



Solarmer Energy Corporate Newsletter

JUNE 2007

The Start of a Promising Journey

Special points of interest:

- AMREL Acquires Solarmer Energy Inc.
- Solarmer Energy Recruits UCLA's Dr. Gang Li & Dr. Vishal Shrotriya
- Technology & Strategic Partners Roadmap Developed
- New Research Findings at UCLA
- Benefits of having Solarmer's New Facility within AMREL

Inside this issue:

- AMREL Moves Into Renewable Energy Market with the Acquisition of Solarmer Energy Inc. **1**
- Solarmer Recruits UCLA's Dr. Gang Li & Dr. Vishal Shrotriya **2**
- Technology Development Roadmap **2-3**
- Research progress at UCLA **3**
- Strategic Advantages of Solarmer's New Facility **4**

AMREL Moves Further Into the Renewable Energy Market with the Acquisition of Solarmer Energy Inc.

-- Market Wire



El Monte, California,
May 17, 2007 –

AMREL/American Reliance Inc. (ARI) continues to expand their core technologies with the acquisition of Solarmer Energy Inc. (SOLARMER). A privately held Southern California-based startup company, SOLARMER specializes in the development and commercialization of a new generation of polymer solar cells that will significantly reduce solar cell manufacturing costs. The impact of such a cost effective solar solution on potential applications from building materials to portable electronic devices is nearly unfathomable.

Always a visionary and leader in new technology, AMREL's Power Division already has an active presence within the renewable energy market through the development and manufacturing of fuel cell test equipment. The acquisition of SOLARMER significantly strengthens and expands AMREL's growing technical applications, and

builds upon the energy-focused business momentum already established by AMREL.

According to Edward Chen, CEO of AMREL, "The acquisition of SOLARMER Energy is a key milestone for AMREL, as it enables us to leverage the technologies we have acquired over the past two decades to address new applications within the renewable energy market. By joining SOLARMER's extremely talented research team with AMREL's well established expertise in engineering and manufacturing, both companies will realize the benefits of this breakthrough technology more rapidly and cost effectively. However, more important than the impact such a breakthrough would have on AMREL and SOLARMER are the implications an unlimited, cost effective source of power would have on the world's growing power crisis, particularly in remote and economically depressed regions of the world."

Woolas Hsieh, SOLARMER's

President said, "SOLARMER has differentiated itself with an ability to increase the efficiency of polymer materials using its patented technologies and know-how. We are thrilled to take our proven model and join forces with AMREL to create one of the most credentialed technology organizations. The quality brand that AMREL offers along with strong customer relationships and a global footprint made AMREL the 'right fit' partner to take the SOLARMER vision to the next level—providing even greater opportunities for our shareholders, customers and employees."

AMREL/American Reliance began manufacturing power supplies over thirty years ago, and today is a leading manufacturer of programmable power products and rugged military and industrial mobile computers. SOLARMER's technology will be developed and commercialized utilizing the existing AMREL team, as well as through AMREL's network of business partners.





Dr. Gang Li, Senior Research Fellow, Solarmer Energy Inc.

Solarmer Energy Recruits UCLA's Dr. Gang Li & Dr. Vishal Shrotriya

By: Kalvin Chen

As we approach mid-2007, Solarmer Energy has already recruited two highly qualified and well-respected PhD's from the University of California, Los Angeles' (UCLA) Nano Renewable Energy Center (NREC). We are proud to introduce Dr. Vishal Shrotriya and Dr. Gang Li.

DR. VISHAL SHROTRIYA joined Solarmer Energy as a Technology Researcher in February 2007. Dr. Shrotriya graduated with a B.S. degree in Metallurgical Engineering & Materials Science from the reputed Indian Institute of Technology, Bombay in 2002. He later received his M.S. and Ph.D. degrees in Materials Science from University of California, Los Angeles (UCLA) in 2004 and 2007.

Dr. Shrotriya's doctoral research focused on improving the efficiency of polymer photovoltaic cells. He has extensive knowledge in organic electronic materials and devices, and has gained significant experience in device fabrication processes, materials and device characterization, device physics

and modeling. He has co-authored 16 publications in reputed scientific journals and has presented at six different international conference related to his field.

At UCLA, Dr. Shrotriya received the Outstanding Master of Science award from Henry Samueli School of Engineering and Applied Science in 2004, and was awarded with Dissertation Year Fellowship in 2006-07 for his final year doctoral research. His name has been included in the reputed Marquis Who's Who in America list for year 2007.

