240.**

GXS dry pump for solar crystal puller and laminator apps

Edwards, vacuum and abatement equipment and services provider, debuted the GXS dry pump, designed to support pumping requirements for silicon ingot manufacturing and laminator applications in the solar industry. The GXS optimizes thermal control and dust handling for challenging pumping processes. The high atmospheric pumping speed capability also enables faster chamber pump down. The dry pump suits the specific pumping process requirements for solar laminator and crystal pulling applications, said Allister Watson, Ph.D., solar and flat panel display dry pump product manager at Edwards. “Its closed-loop thermal management system ensures the pump remains at a temperature to prevent pump seize-ups, due to either glue condensation in laminator applications or overheating when pumping high concentrations of argon during crystal pulling applications. At the same time, its fast

pump down time, low utility consumption and reduced maintenance all contribute to a low cost of ownership." The GXS uses a tapered variable pitch screw profile (patent pending) that allows for tight clearances without the need for rotor coatings. It also enables compression variations along the rotor axis for improved thermal stability and better thermal control, making it an optimal pump to handle the high flows of argon gas used in crystal pulling applications, as well as the dust generated during the manufacturing process. The GXS dry pump can operate on as little as 3.9 kW of input power (depending on the pump version) and reportedly uses 57% less energy than competing piston pumps. The high-efficiency motors are inverter-driven and enable reduced energy by running in idle mode. Inert, non-oxidizing oil is used to lubricate the gears and bearings of the pump with no maintenance required between major services and no oil changes. The dry pump features a small footprint (approx. 0.4 × 1.1 × 0.8m) and low noise (<64 db[A]), which allow pumps to be located close to customers' chambers, if required. The GXS pump is compatible with Edwards Fabworks data monitoring system so that pump parameters can be monitored and trended in real-time via a central computer. **Edwards, Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8047.**

240W monocrystalline module

Fluitecnik, Inc. is pleased to announce the latest addition to its family of PV Modules. The 240 Watt Monocrystalline module is constructed of 10 strings of 6 monocrystalline cells and is available in either the standard white back sheet with a silver aluminum frame or for the esthetically conscious customer, it is available with a black back sheet and black aluminum frame. The black back sheet and black frame combination allows for a more integrated look and feel for residential or commercial rooftop projects. With an efficiency rating peaking out at 15.1% respectively, this module should prove to be a great value. All of Fluitecnik's PV modules are UL 1703, IEC 61730, IEC 61215, IEC 61730 and CEC (California) certified. Fluitecnik has applied for and expects to have FSEC (Florida) certification in the coming months. **Fluietcnik Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8503.**

Solar light converter

Geosis Corporation will be unveiling its new and unique solar light converter. Geosis' Yosemite Series Solar Light is another innovative product under the brand name Sunmia Solar Lighting Solutions. The Yosemite Series converts an existing lamp post into a solar powered light with minimal assembly. "The Yosemite series is designed to provide users an easy alternative to becoming green. With the new Sunmia product, old commercial and residential lights can be converted into solar lights without incurring additional installation costs while reducing energy the way it was intended." Geosis Corporation recently completed trial installations in several locations throughout the United States, proving that the Yosemite series is an easy way to convert residential and commercial lighting into solar powered lights. The Sunmia Yosemite Light fixture is designed to fit any lamp post with a 3" diameter. The solar panel assembly is designed to be adjustable at three different angles to maximize sunlight exposure. This feature allows users to mount the Yosemite fixture on lamp posts that were originally placed in shaded areas thus allowing it to be converted into a solar powered light despite its location. The Yosemite fixture converts existing lamps into solar lights with minimal assembly making retrofitting an easy task and companies saving on labor and material costs. It is designed for OEM and retrofit projects. The high grade die cast aluminum with powder coat finish can withstand rough weather conditions and vandalism. The Yosemite fixture can be converted into a hybrid system for government and security usage. The hybrid system will allow AC to power the fixture during a long period of cloudy days. The Yosemite Fixture comes with a Sunmia 3W LED bulb promising 30,000 hours of light and uses only 10% of the electricity compared to incandescent or halogen lights. All Sunmia fixtures are assembled with the highest quality materials for superior customer satisfaction. Li-Ion Phosphate rechargeable battery (LiFePO4) for longer lifecycles and fast recharging times and a superior engineered

light controller that offers Multiple Light Control Options. Additionally, Sunmia's Yosemite fixture proves to be the best solution for off-grid outdoor lighting. Not only is the fixture structurally strong, it offers the aesthetics for residential and commercial use while using a high performance solar panel and LED bulbs for guaranteed light. **Geosis Corporation, Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7150.**

