

## NanoGram's solar cell manufacturing process wins DOE award

**June 11, 2008**--A laser-based silicon-deposition technique developed by NanoGram Corporation (Milpitas, CA) for solar cell manufacturing has won an Energy Innovator Award from the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. The process reduces solar cell cost to the level of thin-film photovoltaics while delivering high efficiency, according to NanoGram.

The award recognizes businesses, individuals and governmental agencies that have successfully developed or deployed energy-efficiency and/or renewable-energy technologies, services, or policies.

If one wants to find photovoltaics that have both high efficiency and high cost, one needs to look no further than the traditional crystalline silicon solar cell. Drastic reductions in the cost of silicon photovoltaics are normally achieved by turning instead to a (polycrystalline or amorphous) thin-film manufacturing process, which unfortunately also reduces the cell's operating efficiency by a large margin.

Making crystalline silicon solar cells normally involves drawing boules of single-crystal silicon from a crucible full of molten silicon--a delicate and expensive process. Wafers are then sliced from the boule and then made into the finished product. What NanoGram has developed instead is a laser reactive-deposition technique that grows silicon crystals in a more-direct approach, reducing silicon consumption by more than a factor of four. Cost reductions generated using this approach are expected by NanoGram to bring solar cell module costs well below a dollar a watt by the time high-volume manufacturing production levels are reached in 2012.

An R&D pilot plant is currently under construction at NanoGram's headquarter facilities.

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