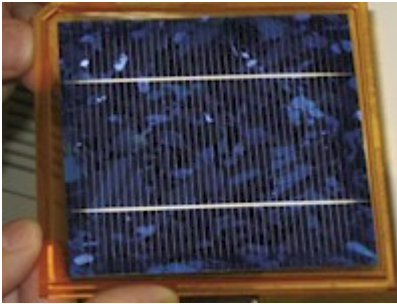


## Printed Electronics World Articles

---



### Printable silicon material

**13 Aug 2009**

NanoGram Corporation has announced the successful fabrication of the first thin film transistor (TFT) produced by ambient printed nanosilicon to reach a carrier mobility of 2.0 cm<sup>2</sup>/Vs. The TFT is based on a non-pyrophoric material and was produced by Sharp Laboratories of America.

The printable silicon material is based on nano-scale crystalline silicon particles formulated into inks, which can be ink-jetted or spin coated onto a substrate and then fabricated into a TFT. The proprietary ink technology was developed as part of NanoGram's technology development agreement (TDA) with Teijin Limited.

*"Since NanoGram's material is both inorganic and non-pyrophoric, it does not suffer from the product stability issues that can affect organic semiconductors nor the potential handling issues associated with polysilane-based materials,"* said Scott Ferguson, NanoGram Vice President of Advanced Materials Technology and Operations.

*"We feel this product can eliminate two important roadblocks in the printed electronics industry,"* said Ferguson. *"Aside from the product advantages, such as lifetime stability and the performance of a proven inorganic semiconductor, our silicon inks are formulated with common printing solvent systems designed with an emphasis on manufacturability and safe handling using existing printing technologies and equipment."*

Printed electronics applications include flat panel display backplanes for LCD and thin film photovoltaics.

The silicon ink is produced using NanoGram's proprietary laser pyrolysis-based Nanoparticle Manufacturing (NPM™) process, suitable for high volume production.

To learn more attend [Printed Electronics Asia 2009](#)  or [Printed Electronics USA 2009](#) .

Source top image: University of Waterloo

---