Copper-gallium rotary sputtering target

Indium Corporation is featuring its newly developed copper-gallium (Cu/Ga) rotary sputtering target at Intersolar North America. The targets are made by Indium Corporation's vertically integrated proprietary process utilizing aerospace powder metallurgy technology. The production process output results in a consistently homogeneous alloy, with low contaminate levels and consistent density throughout the target. The targets can be produced in chemistry ranges from 50% to 80% Cu atomic weight, with Ga making up the balance of the alloy. They are produced as a monolithic material, bonded onto the backing tube during Indium Corporation's unique hybrid consolidation process. **Indium Corporation, Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8451.**

Continuous horizontal tube furnace

Koyo Thermo Systems, a leading manufacturer of furnaces and ovens for the semiconductor, solar and LCD industry, announces the sales launch of a new continuous horizontal tube furnace for POCl3 doping of silicon wafers and crystalline solar cells. Until now phosphorous doping of solar cells had to be done in a non-continuous process in a horizontal tube furnace or in a special conveyor furnace. The horizontal furnaces need a large footprint and much time for loading and unloading is used. On the other hand, the conveyor furnaces cannot work with doping gas. Additional process steps like printing a doping paste on the wafers and removing it after thermal treatment are necessary. As the first furnace manufacturer, now Koyo Thermo Systems merged the benefits of both systems and developed a continuous tube furnace which can use POCl3 doping, has a low foot print, high throughput, low energy consumption and reasonable price. Today Koyo Thermo Systems presented this brand new furnace at the solar exhibition PVJapan 2010 in Yokohama. Koyo expects, that this new model will be a break through in doping technology. This furnace can help to reduce production costs of crystalline solar cells further and this is a key issue in the development of alternative energies and it can be used also for doping of semiconductor wafers in IC manufacturing. Koyo had done pioneering work for doping solar cells before already. A modified conveyor furnace with wire transportation system had been developed, which could offer an improved temperature uniformity during doping and same time reduce energy consumption, compared to the conventional mesh belt transportation furnace. **Koyo Thermo Systems is a subsidiary for JTEKT, Intersolar North America 2010, Moscone Center, West Hall.**

Compact moisture monitor

MEECO Inc., attuned to the mounting demand for clean solar-grade gas, today announced that it will introduce its new M-i moisture monitor at the Intersolar trade show in San Francisco. The world's first mini P2O5-based moisture monitor, the M-i is the world's smallest, lowest-cost absolute moisture monitor, offering proven stability, precision, and repeatability. A breakthrough in mini-sensors, the M-i packs high-powered clean technology into a small, innovative and affordable package. Designed for fixed gas applications, the M-i measures an ideal range of 500 ppb (parts-per-billion) to 1000 ppm (parts-per million). Utilizing MEECO's proven electrolytic

technology, the new device is palm-sized and provides continuous, no-drift, on-line moisture analysis at a very low cost (under $2,000). Renowned for reliability and innovation, MEECO has manufactured durable, high-quality gas analyzers for industry since the company's founding in 1948. The company helped the natural gas industry with the invention in 1959 of a portable moisture analyzer for field technicians, eventually selling more than 10,000 of its "NEP" analyzers. **MEECO Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8354.**

Protection products

Helio Protection products are designed to protect solar power systems.
The conversion of solar energy to electricity is a reliable process, as long as it's properly protected. Mersen offers a dedicated range of protection components specially designed for solar power generation and distribution including, fuses, fuse holders, wire management solutions, disconnect switches, and surge protective devices. **Mersen, formerly Ferraz Shawmut, Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7463.**