At Solarmer, Dr. Shrotriya will plan, execute, and lead the research and development, study emerging market trends, and develop products to meet the market needs.

DR. GANG LI joined Solarmer Energy as a Senior Research Fellow in June 2007. Dr. Li received his B.S. degree in Space Physics from Wuhan University (China) in 1994. He obtained his Ph.D. degree in Condensed Matter Physics from Iowa State University (ISU) in 2003. Dr.

Li also holds a M.S. degree in Electrical Engineering from ISU.

Dr. Li's graduate research included magnetic spectroscopy study of organic light emitting materials/devices as well as improving the efficiency of white organic light emitting devices. Dr. Li conducted his postdoctoral research in Prof. Yang Yang's group in Department of Materials Science and Engineering (MSE) in University of California, Los Angeles (UCLA) from 2004 – 2007, where his research focus was on improving polymer solar cell performance.

Dr. Li has extensive experience in organic electronic materials and devices. Also, he has authored/co-authored over 20 publications in renowned scientific journals like Nature Materials, Physics Review B, Advanced Materials etc. He has presented at over 10 international conferences, including 3 invited presentations. In 2006, Dr. Li received the prestigious Chancellor's Award for Postdoctoral Research from UCLA.

"Solarmer has already recruited two highly qualified and well-respected PhD's from UCLA's Nano Renewable Energy Center (NREC)."

Kalvin Chen



Dr. Vishal Shrotriya, Technology Researcher, Solarmer Energy Inc.

Technology Development Roadmap

By: Dr. Vishal Shrotriya

Solarmer Energy has been successful in setting-up a world-class research and development (R&D) center at its corporate office location in El Monte, California. I joined Solarmer as a Technology Researcher in February 2007 and became the

first member of the R&D team. On June 1st, Dr. Gang Li joined us as Senior Research Fellow and the leader of the R&D team. Dr. Li will lead and execute Solarmer's R&D to achieve our goal of commercializing the polymer solar cell tech-

nology by the year 2010.

In the next few months, we will expand our research and development team by recruiting world class scientists, engineers, and technician. This team will have the capability to plan and exe-

Research & Development Update (cont.)

cute research projects, innovate, identify key technology trends, and perform cohesively to achieve the goals set forth by the shareholders.

During the past two months, Solarmer has finalized Technology Roadmap to deliver commercial grade polymer solar cells to the market by the year 2010. We have also formulated a Strategic Partnership Map to identify key collaborators in the vertical and horizontal markets, who will assist us in reducing the development cost and shortening the time to commercialization. Solarmer has

also prepared a Joint Product Development Program to plan, execute, and monitor our various joint development efforts. We are aggressively pursuing technical collaboration with several key industry players to augment our technological know-how and formulating long term partnership which will enable Solarmer and its partners to exploit the potential of polymer solar cell in the future.

Solarmer has established a goal of achieving 8% efficient polymer solar cells with an area of 100 cm² and

lifetime of 3 years by the year 2010. We intend to focus on these aspects during the course of next three years through aggressive in-house R&D and through strategic collaboration with industry leaders who share our vision. Our mission is to not only bring the plastic solar cell technology to market but also provide an affordable solar photovoltaic system to two billion people in the world who cannot afford to have electricity.

Research Progress at UCLA

By: Dr. Yang Yang

In the past half year, significant progress has been achieved at UCLA. Since demonstrating high efficiency polymer solar cell, we have continued to study the mechanism of the self-organization effect in polymer solar cells. We recently studied self-organization effect in regioregular poly(3-hexylthiophene) (RR-P3HT):[6,6]-phenyl-C61-butyric acid methyl ester (PCBM) films in an evolutionary way to understand the origin of increased ordering in the polymer films. The work has recently been published in *Advanced Functional Materials* as an article authored by Dr. Gang Li.

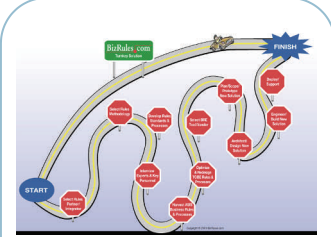
Besides solar cell application, UCLA group invented a new type of near-infrared detector in collaboration

with Prof. Luping Yu at University of Chicago. Our detector shows very respectable performance: external quantum efficiency exceeding 38%, bandwidth of 4 MHz and the noise equivalent power of $3.85 \times 10^{-12} \text{ W/Hz}^{1/2}$ at 850 nm. We believe this work will open up new applications for low band gap materials in near-infrared detection.

