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Global Photonic Energy Corporation's Princeton University Research Partners Achieve New Record with Near Infrared Absorbing Organic Photovoltaic Cell

-- Latest breakthrough sets stage for doubling utilization of sunlight for organic solar cells --

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EWING, New Jersey, December 30, 2005 – Global Photonic Energy Corporation (GPEC), the leading developer of Organic Photovoltaic (OPV™) technology for ultra-low cost high power solar cells, today announced that the Company's research partners at Princeton University (Princeton) and the University of Southern California (USC) have achieved a new record in an organic solar cell that is responsive to light in the near infrared (NIR) range of the solar spectrum. NIR radiation is invisible to the human eye. Many so-called "night vision" devices operate by sensing infrared light which is emitted by warm objects and makes up a substantial portion of all energy reaching the earth from the sun. Under only NIR radiation, the Princeton solar cell would appear to be generating power in the dark – as the human eye is only sensitive to visible light.

This latest achievement is the highest level of conversion performance yet achieved for an organic solar cell in the IR portion of the solar spectrum. The Company's researchers detail this latest achievement in the December 2, 2005 issue of *Applied Physics Letters.*

The Global thirst for energy is continually expanding. Renewable energy sources have experienced rapid growth in recent years as costs have improved. Global solar cell production has grown over 20% annually for the last 20 year reaching sales of $6 billion in 2004. This strong growth has resulted in a world-wide shortage of semiconductor silicon driving 2005 solar cell prices higher. Cost is a critical factor in the continued

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expansion of the solar cell industry. Currently, solar generated power is four to six times more expensive to consumers than coal generated power.

Traditionally, photovoltaic or "solar" cells have been constructed of an inorganic semiconductor like silicon. Efficient silicon based devices, especially of large surface area, are difficult and expensive to produce. They are fragile, heavy and opaque – limiting applications and potential uses. Thus, while the cost of silicon solar cells has dropped dramatically since the 1950's – further reductions and new capabilities are needed for additional market penetration and broader adoption.

Recent efforts have focused on the use of "organic" materials. Organic semiconductors contain the ubiquitous element Carbon and are capable of achieving ultra-low cost solar power generation that is competitive with traditional fossil-fuel sources. Organic materials have the potential to achieve ultra-low cost production costs *and* high power output. The materials are ultra-thin and flexible and can be applied to large, curved or spherical surfaces. Because the layers are so thin, transparent solar cells can be applied to windows creating power-generating glass that retains its basic functionality.

GPEC sponsors research by Professor Stephen R. Forrest at Princeton and Professor Mark E. Thompson at USC. Professor Forrest's research team has focused on organic "small-molecule" devices that are assembled literally a molecule at a time in highly efficient nanostructures. These devices have layers and/or structural elements that can be extremely small – at only ½ a billionth of a meter thick and can be applied to low-cost, flexible plastic surfaces.

One challenge for organic solar cells has been the efficient capture and conversion of sunlight. Sunlight consists of photons (particles of light) that are delivered across a spectrum that includes invisible ultraviolet (UV) light, the visible spectrum of colors – violet, indigo, blue, green, yellow, orange and red -- and the invisible infrared or IR spectrum. The amount of incoming photons across the UV, visible and IR spectrums is about 4%, 51% and 45%, respectively. The photons absorbed by a solar cell directly impacts the power output. To achieve high power output, solar devices must take advantage of as much of the solar spectrum as possible. Typical organic solar cells absorb only a fraction of the visible portion of the solar spectrum. In fact, the best organic solar cells absorb and convert only about 1/3 of the total available light utilizing primarily the visible portion of the spectrum.

"This latest device demonstrates that significant power can be harvested from the IR and near-IR portion of the solar spectrum", said Dr. Stephen R. Forrest. "In fact, this novel approach has the potential to double the power output of organic solar devices

with power harvested from the near-IR and IR portion of the solar spectrum. With this approach we are well on our way to power levels exceeding 100 watts per meter", Forrest concluded.

Organic materials can be applied to virtually any surface using a method akin to spray painting. Production methods of this sort are easily adaptable to continuous and so called "roll-to-roll" manufacturing processes and hold the promise of dramatically reduced production costs.

Organic materials also can be used in flexible applications. GPEC's proprietary OPV ™ technologies can be used to create photovoltaic cells of different colors or cells that act as window tinting in building integrated applications.

Aaron L. Wadell, Chief Operating Officer of Global Photonic Energy Corporation, stated, "We would like to congratulate Professor Forrest on this latest achievement. Dr. Forrest's pioneering efforts in nanotechnology, organic electronics, physics and device fabrication have created an unmatched track-record of results. Dr. Forrests' organic photovoltaic cells have consistently achieved the highest performance."

About Global Photonic Energy Corporation

Global Photonic Energy Corporation (GPEC) is the world leader in developing Organic Photovoltaic (OPV™) and Photo Fuel™ (Hydrogen) production technologies. GPEC is collaborating with world-class organizations to transform energy markets. GPEC has a long-standing research partnership with Princeton University and the University of Southern California.

GPEC was founded in 1994 by entrepreneur Sherwin I. Seligsohn. Mr. Seligsohn has been the Chairman of the Board and Chief Executive Officer of the Company since its inception. Mr. Seligsohn is also the founder, Chairman and Chief Executive Officer of Universal Display Corporation, a public company (NASDAQ: PANL), and American Biomimetics Corporation, a new materials sciences and technology venture group. Previously, Mr. Seligsohn founded and served as the Chairman of the Board and then Chairman Emeritus of InterDigital Communications Corporation (Formerly International Mobile Machines Corporation), a public company (NASDAQ: IDCC).

Global Photonic Energy Corporation is located at the Princeton Crossroads Corporate Center in Ewing, New Jersey, minutes away from its research partner at Princeton University.

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