Solar simulator

Oriel, a Newport Corporation Brand, announces the Sol3A 12 × 12 Solar Simulator. The latest addition to the Class AAA solar simulator product family features a 12 × 12″ (300 × 300mm) output beam. The new instrument utilizes a single 1600W xenon arc lamp with a unique optical design that is capable of meeting spectral match, non-uniformity of irradiance, and temporal stability performance criteria without compromising the 1 Sun output power. In addition, Newport's proprietary, highly stable spectral correction filter can withstand the very high intensity from the lamp without changing spectral properties. This true Class AAA performance is ideal for the most demanding photovoltaic (PV) applications that require a constant-wave (CW) light source. A black, non-reflective finish minimizes stray light and incorporates versatile captive screws for easy user access for alignment, lamp replacement, and filter changes. To ensure operator safety, temperature sensors and advanced safety interlocks provide additional protection and prevent inadvertent exposure to UV light. All Oriel Sol3A solar simulator products are factory-certified, Class AAA CW systems and have calibration certification that validates Class AAA for all three standards, including the IEC 60904-9 Edition 2 (2007), JIS C 8912, and ASTM E 927-05. The newest model offers improved working distances to accommodate larger samples, and the improved optical design delivers maximum spatial uniformity. Other Sol3A output beam sizes currently available include 2 in. x 2 in., 4 in. x 4 in., 6 in. x 6 in., and 8 in. x 8 in. Rigorously tested, the new Sol3A 12 x 12 offers high reliability and long-life operation to accommodate round-the-clock production environments. **Newport Corporation, Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8035.**

1MW, 1000V, distributed control system

Nextronex Energy Systems, a Northwest Ohio based company, manufactures and sells the Ray-Max 150 Solar Inverter and the Ray-Max Energy Maximization System. The Ray-Max 150 inverter is UL1741 certified and is the first model made in the United States with 1000 volt DC capability. This higher DC voltage offers increased efficiency and lower copper costs. The Ray-Max Energy Maximization System includes the new low profile inverters, and is an integrated solar inverter and wiring system designed to reduce and simplify field wiring. It provides distributed control of the inverters that maximizes energy output. The system provides a centrally located DC Buss with integral row boxes that eliminate series fusing. The inverters connected to the DC Buss are under master control Ð that turns them on and off as needed. According to Peter Gerhardinger, chief technology officer for Nextronex, "The Nextronex Ray-

Max System provides advanced data acquisition, diagnostics, and reporting for each row of a solar array. And, it provides up to 8% more energy output on an annualized basis. Because of the Ray-Max Energy System's array configuration, and its efficient use of the inverters, we are able to offer our customers an unmatched 20-year warranty." **Nextronex Energy Systems, LLC, Intersolar North America 2010, Moscone Center, West Hall, Level 3, 9636.**

Industrial dry-compressing screw-type vacuum pump line

DRYVAC has evolved from one design platform comprised of models 650 S, 650 S-i and 5000 RS-i. Multiple pumping system combinations are also possible for gaining increased pumping speeds and vacuum levels by incorporating the RUVAC¨ WH line of vacuum boosters. Both DRYVAC and the RUVAC WH offer improvements in leak tightness, energy efficiency and physical stature over competitive brands. DRYVAC series dry-compression vacuum pumps have been designed to meet the special needs of applications in the Photovoltaic production chain, Industrial Coatings and other Process Industry applications such as Heat Treatments, Metallurgy and general degassing. DRYVAC pumps are rugged, reliable and ready to fulfill demanding vacuum requirements where high vacuum, fast cycle times, energy efficiency, improved leak Ðtightness all in a space-saving design are required. Single pumps can achieve 7.5 x 10-3 torr vacuum and over 2,900 cfm nominal displacement. Enhanced performance is possible through use of a RUVAC booster stage. The DRYVAC line is an environmentally friendly alternative to traditional oil-sealed rotary piston and vane pump style vacuum pumps. With no lubricating oils contained in the pumps' compression stage, DRYVAC offers an improved operating environment with no oil emissions, reduced maintenance, with less down-time and disposal steps resulting in lower operating costs for our customers. Along with appropriately selected vacuum boosters, turbo-molecular pumps and cryogenic pumps, DRYVAC can also support large volume research experiments where multiple dry-compression pump stages are required to achieve ultra-high vacuum levels where no chance for hydrocarbon contamination is desirable. DRYVAC 650 S version is our base unit featuring an integrated frequency converter that allows for a wide operating voltage and frequency drive with no need for motor protection switches. The DRYVAC 650 S-i version includes the external pump housing, castors, integrated frequency converter, and an on-board PLC with touch screen. The PLC allows for control and monitoring via intuitive menu navigation software and field bus. DRYVAC 5000 RS-i includes all the aforementioned features plus an integrated vacuum booster that will achieve a nominal pumping speed of over 2,900 cfm. Standard and optional integrated gas ballast and purge gas modules are also available on all DRYVAC models. Additional DRYVAC features include a hermetically sealed motor design without external shaft seals and motor bearings, water cooling, low power consumption, compact footprint, low noise level and UL listed materials. The full-line vacuum portfolio offered by Oerlikon Leybold Vacuum supports other applications in the rough, medium, high and ultra-high vacuum regime. Pumping technologies, systems and services include oil sealed rotary vane and piston pumps, dry compressing and oil-free pumps, vacuum boosters, turbo-molecular, oil diffusion & cryogenic vacuum pumps as well as customized pumping systems and research coating systems. Repair & remanufacturing of all brands of vacuum pumps is also available. **Oerlikon (SWX: OERL), Oerlikon Leybold Vacuum, Intersolar North America 2010, Moscone Center, West Hall, Booth 8019**.

