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Silicon-based Nanomaterials

MILPITAS, Calif., Feb. 11, 2008 -- NanoGram Corp. announced today it has created a new class of silicon nanoscale materials for use in electronics, energy, display, and solid-state lighting applications.

The silicon materials were developed using a proprietary laser pyrolysis process. NanoGram said it has demonstrated pilot-scale production volumes of doped and intrinsic silicon (Si), nanocrystalline silicon nitride (Si₃N₄), and nanocrystalline silicon carbide (SiC).

"The need for nanoscale silicon materials is expanding at a rapid pace," said Clifford Morris, vice president of global business development at NanoGram. "This suite of materials offers a significant design advantage for products that require precise composition and size control at the nanoscale. Recently, there have been significant developments in energy technologies with regard to silicon batteries, solar cells and printed electronics, and NanoGram is creating materials that target the needs in those areas for specialty, high-value materials."

Silicon nanoparticles manufactured using NanoGram's NPM (nanoparticle manufacturing) process are tailored for size, structure and morphology, featuring average nanoparticle sizes as low as 15 nm and high purity levels required for semiconductor and electronics applications.

Other target applications for NanoGram's nanoscale silicon nitride include nitride phosphors where these materials enable the manufacture of nano- to submicron-sized rare earth doped alkaline earth nitride and oxynitride phosphors, which are particularly suited to making warm white light LEDs, the company said.

NanoGram is showcasing its silicon materials platform at the NanoTech 2008 show in Tokyo this week, Booth E-40.

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