Taking advantage of the high efficient PLED and photo-detector demonstrated in our lab, we demonstrated an all-polymeric opto-coupler operating at low voltage. The frequency response of the opto-coupler is 500 KHz, which are seven orders faster than previous report. The linear relationship between the output and input currents, together with high ON/OFF

ratio, qualifies the opto-coupler for use in both low-cost analog and digital circuits.

In addition, new polymeric materials development is going well in the lab, and more than 10 new materials have been developed recently. These materials are currently being tested for application in polymer solar cells to achieve high efficiency.



Solarmer has established a goal of achieving 8% efficient polymer solar cells with an area of 100 cm² and lifetime of 3 years by the year 2010.

“Our mission is to not only bring the plastic solar cell technology to market but also provide an affordable solar photovoltaic system to two billion people in the world who cannot afford to have electricity.”

Dr. Vishal Shrotriya



From Top Down: Solarmer's laboratory & office space



The Start of a Promising Journey

Phone: 626-456-8090
Fax: 626-456-8082
Questions: info@solarmer.com

SOLARMER Energy Inc. is developing plastic solar cells, with an innovative technology which generates low-cost electricity from the power of the sun. SOLARMER Energy is leveraging its key patents, its partnerships with the University of California, Los Angeles (UCLA), and its resourceful corporate team to commercialize its new plastic solar cell technology. With the advantages of being architecturally compatible, low-cost, and versatile and flexible, SOLARMER Energy anticipates that the success of its plastic solar cell technology will open a new range of applications beyond what the conventional silicon-based solar cells can achieve.

Strategic Advantages of Solarmer's New Facility

By: Dr. Gang Li & Kalvin Chen

Solarmer Energy is proud to announce the grand opening of its new 6,000 square feet laboratory and office. Since the beginning of May, we have initiated the consolidation of our research and development and business operations into one location, such as transferring our R&D efforts from University of California, Los Angeles (UCLA) to El Monte and recruiting Dr. Gang Li and Dr. Vishal Shrotriya. The strategic advantages of unifying our operation with American Reliance Inc. (AMREL) are two-fold:

Tangible benefits –
Over the next three years, the spacious laboratory and office space will not only sustain the existing R&D and business activities, but it will also enable us to maximize the additional space.

After moving in the necessary capital equipments and setting up the laboratory, it is evident that our lab has sufficient capacity to expand from its R&D into pilot production lines. Also, the new office setting will enable Solarmer to build up its research team. The extra space will suffice for the next three years.

Intangible benefits –

Looking beyond the obvious tangible benefits, the essence of AMREL and Solarmer Energy's long term partnership will bring forth complimentary strengths and advantages. Three key benefits we have encountered immediately are access to resources, technology know-how, and strategic partners.

1. Access to resources — The fact that our office is located within AMREL, it will give Solarmer an edge in seamless integration with their key operating functions such as Human Resource, Marketing, Accounting, Information Technology, etc. This integration process has commenced since mid May and should be completed by September 2007. Once the process is complete, we will not only be able to maximize our operational efficiency, but we will also have access to AMREL's key departments and personnel.

2. Technology know-how and strategic partners — With over 20 years of accumulated knowledge and experience in the electronics field, AMREL and its partners have pos-

sessed a majority of the three C's (control, conversion, and communication) technologies, which are essential in all of the photovoltaic (PV) applications such as, inverters, chargers, regulators, batteries, control circuits, etc. With the technologies and engineers ready in-house, AMREL and its partners are ready to support Solarmer's growth. These available technologies can help shorten about three years of Solarmer's total R&D time if it were to develop the technologies on its own.

With access to a broad range of resources, Solarmer has begun to exploit these benefits. The integration process is progressing and the available technology know-how and partners are prepared. Once Solarmer achieves the research goal in its Technology Roadmap, it will begin to work cohesively with AMREL to develop new applications that will bring a clean, low-cost, and versatile photovoltaic solution to its customers.

Visit us at
www.solarmer.com

We are aggressively seeking for strategic partnerships.

If you are interested, please contact partnership@solarmer.com.

Solarmer Energy is actively seeking highly motivated and talented individuals to build its research team.

If you are interested, please contact careers@solarmer.com.