Digital microscope

The Hirox KH-7700 all-in-one portable digital microscopy system is designed to provide observation, recording and measurement for industrial and quality applications in such fields as metallurgy and materials science, electronics, forensics, medical device manufacturing and pharmaceuticals. It provides 2- and 3-dimensional measurement, display and real-time tiling for creating large composite images. It also offers quick extended depth of field, 360-degree rotational viewing, auto-calibration and both video and still imaging. Finally, it has a super-high-dynamic-range feature and supports local area network

(LAN) configurations. **Intersolar North America, Moscone Center, West Hall, Booth 9138.**

Contamination control technologies

Pall Corporation (NYSE:PLL), a global leader in filtration, separation and purification, will showcase economical and eco-friendly products and systems for the photovoltaic (PV) industry at Intersolar North America in San Francisco. The products are designed to help increase yield and reduce reworking times in solar cell manufacturing. Purification of the process gases utilized in solar cell production has become critical to enhancing yields and conversion efficiency. Pall will feature two new media for its Gaskleen purifier assemblies. The AresKleen HCLP media is highly effective in removing trace moisture down to <15 parts per billion (ppb) levels from HCl gas used in the formation of trichlorosilane, a key ingredient in the production of polysilicon. Silane, also involved in making polysilicon as well as amorphous silicon PV cells, frequently contains trace siloxane and moisture. AresKleen SIP medium reduces these detrimental contaminants to sub-ppb levels. All Pall purifiers have integrated, highly efficient particle filters. **Pall Corporation (NYSE:PLL), Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8326.**

High purity, Kimura elastomers

Perlast Ltd, a unit of IDEX Corp., is further lowering the cost-of-ownership of Etch and chemical vapor deposition (CVD) process equipment with the launch of new Kimura K23X and K2CD elastomers. Kimura K13X, and now K23X and K2CD elastomers, feature a proprietary, self-reinforcing polymer structure that avoids the need for traditional and organic fillers. As such the elastomer addresses the particulation and thermal expansion issues that can arise with fluoroelastomer (FKM) and high purity perfluoroelastomers (FFKM) seals in Etch and CVD processes. Kimura's absence of a filler, even an organic one, reduces the speed with which the elastomer is degraded by aggressive process plasmas, enabling Kimura seals to last up to 40% longer than FKM and FFKM seals in both hot and cold processes. The Kimura elastomer's low thermal expansion enables the Kimura seals to be retro-fit into existing O-ring glands designed for FKM and FFKM materials in older etching chambers. Moreover, the new technology elastomer exhibits low 'stiction' in dynamic applications such as L-motion gates, door seals and throttle valves, as compared with FFKMs. At the sub 45nm feature level, high purity perfluoroelastomers are reaching their operational limit. It is here that Kimura's extremely low levels of particulates give manufacturers a clear productivity edge. Designed specifically for sub 45nm features semiconductor architectures, the Kimura K23X and K2CD materials enable engineers to significantly increase CVD and Etch equipment productivity. "Kimura K23X and K2CD continue to drive the 'purity with performance' agenda in semiconductor equipment sealing," says David Holt, sales director, Perlast Ltd. "The new elastomer grades build on the success of Kimura K13X in Etch processes where it has provided unprecedented levels of service; and broaden the scope for Kimura to reduce equipment cost-of-ownership in CVD processes as well." **Perlast Ltd, Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8217.**

