

From Light to Power, Enabled by Nanotechnology

Konarka develops and manufactures breakthrough products for harnessing the energy in sunlight and indoor light and converting it into electricity. This electricity is generated by Konarka's photovoltaic solar cells with no moving parts, no noise, and no fuel.

Konarka's solar cells are lightweight, flexible, and versatile. Until now, solar cells have typically been heavy, expensive, glass-based structures and their applications were limited by their rigidity. Konarka is changing all that with photovoltaic solar cells that can be used in many applications where traditional photovoltaics can't compete.

Unlimited Applications

Konarka's solar cells provide reliable power for a broad range of devices and applications. Unique features include color options, opaque or translucent material choices, and the ability to conform to almost any design requirement. Because Konarka's solar cells can be produced in long, flexible rolls, they can be cut and configured into a wide variety of sizes to fit a multitude of products.

Where can Konarka solar cells be used?

- Battery charging
- > Replacement power for portable electronics
- Power for remote locations that will likely never see a power line
- Power generated from a solar roof of a home or business
- Self-powered billboards
- > Portable, renewable power for soldiers in the field
- And many more applications!

Konarka solar cells provide convenient, reliable power for portable electronics

The Importance of Solar Energy

The market opportunity for photovoltaic products is nearly infinite, with one-third of the earth's population having no access to power grids. In California, photovoltaics are now used to address the problems with quality and availability of electric power, as well as a precaution against the risks of outages and rapidly rising utility rates. It is expected that many other areas of the United States, as well as other countries, will do the same.

In 2002, the global photovoltaic industry sold over 500 million watts of product, with an annual growth rate of nearly 35%. As energy use and cost continue to increase worldwide, the need for efficient and cost-effective solar energy technology is more important than ever.

Benefits of Konarka Solar Cells

- Flexible materials allow for virtually unlimited applications
- Usable where traditional solar cells are impractical
- Multiple colors, translucent and opaque options to fit into any product design
- Operation in both natural and artificial light
- Long-term durability ensures ongoing value
- Cells can be cut to any size
- Reduced costs for raw materials and manufacturing

About Konarka

Konarka Technologies, Inc. is dedicated to the development and commercialization of photovoltaic products that convert sunlight and indoor light into direct current (DC) electrical energy.

These products are thin, lightweight, flexible, and scalable. They are manufactured in a variety of form factors, providing solutions for portable and distributed power needs for commercial, industrial and consumer applications.

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Advances in Photovoltaic Technology and Manufacturing

Photovoltaic technology, in use for many years, was greatly improved by the research of Dr. Michael Grätzel, world-renowned scientist and scholar at the Swiss Federal Institute of Technology EPFL, who developed a new type of solar cell based on dyesensitized layers. These dye-sensitized photovoltaic cells are efficient across a wide spectrum of light, making them useful both indoor and out.

Konarka has improved on this technology by developing and manufacturing the next generation of photovoltaic products that are more efficient and less expensive to manufacture than previous products.



Konarka's roll-to-roll, high volume manufacturing process produces thin, flexible solar cells

Konarka creates these photovoltaic cells with simplified coating processes on flexible materials rather than on glass or silicon, which are used in traditional photovoltaic cells. This significantly lowers manufacturing costs.

Konarka has developed roll-to-roll manufacturing processes that allow dye-sensitized photovoltaic cells to be produced virtually anywhere in the world, even in regions where sophisticated manufacturing and support infrastructure is unavailable. With low-cost raw materials and reduced-cost manufacturing technology and processes, these new solar cells can be manufactured for less than half the cost of traditional crystalline solar cells.



Konarka's flexible solar cell powers this spinning fan, providing low-cost power from light

International Development Efforts

At its United States headquarters in Massachusetts, Konarka focuses on dyesensitized structures. Konarka is the only North American licensee of the dye solar cell technology from the Swiss Federal Institute of Technology (EPFL). In addition, Konarka has the exclusive worldwide licensing rights to technology from the University of Massachusetts related to low temperature sintering of titania. This technological breakthrough is the basis upon which the company was founded and has been a catalyst for investment by financiers, the University and the Company's employees.

At its wholly owned subsidiary in Austria, Konarka focuses on the development of organic (all plastic) solar cells. Organic cells hold the promise of further reducing manufacturing cost while opening the door to new solar cell form factors, such as textiles that generate electricity.

Konarka has filed for more than 20 patents ranging from cell chemistry to product design and applications. This broad body of intellectual property gives the Company a competitive advantage in product development. Konarka's scientific advisory board includes the world's leading scientists in photo electrochemical cells and organic solar cells. In addition, Konarka has established collaborative development activities with leading Universities in the United States and Europe.