24-kW inverter for the U.S. market

REFU Solar Electronics, Inc. is pleased to announce the preview of its 24 kW, REFUSOL 024K-UL inverter line for the U.S. market at Intersolar North America. The innovative design of the REFUSOL 024K-ULÑbased on REFU's proven, award-winning European product lineÑwill feature 2 x 500 V maximum DC input voltage with 3-phase grid connection. This cutting-edge construction will enable the units to achieve a maximum efficiency of 98.2% and a European efficiency of 97.8%, a wide DC input voltage range and an MPPT-range of 2 x 260 to 450 V. The REFUSOL 024K-UL inverter is qualified for outdoor installation due to NEMA 3R protection class and can be used in combination with

crystalline and thin-film modules. In addition, our transformerless design with passive natural convection cooling makes for a remarkably compact and lightweight form factor allowing for swift and hassle-free installations in a host of commercial applications. **REFU Solar Electronics, Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7523E.**

Grid tie solar inverters

The new three-phase Xantrex GT30 Grid Tie Solar Inverter is a 30 kW high-performance inverter that makes utility-interactive installations easier and more cost effective. It offers superior PV energy harvest, easy installation, greater reliability and a compact, ultra-lightweight design. The Xantrex GT30 supports 120/208 Vac three phase power right out of the box and can be used as a building block for larger systems. The inverter weighs only 165 pounds (75 kilograms) and includes a wall mount bracket. Transformerless design with high peak and CEC efficiency. Symmetrical array design, coupled with internal inverter ground points, eliminate the need for double-insulated DC conductors. Outdoor rated, corrosion resistant cabinet and included wall mount bracket allow for flexible installation, AC and DC switchgear are included to reduce installation expense. One of the lowest weights in its class at 75 kg. Multiple inverters are easily paralleled for large PV power plants. Designed to maximize the return on investment.

The Xantrex GT Series Grid Tie Solar Inverter is based on a reliable platform that is used in grid-connected photovoltaic (PV) and wind turbine applications throughout North America and Europe. The Xantrex GT500 incorporates an advanced Maximum Power Point Tracking (MPPT) algorithm to maximize the energy harvested from a PV array. To reduce power losses during the conversion process, the inverter uses the latest switching devices and a high-efficiency transformer (GT500-480) to achieve high CEC efficiencies.

To ensure reliability, the Xantrex GT500 and its sub-components are tested using Highly Accelerated Life Testing (HALT). HALT combines thermal and vibration cycles to stress a product beyond its specifications. This enables Xantrex to develop products and test them to a much higher standard than other inverter manufacturers. High reliability of the Xantrex GT500 reduces system downtime and results in higher energy production.

Features ultra-efficient design with CEC efficiency of 97% (GT500-MVX version). Option to connect directly to medium voltage using a customer supplied transformer or transformer supplied by Schneider Electric. Integrated design with isolation transformer (480 V only) in one unit. Includes AC and DC disconnects for both 480 V and MV versions. Integrated ground-fault detection and interruption. Soft-start circuit to reduce nuisance trips (480 V only). Sealed design does not require filters or external air to cool sensitive components. Back and sides of unit designed for zero clearance installations to minimize inverter space requirements. Wiring access points on bottom, sides and back of inverter. Removable air outlet allows inverter to be mated with venting ductwork. Designed for fork lift or sling transportation. Zinc primed and powder coated steel enclosure for maximum corrosion resistance. Designed for maximum reliability with film-type capacitors and bus bars in the power path. Bright fluorescent green vacuum display with UV cover for ease of reading in sunlight. RS485/Modbus and RS232 communications. Available with a five-year standard warranty, extendable to ten years. **Schneider Electric, Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7255.**

Digital monitoring system

The Suntrol digital system collects, logs, and displays the power-generation performance of a Sunmodule system. The technologies will enable buyers of SolarWorld's highly rated solar technology to closely watch current and total electricity yields and CO2 savings by tying together a data logger, monitor and Internet portal. Using a free software application, owners can even keep track from a PC, cell phone or iPod.
SolarWorld also will introduce its 240-watt standard Sunmodule. Continuous production process improvements culminating at the company's historical mainstay – and now fully automated – manufacturing plant in Camarillo have added 10 watts of power-generation capacity to the product standard since Jan. 1.
High-quality, high performance, and high reliability – the Sunmodule Plus® is designed and built for long-term yield stability and ease of use. Every module is factory flashed at standard test conditions (STC) to determine the power output and then sorted in 5 watt increments. Only modules with a flashed power that is greater than or equal to the nameplate rated power are delivered. Flash report data is provided with every order. The proven design of the patented low profile Sunbox junction box, has been installed on over 4,000,000 modules. Integrated by-pass diodes and sealed welded connections ensure reliability and eliminate failures resulting from exposure to the elements. The molded fins on the exterior housing dissipate heat quickly to ensure high reliability and long life. The patented box channel frame design provides extraordinary stiffness in bending and torsion. The laminate with 4 mm glass is set deep in the frame channel and secured with precision applied adhesive. The frame is assembled by press fit to maximize strength and longevity. The result is an extremely robust package that can be mounted in any orientation and can withstand static loads of up to 113 psf. SolarWorld provides a 5-year workmanship warranty and 25-year linear performance guarantee. **The SolarWorld group (ISIN: DE0005108401), Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7123.**

SpectroRadiometer system to characterize and evaluate solar simulators

As photovoltaic cell manufacturers are driven to obtain higher production volumes and increased cell uniformity requirements, high performance solar simulation is a necessity. There are many companies offering high performance solar simulator lamps; these lamps provide the cell manufacturer measurement uniformity, comparability, and traceability. Likewise, organizations such as IEC, JIS, and ASTM have developed standards that define solar simulator performance in three key performance areas: spectral match to the solar spectrum, spatial uniformity of irradiance, and temporal stability. StellarNet developed a new solar monitoring system to evaluate solar simulator spectral match according to the above standardization organizations. The complete NIST traceable system consists of a portable UV-VIS-NIR grating based spectrometer, fiber optic cable, and light receptor. SpectraWiz¨ spectroscopy application software now includes a new solar match application panel that can be used to characterize and classify solar simulators. The Solar Match Monitor application panel calculates spectral irradiance from 400-500nm, 500-600nm, 600-700nm, 700-800nm, 800-900nm, 900-1000nm, 1000-1100nm and compares the results to the ideal percent for each range per IEC/JIS/ASTM. The proximity of the measured data to the ideal values results in classification of the solar simulator lamp from A through D. In addition to the new Solar Match Monitor application panel, SpectraWiz¨ also includes a multitude of radiometric and spectral analysis tools and calculations. User customizable SpectraWiz¨ LabVIEW programs and Excel programs for operation from Visual Basic Automation are included with every system. StellarNet miniature spectrometer systems are designed rugged with permanent alignment and no moving parts for shockproof and portable reliability. Plug and play USB-2 connection and powering options allows for ultimate measurement flexibility in any testing environment. **StellarNet Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 3, 9038.**

Encapsulants

Photocap¨ 15455P and Photocap¨ 15435P represent STR's latest mega fast-cure product for protecting

PV modules. The robust curing behavior of the Photocap 15455P and Photocap 15435P recorded curing rates that were more than double compared to the other fast-cure formulations at all temperatures. In real conditions, Photocap 15455 and Photocap 15435 encapsulants laminate in less than ten minutes and yield gel content values of greater than 80%. Laminator throughput increased by as much as 30% with the new encapsulants. STR utilizes identical manufacturing technology, globally, to ensure that modules made anywhere in the world are protected with analogous high quality standards and comply with all major certification requirements. Photocap 15455 and 15435 comply with "STR Protected" high standards which are internal to STR. "STR Protected" means that STR employs the same identical manufacturing technology around the world to produce the highest performance encapsulant products designed to meet the standards of weathering and protecting module service life. "STR Protected" signifies much more than the average EVA encapsulant.....STR employs "User Friendly" (UF) low shrink technology which prevents the EVA encapsulants from shrinking during lamination. Shrinkage causes cell breakage, micro-cracks in the cell, and/or voids that decrease cell efficiency and electrical output. STR's "User Friendly" technology always provides the same no shrink characteristics for module manufacturers around the globe. Photocap 15455 and Photocap 15435 provide the project owner the confidence that your project delivers the maximum return on investment that is expected. STR is setting a whole new set of quality standards for the photovoltaic industry; high throughput rates in module processing and long-term performance standards for every project performing outdoors. "STR Protected" has every angle covered, in every world market. **Specialized Technology Resources, Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 3, 9240.**

Pre-engineered racking systems for the solar market

Unistrut International Corporation's Energy Solutions division now offers pre-engineered racking systems, demonstrating a cost-effective support structure for photovoltaic panels in a wide variety of solar applications, including rooftop, ground and ballast-mounted installations. PV panels can be mounted in a portrait or landscape format. "Pre-engineered solutions provide labor and material savings to the marketplace," said David Devine, National Sales Manager. Four new designs will meet the wind load, snow load, dead load and seismic requirements of approximately 75-80% of all commercial solar applications. "With minor modifications, the system can be customized to meet more specific requirements," added Devine. With a pre-engineered solution, contractors and solar integrators no longer have to wait for an engineering analysis. Accurate costs can also be generated in a matter of days. The company estimates a 30-35% savings over custom racking systems. "These are flexible, efficient designs that optimize the use of product and affordable materials," said Ray Szkola, Engineering Manager. "We have reduced the number of pieces, provided for simple connections, and lengthened spans to minimize roof or ground penetrations. This all makes it easy for a laborer or skilled tradesman to install the system, and reduces cost." Unistrut is unique in that it manufactures, designs, fabricates and installs solar racking systems. Fabrication, pre-assembly, engineering and installation services make Unistrut a convenient one-stop shop. "Ease of installation is critical for the timeline of the job," said Devine. "A system that is easy to install will help minimize potential bottlenecks." **Unistrut International Corporation's Energy Solutions, Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7846.**

Azimuth & elevation absolute encoder

US Digital announces the release of its latest absolute, blind hollow bore shaft encoder, the HBA4. HBA4 absolute encoders are used as azimuth and elevation position sensors in two axes tracking systems, commonly used in solar applications. This single turn absolute encoder provides 16-bits of resolution over 360 degrees of shaft rotation. The HBA4 is available with a 12mm or 0.500" diameter bore size with either a ball bearing or sleeve bushing bearing assembly and is sealed to an IP66 rating. The absolute encoder slips over a shaft and is locked in place with a non-marring clamp mount. A

flexible anti-rotation tether provides single point mounting for bolt circles ranging from 2.50" up to 5.00" in diameter and compensates for shaft run out. The HBA4 communicates serially to a host via the industry standard RS485 bus. HBA4 Product Features: 16 bit single turn absolute resolution, angular accuracy 0.07 degrees; hollow bore with tether mount provides run out compliance; programmable resolution, zero location, CW/CCW direction; ball bearing or sleeve bushing rotating assembly; non-marring clamp mount; IP66 rating; -25 C to 85 C operating temperature rating; and 2-year warranty. **US Digital, Intersolar North America 2010, Moscone Center, West Hall, Level 1, 7952**

Flexible thin film inspection

Xiris Automation Inc., a 20 year veteran in the machine vision industry, has developed TFI-FLEX, an inspection system used for detecting defects in Flexible Thin Film Photovoltaic Cells. Designed for in-line quality control use by manufacturers of Flexible Thin Film Cells, TFI-FLEX is capable of detecting defects in surface quality and chemical deposition of cells at multiple points along a production line. The TFI-FLEX Inspection System performs visual checks on the activated side of a flexible thin film cell, looking for defects that are specific to quality issues arising from the handling and manufacture of thin film cells, including topological defects such as scratches, bumps and dents; and print/deposition defects such as chemical deposition flaws, stains, spots, watermarks, fingerprints, and color variations. The system uses a proprietary method of acquiring images with very low optical distortion in color and/or monochrome mode, detecting defects that are much smaller than 1 mm in size. TFI-FLEX is an important new tool for inspecting cells after deposition, after laser etching, after printing, and after final environmental coating of the cells. The system can easily be retrofitted into existing lines and can be configured to include multiple inspection modules (each with a solution-optimized design). **Xiris Automation Inc., Intersolar North America 2010, Moscone Center, West Hall, Level 2, 8151.**

Also visit the Intersolar North America 2010 homepage at http://www.intersolar.us/index.php?id=1&L=1
